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Credit Catalog

County College of Morris
Outstanding Education • Affordable Price
2017 - 2018 Catalog
214 Center Grove Road
Randolph, NJ 07869-2086
973-328-5000

www.ccm.edu (http://www.ccm.edu)

Disclaimer: This catalog includes policies, procedures, program
descriptions and tuition and fees in effect at the time of publication.
The college and its Board of Trustees reserve the right to change
or modify the policies, procedures, program descriptions and tuition
and fees at any time.

Academic Information

Academic Information contains what you need to know to succeed
as a student at CCM. In the navigation area, you will find information
on college policies and procedures that relate to your academic
career, grades, changing of majors, graduation requirements and
more.

Academic Calendar

Summer 2017

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 22</td>
<td>Summer Early 5 Week classes begin</td>
</tr>
<tr>
<td>May 26</td>
<td>Last day to drop classes without academic grade - Summer Early 5 Week</td>
</tr>
<tr>
<td>May 29</td>
<td>Memorial Day – College Closed</td>
</tr>
<tr>
<td>June 15</td>
<td>Last day to drop classes with a &quot;W&quot; - Summer Early 5 Week</td>
</tr>
<tr>
<td>June 15</td>
<td>Last day to withdraw from college - Summer Early 5 Week</td>
</tr>
<tr>
<td>June 24</td>
<td>Summer Early 5 Week classes end</td>
</tr>
<tr>
<td>June 26</td>
<td>Summer Late 5 Week classes begin</td>
</tr>
<tr>
<td>June 27</td>
<td>Summer 8 Week classes begin</td>
</tr>
<tr>
<td>June 30</td>
<td>Last day to drop classes without academic grade - Summer Late 5 Week</td>
</tr>
<tr>
<td>July 3</td>
<td>Last day to drop classes without academic grade - Summer Late 5 Week</td>
</tr>
<tr>
<td>July 4</td>
<td>Independence Day - College Closed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 20</td>
<td>Last day to drop classes with a &quot;W&quot; - Summer Late 5 Week</td>
</tr>
<tr>
<td>July 20</td>
<td>Last day to withdraw from college - Summer Late 5 Week</td>
</tr>
<tr>
<td>July 29</td>
<td>Summer Late 5 Week classes end</td>
</tr>
<tr>
<td>July 31</td>
<td>Summer 3 Week classes begin</td>
</tr>
<tr>
<td>August 2</td>
<td>Last day to drop classes without academic grade - Summer 3 Week</td>
</tr>
<tr>
<td>August 4</td>
<td>Last day to drop classes with a &quot;W&quot; - Summer 8 Week</td>
</tr>
<tr>
<td>August 4</td>
<td>Last day to withdraw from college - Summer 8 Week</td>
</tr>
<tr>
<td>August 14</td>
<td>Last day to drop classes with a &quot;W&quot; - Summer 3 Week</td>
</tr>
<tr>
<td>August 14</td>
<td>Last day to withdraw from college - Summer 3 Week</td>
</tr>
<tr>
<td>August 19</td>
<td>Summer 3 Week classes end</td>
</tr>
<tr>
<td>August 21</td>
<td>Summer 8 Week classes end</td>
</tr>
</tbody>
</table>

Fall 2017

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 30</td>
<td>Classes begin - Full Semester, Early Start 2 Week, 5 Week and Early Finish 8 Week classes</td>
</tr>
<tr>
<td>September 1</td>
<td>Last day to drop classes without academic grade - Early Start 2 Week classes</td>
</tr>
<tr>
<td>September 4</td>
<td>Labor Day – College Closed</td>
</tr>
<tr>
<td>September 6</td>
<td>Last day to drop classes without academic grade - 5 Week and Early Finish 8 Week classes</td>
</tr>
<tr>
<td>September 11</td>
<td>Last day to drop classes with a &quot;W&quot; - Early Start 2 Week classes</td>
</tr>
<tr>
<td>September 12</td>
<td>Last day to drop classes without academic grade - Full Semester</td>
</tr>
<tr>
<td>September 12</td>
<td>Early Start 2 Week classes end</td>
</tr>
<tr>
<td>September 13</td>
<td>Mid Start 2 Week and 14 Week classes begin</td>
</tr>
<tr>
<td>September 15</td>
<td>Last day to drop classes without academic grade - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>September 22</td>
<td>Last day to drop classes with a &quot;W&quot; - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>September 25</td>
<td>Last day to drop classes with a &quot;W&quot; - 5 Week classes</td>
</tr>
<tr>
<td>September 26</td>
<td>Mid Start 2 Week classes end</td>
</tr>
<tr>
<td>September 26</td>
<td>Last day to drop classes without academic grade - 14 Week classes</td>
</tr>
<tr>
<td>October 3</td>
<td>5 Week classes end</td>
</tr>
<tr>
<td>October 4</td>
<td>Late Start 2 Week and 10 Week classes begin</td>
</tr>
<tr>
<td>October 6</td>
<td>Last day to drop classes without academic grade - Late Start 2 Week classes</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
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<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>October 10</td>
<td>Last day to drop classes with a &quot;W&quot; - Early Finish 8 Week classes</td>
</tr>
<tr>
<td>October 13</td>
<td>Last day to drop classes with a &quot;W&quot; - Late Start 2 Week classes</td>
</tr>
<tr>
<td>October 17</td>
<td>Last Start 2 Week classes end</td>
</tr>
<tr>
<td>October 17</td>
<td>Last day to drop classes without academic grade - 10 Week classes</td>
</tr>
<tr>
<td>October 24</td>
<td>Early Finish 8 Week classes end</td>
</tr>
<tr>
<td>October 25</td>
<td>Late Start 8 Week classes begin</td>
</tr>
<tr>
<td>October 31</td>
<td>Last day to drop classes without academic grade - Late Start 8 Week classes</td>
</tr>
<tr>
<td>November 16</td>
<td>Last day to drop classes with a &quot;W&quot; - Full Semester</td>
</tr>
<tr>
<td>November 16</td>
<td>Last day to withdraw from college - Full Semester</td>
</tr>
<tr>
<td>November 21</td>
<td>Last day to drop classes with a &quot;W&quot; - 14 Week classes</td>
</tr>
<tr>
<td>November 22</td>
<td>Thanksgiving recess begins 10:45 p.m.</td>
</tr>
<tr>
<td>November 27</td>
<td>Classes resume</td>
</tr>
<tr>
<td>December 2</td>
<td>Last day to drop classes with a &quot;W&quot; - 10 Week classes</td>
</tr>
<tr>
<td>December 4</td>
<td>Last day to drop classes with a &quot;W&quot; - Late Start 8 Week classes</td>
</tr>
<tr>
<td>December 12</td>
<td>Classes end at 10:45 p.m.</td>
</tr>
<tr>
<td>December 13-18</td>
<td>Final exams (day classes)</td>
</tr>
<tr>
<td>December 13-19</td>
<td>Final exams (evening classes)</td>
</tr>
<tr>
<td>December 19</td>
<td>Semester ends - full semester, 14 Week, 10 Week and Late Start 8 Week classes</td>
</tr>
</tbody>
</table>

### Winterim 2018

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 20</td>
<td>Winterim 4 Week classes begin</td>
</tr>
<tr>
<td>December 22</td>
<td>Last day to drop classes without academic grade - 4 Week classes</td>
</tr>
<tr>
<td>December 25-January 1</td>
<td>Winter Break - College Closed</td>
</tr>
<tr>
<td>January 2</td>
<td>Winterim 2 Week classes begin</td>
</tr>
<tr>
<td>January 4</td>
<td>Last day to drop classes without academic grade - 2 Week classes</td>
</tr>
<tr>
<td>January 9</td>
<td>Last day to drop classes with a &quot;W&quot; - 4 Week classes</td>
</tr>
<tr>
<td>January 9</td>
<td>Last day to withdraw from college - 4 Week classes</td>
</tr>
<tr>
<td>January 11</td>
<td>Last day to drop classes with a &quot;W&quot; - 2 Week classes</td>
</tr>
<tr>
<td>January 11</td>
<td>Last day to withdraw from college - 2 Week classes</td>
</tr>
<tr>
<td>January 15</td>
<td>Martin Luther King Day - College Closed</td>
</tr>
<tr>
<td>January 16</td>
<td>Semester ends</td>
</tr>
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</table>

### Spring 2018

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>January 17</td>
<td>Classes begin - Full Semester, Early Start 2 Week, 5 Week and Early Finish 8 Week classes</td>
</tr>
<tr>
<td>January 19</td>
<td>Last day to drop classes without academic grade - Early Start 2 Week classes</td>
</tr>
<tr>
<td>January 23</td>
<td>Last day to drop classes without academic grade - 5 Week and Early Finish 8 Week classes</td>
</tr>
<tr>
<td>January 26</td>
<td>Last day to drop classes with a &quot;W&quot; - Early Start 2 Week classes</td>
</tr>
<tr>
<td>January 30</td>
<td>Last day to drop classes without academic grade - Full Semester</td>
</tr>
<tr>
<td>January 30</td>
<td>Early Start 2 Week classes end</td>
</tr>
<tr>
<td>January 31</td>
<td>Mid Start 2 Week and 14 Week classes begin</td>
</tr>
<tr>
<td>February 2</td>
<td>Last day to drop classes without academic grade - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>February 9</td>
<td>Last day to drop classes with a &quot;W&quot; - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>February 12</td>
<td>Last day to drop classes with a &quot;W&quot; - 5 Week classes</td>
</tr>
<tr>
<td>February 13</td>
<td>Mid Start 2 Week classes end</td>
</tr>
<tr>
<td>February 13</td>
<td>Last day to drop classes without academic grade - 14 Week classes</td>
</tr>
<tr>
<td>February 20</td>
<td>5 Week classes end</td>
</tr>
<tr>
<td>February 21</td>
<td>Late Start 2 Week and 10 Week classes begin</td>
</tr>
<tr>
<td>February 23</td>
<td>Last day to drop classes without academic grade - Late Start 2 Week classes</td>
</tr>
<tr>
<td>February 27</td>
<td>Last day to drop classes with a &quot;W&quot; - Early Finish 8 Week classes</td>
</tr>
<tr>
<td>March 2</td>
<td>Last day to drop classes with a &quot;W&quot; - Late Start 2 Week classes</td>
</tr>
<tr>
<td>March 6</td>
<td>Last day to drop classes without academic grade - 10 Week classes</td>
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<tr>
<td>March 12-17</td>
<td>Spring recess</td>
</tr>
<tr>
<td>March 17</td>
<td>Last day to drop classes without academic grade - Late Start 8 Week classes</td>
</tr>
<tr>
<td>March 19</td>
<td>Classes resume</td>
</tr>
<tr>
<td>March 20</td>
<td>Early Finish 8 Week classes end</td>
</tr>
<tr>
<td>March 21</td>
<td>Late Start 8 Week classes begin</td>
</tr>
<tr>
<td>March 30</td>
<td>Good Friday - College Closed</td>
</tr>
<tr>
<td>April 16</td>
<td>Last day to drop classes with a &quot;W&quot; - Full Semester</td>
</tr>
<tr>
<td>April 16</td>
<td>Last day to withdraw from college - Full Semester</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
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<tr>
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<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>April 17</td>
<td>Last day to drop classes with a &quot;W&quot; - 14 Week classes</td>
</tr>
<tr>
<td>April 26</td>
<td>Last day to drop classes with a &quot;W&quot; - 10 Week classes</td>
</tr>
<tr>
<td>May 1</td>
<td>Last day to drop classes with a &quot;W&quot; - Late Start 8 Week classes</td>
</tr>
<tr>
<td>May 8</td>
<td>All classes end at 10:45 p.m.</td>
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<tr>
<td>May 9-14</td>
<td>Final exams (day classes)</td>
</tr>
<tr>
<td>May 9-15</td>
<td>Final exams (evening classes)</td>
</tr>
<tr>
<td>May 15</td>
<td>Semester ends - Full Semester, 14 Week, 10 Week and Late Start 8 Week classes</td>
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<tr>
<td>May 25</td>
<td>Commencement</td>
</tr>
<tr>
<td>August 13</td>
<td>Last day to withdraw from college - Summer 3 Week</td>
</tr>
<tr>
<td>August 18</td>
<td>Summer 3 Week classes end</td>
</tr>
<tr>
<td>August 20</td>
<td>Summer 8 Week classes end</td>
</tr>
</tbody>
</table>

### Summer 2018

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 21</td>
<td>Summer Early 5 Week classes begin</td>
</tr>
<tr>
<td>May 25</td>
<td>Last day to drop classes without academic grade - Summer Early 5 Week</td>
</tr>
<tr>
<td>May 28</td>
<td>Memorial Day – College Closed</td>
</tr>
<tr>
<td>June 14</td>
<td>Last day to drop classes with a &quot;W&quot; - Summer Early 5 Week</td>
</tr>
<tr>
<td>June 14</td>
<td>Last day to withdraw from college - Summer Early 5 Week</td>
</tr>
<tr>
<td>June 23</td>
<td>Summer Early 5 Week classes ends</td>
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<td>June 26</td>
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<td>June 29</td>
<td>Last day to drop classes without academic grade - Summer Late 5 Week</td>
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<tr>
<td>July 2</td>
<td>Last day to drop classes without academic grade - Summer 8 Week</td>
</tr>
<tr>
<td>July 4</td>
<td>Independence Day - College Closed</td>
</tr>
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<td>July 19</td>
<td>Last day to drop classes with a &quot;W&quot; - Summer Late 5 Week</td>
</tr>
<tr>
<td>July 19</td>
<td>Last day to withdraw from college - Summer Late 5 Week</td>
</tr>
<tr>
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<td>Summer Late 5 Week classes end</td>
</tr>
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<td>July 30</td>
<td>Summer 3 Week classes begin</td>
</tr>
<tr>
<td>August 1</td>
<td>Last day to drop classes without academic grade - Summer 3 Week</td>
</tr>
<tr>
<td>August 2</td>
<td>Last day to drop classes with a &quot;W&quot; - Summer 8 Week</td>
</tr>
<tr>
<td>August 2</td>
<td>Last day to withdraw from college - Summer 8 Week</td>
</tr>
<tr>
<td>August 13</td>
<td>Last day to drop classes with a &quot;W&quot; - Summer 3 Week</td>
</tr>
</tbody>
</table>

### Fall 2018

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 30</td>
<td>Classes begin - Full Semester, Early Start 2 Week, 5 Week and Early Finish 8 Week classes</td>
</tr>
<tr>
<td>September 3</td>
<td>Labor Day – College Closed</td>
</tr>
<tr>
<td>September 4</td>
<td>Last day to drop classes without academic grade - Early Start 2 Week classes</td>
</tr>
<tr>
<td>September 6</td>
<td>Last day to drop classes without academic grade - 5 Week and Early Finish 8 Week classes</td>
</tr>
<tr>
<td>September 11</td>
<td>Last day to drop classes with a &quot;W&quot; - Early Start 2 Week classes</td>
</tr>
<tr>
<td>September 12</td>
<td>Last day to drop classes without academic grade - Full Semester</td>
</tr>
<tr>
<td>September 12</td>
<td>Early Start 2 Week classes end</td>
</tr>
<tr>
<td>September 13</td>
<td>Mid Start 2 Week and 14 Week classes begin</td>
</tr>
<tr>
<td>September 17</td>
<td>Last day to drop classes without academic grade - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>September 24</td>
<td>Last day to drop classes with a &quot;W&quot; - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>September 25</td>
<td>Last day to drop classes with a &quot;W&quot; - 5-Week classes</td>
</tr>
<tr>
<td>September 26</td>
<td>Mid Start 2 Week classes end</td>
</tr>
<tr>
<td>September 26</td>
<td>Last day to drop classes without academic grade - 14 Week classes</td>
</tr>
<tr>
<td>October 3</td>
<td>5 Week classes end</td>
</tr>
<tr>
<td>October 4</td>
<td>Late Start 2 Week and 10 Week classes begin</td>
</tr>
<tr>
<td>October 8</td>
<td>Last day to drop classes without academic grade - Late Start 2 Week classes</td>
</tr>
<tr>
<td>October 10</td>
<td>Last day to drop classes with a &quot;W&quot; - Early Finish 8 Week classes</td>
</tr>
<tr>
<td>October 15</td>
<td>Last day to drop classes with a &quot;W&quot; - Late Start 2 Week classes</td>
</tr>
<tr>
<td>October 17</td>
<td>Last Start 2 Week classes end</td>
</tr>
<tr>
<td>October 17</td>
<td>Last day to drop classes without academic grade - 10 Week classes</td>
</tr>
<tr>
<td>October 24</td>
<td>Early Finish 8 Week classes end</td>
</tr>
<tr>
<td>October 25</td>
<td>Late Start 8 Week classes begin</td>
</tr>
<tr>
<td>October 31</td>
<td>Last day to drop classes without academic grade - Late Start 8 Week classes</td>
</tr>
<tr>
<td>November 15</td>
<td>Last day to drop classes with a &quot;W&quot; - Full Semester</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>November 15</td>
<td>Last day to withdraw from college - Full Semester</td>
</tr>
<tr>
<td>November 21</td>
<td>Last day to drop classes with a &quot;W&quot; - 14 Week classes</td>
</tr>
<tr>
<td>November 21</td>
<td>Thanksgiving recess begins 10:45 p.m.</td>
</tr>
<tr>
<td>November 26</td>
<td>Classes resume</td>
</tr>
<tr>
<td>December 3</td>
<td>Last day to drop classes with a &quot;W&quot; - 10 Week classes</td>
</tr>
<tr>
<td>December 6</td>
<td>Last day to drop classes with a &quot;W&quot; - Late Start 8 Week classes</td>
</tr>
<tr>
<td>December 13</td>
<td>Classes end at 10:45 p.m.</td>
</tr>
<tr>
<td>December 14-19</td>
<td>Final exams (day classes)</td>
</tr>
<tr>
<td>December 14-20</td>
<td>Final exams (evening classes)</td>
</tr>
<tr>
<td>December 20</td>
<td>Semester ends - Full Semester, 14 Week, 10 Week and Late Start 8 Week classes</td>
</tr>
</tbody>
</table>

**Winterim 2019**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 21</td>
<td>Winterim 4 Week classes begin</td>
</tr>
<tr>
<td>December 24</td>
<td>Last day to drop classes without academic grade - 4 Week classes</td>
</tr>
<tr>
<td>December 25-January 1</td>
<td>Winter Break - College Closed</td>
</tr>
<tr>
<td>January 7</td>
<td>Winterim 2 Week classes begin</td>
</tr>
<tr>
<td>January 9</td>
<td>Last day to drop classes without academic grade - 2 Week classes</td>
</tr>
<tr>
<td>January 10</td>
<td>Last day to drop classes with a &quot;W&quot; - 4 Week classes</td>
</tr>
<tr>
<td>January 10</td>
<td>Last day to withdraw from college - 4 Week classes</td>
</tr>
<tr>
<td>January 15</td>
<td>Last day to drop classes with a &quot;W&quot; - 2 Week classes</td>
</tr>
<tr>
<td>January 15</td>
<td>Last day to withdraw from college - 2 Week classes</td>
</tr>
<tr>
<td>January 17</td>
<td>Semester ends</td>
</tr>
</tbody>
</table>

**Spring 2019**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 18</td>
<td>Classes begin - Full Semester, Early Start 2 Week, 5 Week and Early Finish 8 Week classes</td>
</tr>
<tr>
<td>January 21</td>
<td>Martin Luther King Day - College Closed</td>
</tr>
<tr>
<td>January 23</td>
<td>Last day to drop classes without academic grade - Early Start 2 Week classes</td>
</tr>
<tr>
<td>January 25</td>
<td>Last day to drop classes without academic grade - 5 Week and Early Finish 8 Week classes</td>
</tr>
<tr>
<td>January 30</td>
<td>Last day to drop classes with a &quot;W&quot; - Early Start 2 Week classes</td>
</tr>
<tr>
<td>January 31</td>
<td>Last day to drop classes without academic grade - Full Semester</td>
</tr>
<tr>
<td>January 31</td>
<td>Early Start 2 Week classes end</td>
</tr>
<tr>
<td>February 1</td>
<td>Mid Start 2 Week and 14 Week classes begin</td>
</tr>
<tr>
<td>February 5</td>
<td>Last day to drop classes without academic grade - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>February 12</td>
<td>Last day to drop classes with a &quot;W&quot; - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>February 13</td>
<td>Last day to drop classes with a &quot;W&quot; - 5 Week classes</td>
</tr>
<tr>
<td>February 14</td>
<td>Mid Start 2 Week classes end</td>
</tr>
<tr>
<td>February 14</td>
<td>Last day to drop classes without academic grade - 14 Week classes</td>
</tr>
<tr>
<td>February 21</td>
<td>5 Week classes end</td>
</tr>
<tr>
<td>February 22</td>
<td>Late Start 2 Week and 10 Week classes begin</td>
</tr>
<tr>
<td>February 26</td>
<td>Last day to drop classes without academic grade - Late Start 2 Week classes</td>
</tr>
<tr>
<td>February 28</td>
<td>Last day to drop classes with a &quot;W&quot; - Early Finish 8 Week classes</td>
</tr>
<tr>
<td>March 5</td>
<td>Last day to drop classes with a &quot;W&quot; - Late Start 2 Week classes</td>
</tr>
<tr>
<td>March 7</td>
<td>Last Start 2 Week classes end</td>
</tr>
<tr>
<td>March 7</td>
<td>Last day to drop classes without academic grade - 10 Week classes</td>
</tr>
<tr>
<td>March 11-16</td>
<td>Spring recess</td>
</tr>
<tr>
<td>March 18</td>
<td>Classes resume</td>
</tr>
<tr>
<td>March 21</td>
<td>Early Finish 8 Week classes end</td>
</tr>
<tr>
<td>March 22</td>
<td>Late Start 8 Week classes begin</td>
</tr>
<tr>
<td>March 28</td>
<td>Last day to drop classes without academic grade - Late Start 8 Week classes</td>
</tr>
<tr>
<td>April 18</td>
<td>Last day to drop classes with a &quot;W&quot; - Full Semester</td>
</tr>
<tr>
<td>April 18</td>
<td>Last day to withdraw from college - Full Semester</td>
</tr>
<tr>
<td>April 19</td>
<td>Good Friday - College Closed</td>
</tr>
<tr>
<td>April 22</td>
<td>Last day to drop classes with a &quot;W&quot; - 14 Week classes</td>
</tr>
<tr>
<td>April 29</td>
<td>Last day to drop classes with a &quot;W&quot; - 10 Week classes</td>
</tr>
<tr>
<td>May 2</td>
<td>Last day to drop classes with a &quot;W&quot; - Late Start 8 Week classes</td>
</tr>
<tr>
<td>May 9</td>
<td>All classes end at 10:45 p.m.</td>
</tr>
<tr>
<td>May 10-15</td>
<td>Final exams (day classes)</td>
</tr>
<tr>
<td>May 10-16</td>
<td>Final exams (evening classes)</td>
</tr>
<tr>
<td>May 16</td>
<td>Semester ends - Full Semester, 14 Week, 10 Week and Late Start 8 Week classes</td>
</tr>
<tr>
<td>May 24</td>
<td>Commencement</td>
</tr>
</tbody>
</table>
## Summer 2019

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 20</td>
<td>Summer Early 5 Week classes begin</td>
</tr>
<tr>
<td>May 24</td>
<td>Last day to drop classes without academic grade - Summer Early 5 Week</td>
</tr>
<tr>
<td>May 27</td>
<td>Memorial Day – College Closed</td>
</tr>
<tr>
<td>June 13</td>
<td>Last day to drop classes with a &quot;W&quot; - Summer Early 5 Week</td>
</tr>
<tr>
<td>June 13</td>
<td>Last day to withdraw from college - Summer Early 5 Week</td>
</tr>
<tr>
<td>June 22</td>
<td>Summer Early 5 Week classes end</td>
</tr>
<tr>
<td>June 24</td>
<td>Summer Late 5 Week classes begin</td>
</tr>
<tr>
<td>June 25</td>
<td>Summer 8 Week classes begin</td>
</tr>
<tr>
<td>June 28</td>
<td>Last day to drop classes without academic grade - Summer Late 5 Week</td>
</tr>
<tr>
<td>July 1</td>
<td>Last day to drop classes without academic grade - Summer 8 Week</td>
</tr>
<tr>
<td>July 4</td>
<td>Independence Day - College Closed</td>
</tr>
<tr>
<td>July 18</td>
<td>Last day to drop classes with a &quot;W&quot; - Summer Late 5 Week</td>
</tr>
<tr>
<td>July 18</td>
<td>Last day to withdraw from college - Summer Late 5 Week</td>
</tr>
<tr>
<td>July 27</td>
<td>Summer Late 5 Week classes end</td>
</tr>
<tr>
<td>July 29</td>
<td>Summer 3 Week classes begin</td>
</tr>
<tr>
<td>July 31</td>
<td>Last day to drop classes without academic grade - Summer 3 Week</td>
</tr>
<tr>
<td>August 1</td>
<td>Last day to drop classes with a &quot;W&quot; - Summer 8 Week</td>
</tr>
<tr>
<td>August 1</td>
<td>Last day to withdraw from college - Summer 8 Week</td>
</tr>
<tr>
<td>August 12</td>
<td>Last day to drop classes with a &quot;W&quot; - Summer 3 Week</td>
</tr>
<tr>
<td>August 12</td>
<td>Last day to withdraw from college - Summer 3 Week</td>
</tr>
<tr>
<td>August 17</td>
<td>Summer 3 Week classes end</td>
</tr>
<tr>
<td>August 19</td>
<td>Summer 8 Week classes end</td>
</tr>
</tbody>
</table>

### Academic Progress

#### Academic Bankruptcy

Students who attended County College of Morris in the past with poor academic records and who wish to return to the college without being penalized for a long-standing poor record may declare academic bankruptcy for all courses taken during their initial attendance at the college.

Students may declare academic bankruptcy if there is a **five-year interim** between the time they took their last course and the time they re-enroll at the college.

Once the Academic Bankruptcy Form ([http://www.ccm.edu/Media/Website%20Resources/pdf/admissions/recordsandreg/Academic%20Bankruptcy%20Form.pdf](http://www.ccm.edu/Media/Website%20Resources/pdf/admissions/recordsandreg/Academic%20Bankruptcy%20Form.pdf)) is submitted to the Office of Records and Registration and the student is approved, the student’s previous record is retained on the transcript with “Academic Bankruptcy” indicated. This statement will separate the past from the current course work. The academic bankruptcy policy is printed on the back of the student’s transcript.

When students declare academic bankruptcy, all courses taken during their first affiliation with the college will be included.

Selecting only certain courses is not permitted. Also, there is no minimum number of credits required before a student is eligible to declare academic bankruptcy. Students will have one opportunity to take advantage of this policy.

Students interested in further information should contact the Office of Records and Registration.

#### Academic Conduct

In order to maintain academic integrity at County College of Morris, the college community will not tolerate any form of academic dishonesty. Examples of unacceptable forms of dishonesty include cheating, copying, fabrication, plagiarism, unauthorized collaboration, submitting someone else’s work as one’s own; dishonesty through the use of technology such as sharing flash drives, files or programs; access to, modification of or transfer of electronic data, system software or computing facilities. The intent of this policy is to promote academic integrity and to arrest all forms of academic dishonesty.

When incidents of academic dishonesty occur and the faculty member chooses to submit a formal complaint of the incident to the Office of Student Development and Enrollment Management, the vice president will refer the complaint to the Academic Integrity Review Board, which is composed of faculty, academic administrators and the Vice President of Student Development and Enrollment Management. The Academic Integrity Review Board will review the circumstances surrounding the incident and make a recommendation of appropriate disciplinary action. Penalties imposed on a student who violates this policy may vary from failing the unit of work to expulsion from the college.

#### Academic Probation and Dismissal Policy

A student will be placed on academic probation on the basis of an unsatisfactory Cumulative Point Average (CPA).

Four checkpoints are established at 12, 24, 38 and 48 non-credit and credit hours.

A calculation of the CPA is made in a semester when the noncredit and credit hours attempted are equal to or exceed the checkpoint value. No CPA checks are made until the “noncredit/credit hours attempted” check-point is reached. Once a student has entered a checkpoint, CPA checks are made each semester to determine the
student’s academic standing. If the CPA falls below the probation level, the student will be placed on probation.

### Checkpoint Criteria

<table>
<thead>
<tr>
<th>Non-credit/Credit Hours Attempted</th>
<th>Probation Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-23</td>
<td>Below 1.4 CPA</td>
</tr>
<tr>
<td>24-37</td>
<td>Below 1.6 CPA</td>
</tr>
<tr>
<td>38-47</td>
<td>Below 1.8 CPA</td>
</tr>
<tr>
<td>48 and above</td>
<td>Below 2.0 CPA</td>
</tr>
</tbody>
</table>

A student on probation who achieves a 2.0 semester grade point average for every semester through the following checkpoint will be permitted to continue through to the next checkpoint in an attempt to bring the CPA up to acceptable minimum standards.

If a student on probation is unable to achieve a 2.0 semester grade point average at the conclusion of the probationary semester (Summer and Winterim sessions included), he or she will be dismissed and will not be eligible to take any courses for one semester following the dismissal (Summer and Winterim sessions not included). Such a dismissal may be appealed to the Academic Review Committee.

If the Academic Review Committee permits the student to return to the college after a dismissal, he or she will return on a probationary status and if dismissed a second time will not be eligible to take any courses for one year.

After one semester on dismissal, a student may apply to re-enroll at the college. The student will return on a probationary status and if dismissed a second time will not be eligible to take any courses for one year.

### Academic Review Committee

The Academic Review Committee is composed of the Vice President and Dean of Student Development and Enrollment Management, two counselors, one faculty member from each of the three academic divisions, the Director of the Educational Opportunity Fund Program and the Director of Accessibility Services. The Academic Review Committee has jurisdiction to:

(a) consider appeals by students who have been academically dismissed, and (b) accept applications to re-enroll following academic dismissal.

The Vice President of Student Development and Enrollment Management shall inform students in writing of their dismissal under this policy and of the right to appeal such dismissal. Students seeking to appeal academic dismissal must submit, within a limited time period, a letter of appeal to the Academic Review Committee, courtesy of the Office of Student Development and Enrollment Management. Included with this letter should be supporting documentation that offers extenuating circumstances for the student’s past academic performance. The committee will review this letter and, at its discretion, interview the student before making a decision.

The Academic Review Committee shall make a determination regarding the appeal and notify the student in writing of its decision prior to the first day of classes of the semester commencing after the filing of the appeal. The decision of the Academic Review Committee shall be the final decision of the college.

### Change of Major and Dropping Grades

Students who wish to transfer from one major to another must submit a Change of Major form (http://www.ccm.edu/admissions/recordsRegistration/formsandadministrativeservices.aspx) to the Office of Records and Registration. Before a student may register officially in the new major, the change of major must be signed by an advisor in the new major.

Students who change majors and achieve a 2.0 grade point average for the first 12 credits in the new major may apply to drop from their cumulative grade point average all D and F calculations for courses previously completed which were particular to the former major and do not pertain to their new major. Students will have one opportunity to take advantage of this policy to drop grades. If a student decides to change back to their original major, the grades which were removed from the cumulative grade point average will be reinstated. A Drop Grades Due to Change of Major form (http://www.ccm.edu/admissions/recordsRegistration/formsandadministrativeservices.aspx) must be submitted to the Records and Registration Office for approval and processing.

### Course Information

- Course Options (p. 9)
- Class Attendance (p. 10)
- Out-of-Class Time Requirements for CCM Courses (p. 10)
- Auditing (p. 10)
- Dropping and Adding Courses (p. 10)
- Repeating Courses (p. 10)
- Withdrawing from Courses (p. 11)

### Course Options

County College of Morris (CCM) offers students a variety of ways to take a course. While the majority of classes are taught as traditional in-class instruction within a semester with various term lengths, many others are offered in alternative formats as listed below:

#### Hybrid Courses

In a hybrid course, instruction is provided both in-class and online. The online portion reduces the amount of in-class time that is traditionally required. Hybrid courses are generally taught in any mini terms within a semester. Be sure to consult the course schedule for the start and end dates of a hybrid course.

#### Mini Terms

Mini term courses are classes that start at different times during the semester and run for varying lengths, such as 14, 10, 8, 5, or 2 weeks, making it possible for students to earn more credits during a semester.

#### Online Courses

In an online course, all instruction traditionally provided in class is replaced with instruction online. However, an online course may still
require an in-person student orientation, test or assessment take place on campus.

Class Attendance

Students are expected to attend all classes and laboratories. Absence does not excuse a student from the responsibility for class work or assignments that are missed. Repeat absences or lateness that affects student performance will be reflected in the final grade and could lead to a failing grade for the course. Students should consult individual course syllabi for more information regarding course attendance policies.

Attendance During Inclement Weather

Weather conditions rarely are severe enough to interfere with the college’s operation. However, when the weather may impact on the personal safety of students and employees, the college may delay or cancel classes.

Delayed openings and cancellations are announced on the CCM (http://www.ccm.edu) website and through the college’s emergency notification system, Titan Alert, which is capable of sending voice mail, email and text messages based on individual preferences. You also may call the emergency closing number 973-328-5580.

Out-of-Class Time Requirements for CCM Courses

County College of Morris and its faculty expect students to spend a sufficient amount of time devoted to academic work, to study and complete the necessary coursework that is assigned within a class including face-to-face, online and hybrid formats. The table below provides general guidelines that students can use when planning schedules. Guidelines are calculated using a formula that suggests a minimum of 45 hours per each credit of in-class and out-of-class academic work in a 16 week semester.

<table>
<thead>
<tr>
<th>Term Duration</th>
<th>Minimum Expected Total Time per Week per Credit (Lecture and Laboratory)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 Week</td>
<td>3 hours</td>
</tr>
<tr>
<td>14 Week</td>
<td>2.9 hours</td>
</tr>
<tr>
<td>12 Week</td>
<td>2.5 hours</td>
</tr>
<tr>
<td>10 Week</td>
<td>4.5 hours</td>
</tr>
<tr>
<td>8 Week</td>
<td>6 hours</td>
</tr>
<tr>
<td>5 Week</td>
<td>9 hours</td>
</tr>
<tr>
<td>4 Week</td>
<td>11.25 hours</td>
</tr>
<tr>
<td>2 Week</td>
<td>22.5 hours</td>
</tr>
</tbody>
</table>

Examples

If you are enrolled in ENG-111 (3 credit course – Lecture) during the 8 Week semester, you are expected to spend at least 18 hours per week to complete necessary coursework. This includes time spent in class as well as “out of class time.”

If you are enrolled in BIO-121 (4 credit course; Lecture 3 credits, Lab 1 credit) during the 16 Week semester, you are expected to spend at least 12 hours per week to complete necessary coursework. This includes time spent in class as well as “out of class time.”

Auditing

A student who wishes to attend a class but does not want to receive credit or a grade may register for the class and request permission to audit it from the Academic Department Chair of the course. Please note that not all courses may be eligible to audit. All tuition and applicable fees are charged for audited courses. Students must obtain permission to audit a class by the end of the first week of classes.

Students may not change from credit to audit or from audit to credit after the end of the first week of classes.

Request to Audit Forms are available online and at the Office of Records and Registration.

Dropping and Adding Courses

Students who wish to change their schedules and add courses can do so online prior to the first day of the term. Once the term has begun a class can only be added by submitting a Drop/Add form to the Office of Records and Registration. Please note if a class has already met one time, students will not be permitted to enroll in it. Students may not enroll in an online/hybrid class after the term has begun. All registrations in an online/hybrid class must be done prior to the first day of the term. Dropping classes may be done online up until the last day of a refund for any given mini term. Students who fail to fill out the appropriate form and merely stop attending classes will receive an F (failing) grade.

Courses officially dropped by the last day of the refund period in any mini term will generate a prorated tuition refund only and no inclusion on the student’s transcript.

The Academic Calendar (http://www.ccm.edu/search2.aspx?cx=000665808946258148870%3Aoppjdkt3o&cof=FORID %3A11&q=academic+calendar&oq=10&y=12) should be reviewed carefully in terms of when the last date to drop classes is in any mini term.

Repeating Courses

Students may repeat any course to increase their knowledge level. This choice is left to the discretion of the student except in cases when the student has received an F and is required to repeat the course for their particular major.

When repeating a course, the original grade and the repeat grade will appear on the student’s transcript. However, the student’s cumulative grade point average will be computed based on the repeat course grade. Students should be aware of the possible consequences of receiving a grade which is lower than their original grade. For example, if a D grade is repeated and an F is earned on the second attempt, the F will replace the D. Under no circumstances will a student receive credit more than once for any particular course.

Students who must take a course for the third time will have their cumulative grade point average computed based on the second and third repeat course grades. The second and third grades are averaged together in the GPA. If a student who repeats a course receives a W, the original grade will prevail. A student may register for the same course three times (excluding formal withdrawals or where precluded by departmental regulations). However, a student will be blocked from registering for the same course on the fourth and subsequent attempts and will not be permitted to register in
that course without permission from the appropriate academic
department chairperson and/or division dean.

**Withdrawal from Courses**

To withdraw officially from a course, students must complete a Withdrawal Form available at the Office of Records and Registration or by visiting the Records and Registration web page. Instructions on how to withdraw electronically via your CCM email account are available on the Records and Registration web page. Merely notifying the instructor of your intent to withdraw does not constitute an official withdrawal. Once the withdrawal request is received, the Office of Records and Registration will process your request and a W (Withdrawn) designation will be posted on your transcript. In some cases, the instructor may wish to speak with the student prior to withdrawing.

Students who officially withdraw from a course after the refund period in any mini term and before 75 percent of the course is completed will receive a W (Withdrawn) designation on their transcript and will incur a $10.00 fee for each withdrawn course. Students who do not complete the course and who do not complete the withdrawal process may receive an F (failing) grade unless there are extenuating circumstances. Withdrawing from a course must be processed in the Records and Registration Office. Withdrawal Forms and the procedure to withdraw can be found online on the Records and Registration web page. If extenuating circumstances prevail and it is past the withdrawal deadline, the student must contact the Office of Counseling and Student Success to be considered for the late withdrawal process.

The Academic Calendar should be reviewed carefully in terms of when the last date to withdraw is in any mini term.

**Note to all financial aid recipients:** Please contact the Financial Aid Office before withdrawing from classes. Withdrawing may affect the amount of aid you were awarded or the amount of aid you can expect to receive.

**Dean’s Honor List**

Full-time students are eligible for the Dean’s Honor List on a semester basis if they:

- Carry a minimum of 12 credits during the semester.
- Earn a semester grade point average of 3.0 or better.
- Have no repeat course for that semester.
- Have no Fs for that semester.

Part-time students are eligible for the Dean’s Honor List on an annual basis if they:

- Accumulate 12 or more credits during the year, which includes the Summer, Fall and Spring semesters.
- Earn a grade point average of 3.0 or better for the year.
- Have no repeat courses for the year.
- Have no Fs for the year.

Full and part-time students enrolled in developmental/remedial courses during the award period must be enrolled in a minimum of 12 college credits to be eligible for the Dean’s Honor List.

Students may inquire about their selection to the Dean’s Honor List by calling the Office of Academic Affairs at (973) 328-5090.

**Grading System**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Interpretation</th>
<th>Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>A-</td>
<td></td>
<td>3.67</td>
</tr>
<tr>
<td>B+</td>
<td></td>
<td>3.33</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>B-</td>
<td></td>
<td>2.67</td>
</tr>
<tr>
<td>C+</td>
<td></td>
<td>2.33</td>
</tr>
<tr>
<td>C</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>R</td>
<td>Registered to Audit</td>
<td>None</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
<td>None</td>
</tr>
<tr>
<td>P</td>
<td>Pass</td>
<td>None</td>
</tr>
<tr>
<td>SP</td>
<td>Satisfactory Progress</td>
<td>None</td>
</tr>
<tr>
<td>W</td>
<td>Withdrew</td>
<td>None</td>
</tr>
<tr>
<td>EX</td>
<td>Credit by Examination</td>
<td>None</td>
</tr>
<tr>
<td>TRA, TRB, TRC, TRD</td>
<td>Transfer Credit</td>
<td>None</td>
</tr>
</tbody>
</table>

1 Grades used in non-credit courses
2 Without academic penalty

**Grade Appeal Policy**

Grades are determined solely by individual faculty members, and may be changed by the faculty member only. Students who wish to contest a grade given by a faculty member must attempt to resolve the matter with the faculty member concerned. To pursue this appeal, the student must be prepared with evidence as to why the grade posted by the faculty member is in error. If the matter cannot be resolved with the individual faculty member, the student may pursue the appeal by bringing it to the attention of the appropriate department chair, who will confer with the faculty member and review all the evidence pertaining to the appeal. Grades may not be changed after graduation except when an error in the recording of a grade has occurred.

**Grades and Averages**

A student’s Semester Grade Point Average is a measure of his or her work for any one semester. The cumulative Grade Point Average (GPA) represents all work completed at the college.
### How to calculate your Grade Point Average (GPA)

As indicated before, letter grades are assigned a point value:

- A = 4 points
- A- = 3.67 points
- B+ = 3.33 points
- B = 3 points
- B- = 2.67 points
- C+ = 2.33 points
- C = 2 points
- D = 1 point
- F = 0 points

Your grade point average is calculated by multiplying the point value of the grade you receive in each course by the number of credits offered for the course. The resulting number is called “total quality points.”

Next, add up the total quality points and divide by the total number of attempted credits.

**Example:** A student received the following grades over the course of two semesters at County College of Morris:

<table>
<thead>
<tr>
<th>Semester I</th>
<th>Grade</th>
<th>Point Value</th>
<th>Credits</th>
<th>Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Composition I</td>
<td>C+</td>
<td>2.33</td>
<td>3</td>
<td>6.99</td>
</tr>
<tr>
<td>Phlebotomy</td>
<td>B-</td>
<td>2.67</td>
<td>4</td>
<td>10.68</td>
</tr>
<tr>
<td>The Middle Ages</td>
<td>A</td>
<td>4</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Intro to Philosophy</td>
<td>B</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Lifetime Wellness</td>
<td>B</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>15</td>
<td>44.67</td>
</tr>
</tbody>
</table>

To calculate the grade point average, divide the total quality points (44.67) by the total credits (15). This student’s grade point average is 2.97 for Semester I.

In this student’s second semester, the student earned another 15 credits and 48 total quality points. The grade point average for Semester II is 3.2.

<table>
<thead>
<tr>
<th>Credits</th>
<th>Total Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester I</td>
<td>15</td>
</tr>
<tr>
<td>Semester II</td>
<td>15</td>
</tr>
<tr>
<td>Cumulative</td>
<td>30</td>
</tr>
</tbody>
</table>

To calculate this student’s cumulative grade point average, add the total number of credits attempted for both semesters and the total number of quality points earned for both semesters.

Then divide the cumulative quality points (92.67) by the cumulative credits (30). The result is a cumulative grade point average (GPA) of 3.08. A minimum GPA of 2.0 is required for graduation.

### Midterm Advisory Grades

Midterm warning notifications are sent to students when they are demonstrating unsatisfactory academic work and/or lack of attendance through the midpoint of the 16 week semester. An unsatisfactory U designation indicates that the student’s performance in the class is unsatisfactory, while the SW designation indicates that the student should withdraw from the course. Neither designation appears on the student’s transcript.

### Incomplete Grades

An Incomplete, I, is a temporary grade given to students who are unable to complete academic work from a given semester due to illness or other circumstances beyond their control.

Students should present their instructor with a written, valid reason for the missed work. Students are required to make arrangements with their instructors to complete the work within four weeks of the end of the semester (the date of the last scheduled final examination).

Students will receive a grade of A, A-, B+, B, B-, C, D or F when the work is completed. If the work is not completed by the end of the four-week period, students will receive an F.

### Graduation

County College of Morris (CCM) holds one commencement ceremony at the end of May, which the preceding August or January graduates may attend.

To be eligible for a degree or academic program certificate, students must:

- Earn a cumulative grade point average of 2.0 and complete the general and prescribed curriculum course work for their major.
- Complete at least 30 credits at CCM. Certificate students must complete at least 15 credits at CCM. (The length of time that courses would remain current and acceptable should be at the discretion of the respective department chairperson.)
- Complete at least one half of their major at CCM.
- Apply for graduation in the Office of Records and Registration (http://www.ccm.edu/admissions/recordsRegistration) by the posted deadlines. Graduation Applications (http://www.ccm.edu/ Media/Website%20Resources/pdf/admissions/recordsandreg/App%20for%20Grad.pdf) are available online or at the Office of Records and Registration.
- Pay a non-refundable graduation fee of $30 at the time the application is submitted. Fee is required regardless of attendance at the ceremony.
Graduation Application Deadlines

<table>
<thead>
<tr>
<th>Graduation Cycle</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>January Graduation</td>
<td>July 1</td>
</tr>
<tr>
<td>May Graduation</td>
<td>November 1</td>
</tr>
<tr>
<td>August Graduation</td>
<td>April 1</td>
</tr>
</tbody>
</table>

These early dates allow ample time for the Office of Records and Registration to notify candidates of any issues prior to the start of their final semester of attendance. Students who apply for graduation but fail to meet the requirements must re-apply for graduation when registering for the course(s) that will complete the requirements. The graduation fee is transferable. Matriculated students enrolling for courses at other colleges must obtain approval from CCM prior to their enrollment at those institutions. Approval forms may be obtained in the Office of Records and Registration or on the Records and Registration website (http://www.ccm.edu/admissions/recordsRegistration/formsandadministrativeservices.aspx).

Upon final audit of your record you will be notified via your CCM email account if you have not met the requirements for graduation. Keep in mind that all of your grades must be posted before the final audit of your record can occur. At any time you can check your online evaluation via Web Advisor (https://webadvisor.ccm.edu/WebAdvisor/WebAdvisor?TYPE=M&PID=CORE-WBMAIN&TOKENIDX=1189383015) to determine your eligibility.

Academic Distinctions at Graduation

Students with outstanding academic achievements throughout their County College of Morris career are awarded the following honors based on their cumulative grade point average:

- **Summa cum laude**: 3.85 - 4.00 GPA
- **Magna cum laude**: 3.65 - 3.84 GPA
- **Cum laude**: 3.45 - 3.64 GPA
- **Certificate with Merit**: 3.45 - 4.00 GPA

These honors will be noted on the academic transcript as well as a certificate of honor.

Official Withdrawal from the College

Students who wish to officially withdraw from the college must complete a withdrawal form (http://www.ccm.edu/mediawebsite%20Resources/pdf/admissions/recordsandreg/Withdrawal%20Form.pdf) in the Office of Records and Registration (http://www.ccm.edu/admissions/recordsRegistration). The withdrawal will be effective as of the date the student submits in writing the request to withdraw via form or email. If a student withdraws from college during the refund period, a refund of tuition only will be processed and no courses or grades will be included on the student’s transcript. If a student withdraws after the refund period and before 75 percent of the term ends, the student will receive withdrawal designations on their transcript.

After 75 percent of the semester is completed, students are committed to complete the courses and receive grades. A student who fails to officially withdraw will receive a grade of F. The W designation will not be issued after 75 percent of the course is completed unless extenuating circumstances prevail and the late withdrawal is authorized by the Vice President of Academic Affairs. The student must contact the Office of Counseling and Student Success to document the circumstances and begin the process for filing a late withdrawal request.

Overloads

Students are permitted to enroll in a maximum of nineteen (19) credits during the Fall and Spring semesters and up to eight (8) credits for Winterim and for each Summer session or a maximum of fifteen (15) credits for all Summer sessions. Any student who wishes to enroll in more credits than the maximum per term must obtain permission from the Office of Student Development and Enrollment Management. The minimum requirement for consideration is a 2.50 cumulative grade point average established at County College of Morris.

Prerequisites and Corequisites

**Prerequisites**

A prerequisite course is a preliminary requirement that must be fulfilled before a student may attend a course with listed prerequisites. Prerequisites must be completed satisfactorily prior to taking the course that requires it. Students who have not satisfactorily completed a prerequisite will be denied admission to the course or courses and/or may be administratively dropped from that course.

Students who believe they have had equivalent course work or experience may request that the prerequisite be waived by the department chair prior to registration. Proof and/or documentation of fulfilling a prerequisite must be presented to the department chair to obtain a waiver for this requirement.

**Corequisites**

A corequisite course is one that must be taken either before or at the same time as the course that requires it. If a corequisite is indicated, students should enroll for both courses simultaneously.

Semester Credit Hours

County College of Morris follows the Middle States Commission on Higher Education’s Licensure Rules to define a credit hour. Semester credit hour means 50 minutes of face-to-face class activity each week for 15 weeks (or the equivalent attained by scheduling more minutes of face-to-face class activity per week for fewer weeks in the semester) plus an exam week in one semester complemented by at least 100 minutes each week of laboratory or outside assignments (or the equivalent thereof for semesters of different length).

Academic Support Services

County College of Morris is committed to providing comprehensive services and activities that complement the learning process and support students in their quest to realize their educational and
professional goals. In the navigation area, you will find links to a wealth of resources to make the most of your college experience.

**Academic Advisement**

All full and part-time matriculating students are assigned to academic advisors within the department of the major they are pursuing. Full-time faculty members are the primary providers of academic advisement at County College of Morris (CCM). Non-matriculating students are assigned to work with counselors in the Office of Counseling and Student Success for academic advisement. All academic advisors are available throughout the semester to engage in conversations that will assist students in meeting their educational goals and objectives. Advisors can assist students with a variety of activities such as selecting courses, reviewing curriculum requirements, changing majors, discussing plans to transfer and/or setting career goals.

Each week during the semester, faculty advisors hold regularly scheduled office hours to meet with students. In addition, special advisement sessions are held each semester the week before registration begins, during “Academic Advisement Week.” Students are encouraged to meet with their faculty advisors at least once prior to the beginning of each semester to plan their curriculum requirements so they may graduate from the college in a timely manner.

Questions regarding advisor/advisee assignments should be directed to the Coordinator of Academic Advisement in the Student Community Center, Room 118, 973-328-5303. The advisement link on the CCM website, www.ccm.edu/studentLife/CampusServices/advisement/ (http://www.ccm.edu/studentLife/CampusServices/advisement/), also is an excellent source of information for prospective and current students.

**Accessibility Services**

The Accessibility Services office works to ensure that any students with documented disabilities receive reasonable accommodations in accordance with the policies underlying Section 504 of the Rehabilitation Act of 1973 and the American with Disabilities Act (ADA) of 1990 and ADA Amended Acts (ADAAA) of 2008. Students receive services and accommodations while completing regular course offerings, and all students are held to the same academic standards of the college.

County College of Morris recognizes that students with documented physical, psychological, medical, sensory, learning disabilities may require accommodations to meet their learning potential. The Accessibility Services office serves to both determine and document, during an interactive collaborative meeting with a student, which reasonable accommodations may be appropriate for use during his or her courses. Accessibility Services is designed to offer accommodations that provide equal access to college classes and services. Reasonable accommodations may include any or all of the following: extended time for in-class exams and quizzes, alternative to print materials, adaptive technology, sign language interpreters or other accommodations as needed. To qualify for accommodations, a student must submit appropriate professional documentation that shows that he or she has an impairment that limits a major life activity.

Additional services, not covered by ADA, but offered through the office include individualized strategies tutoring, a time-limited mentoring program designed to help students strengthen study and organizational skills. This service is offered upon request only on a first-come, first-served basis. Registration assistance is done in conjunction with the Office of Records and Registration on a case-by-case basis and students are encouraged to take advantage of courses offered by the college to strengthen college success skills and tools.

At the college level, students are responsible for self-identifying and making arrangements to use their accommodations with the assistance of office staff. Accessibility Services also provides accommodated testing facilities for students.

**Career Services and Cooperative Education**

Through a comprehensive series of programs and services, the Office of Career Services and Cooperative Education operates as a multifunctional office serving students and alumni as they make career decisions, develop job search strategies, pursue experiential education opportunities and secure employment. For more information, visit the Career Services (http://www.ccm.edu/studentLife/CareerServices) website.

**Job Listings**

Listings of both full-time and part-time off-campus employment opportunities are posted on JobConnect (http://www.ccm.edu/studentLife/CareerServices/ServicesforStudents/JobConnect.aspx).

**Job Preparedness**

Presentations and programs cover such topics as resume preparation, interview techniques, career forecasts and job search strategies.

**Campus Student Employment Program**

Eligible students are referred to departments on campus for employment during the summer and academic year. Off-campus community placements are also available.

**Cooperative Education/Internship Programs**

Cooperative education and internships are available in many academic programs at County College of Morris and enable students to integrate classroom instruction with practical experience. For more information, visit the Cooperative Education/Internships (http://www.ccm.edu.StudentLife/CareerServices/ServicesforStudents/CooperativeEducation.aspx) website.

**Individual Counseling**

Students and alumni may request one-on-one counseling with regard to employment concerns and job search strategies.
Internet Resource Center

Students and alumni are afforded computer access to web-based job search tools and resources including, but not limited to, Optimal Resume, Optimal Interview, FOCUS, and JobConnect.

Counseling and Student Success

The Office of Counseling and Student Success contributes to student learning in the areas of personal growth, career awareness, life planning, educational counseling, transfer counseling and programs for special populations. Through counseling, students also learn about themselves and develop personally as part of a complete education. Services available to students are:

- Academic Success Program
- Advising for Student-Athletes
- Career Exploration and Counseling - FOCUS
- Educational Counseling
- Guidance for students on Academic Probation and/or Dismissed
- NJ STARS Program
- Personal Counseling
- Project Success Program
- Transfer Services
- Veteran’s Services
- Workshops

International Students

The college provides personal, academic, career and transfer counseling for international students through the Office of Counseling and Student Success. To help students adjust to the American academic and social environment, additional support is given through a strong, active International Students’ Club. The club schedules cultural activities during the year to enhance the student’s American educational experience.

Educational Opportunity Fund

The Educational Opportunity Fund (EOF) is a state-sponsored program for students who have the will and potential to do well in college, but require additional academic and financial assistance. Since 1969, EOF at County College of Morris has been delivering top-notch academic enrichment services, such as a summer orientation, workshops, seminars, one-on-one counseling, tutoring assistance, pre-advisement and transfer services. In addition, the program provides online academic support through Blackboard, the college’s educational learning platform for online and hybrid courses. Along with academic support, financial assistance is also given as part of the student’s financial aid package in the form of a New Jersey state grant, once a student has been selected to participate in the program. Ultimately, EOF provides students with the necessary tools to reach their goal of college success and graduation.

To be considered, all students must complete the EOF application, be accepted to CCM full-time and have taken the placement exam. Furthermore, students must complete the Free Application for Federal Student Aid (FAFSA) found on the FAFSA (http://fafsa.ed.gov) website. For returning CCM students looking to apply, there is a 24 earned credit limit. Additional financial documentation is also required and an interview with an EOF staff member must be scheduled to complete the application process. For additional information and to request an application, students can contact the EOF Office by phone at 973-328-5270, via email at eof@ccm.edu or download the application and all requirements at the EOF (http://www.ccm.edu/studentlife/CampusServices/eof) website. The EOF office is located in Cohen Hall, Room 211. You can also check out the EOF program on Facebook (http://www.facebook.com/eofccm).

Health Services

The Office of Health Services, located in Cohen Hall 266, is open throughout the year. A registered nurse is available to provide health care, discuss personal health problems and make appropriate referrals. Any questions regarding health or safety may be directed to the Office of Health Services. Students are encouraged to participate in all special health promotion programs and activities offered throughout the year. Telephone: 973-328-5160; Fax: 973-328-5163

Immunizations

New Jersey law requires that all full-time students present a valid record of immunization against measles, mumps, rubella and Hepatitis B as a condition of enrollment. The state requires two doses of live measles containing vaccine administered after one year of age, after 1968, and 30 days apart. Additionally, the documentation must include verification of a three-dose Hepatitis B vaccine or a 2-dose recombinant IP given between 11 and 15 years of ages.

Individuals who are not in the Nursing, Radiography or Allied Health programs are exempt from these requirements only if they are 30 years of age or older, are taking less than 12 credits, or have a medical reason or a religious objection to immunization. Students should contact the Office of Health Services for more details about the immunization requirements.

Health Records: All health records are confidential and kept on file in the Office of Health Services. Copies of your Immunization Records may be obtained for a fee. Visit the Health Services (http://www.ccm.edu/studentlife/CampusServices/healthservices) website (http://www.ccm.edu/studentlife/CampusServices/healthservices) for more information.

Physical Examinations

Prior to participation in an intercollegiate sport, students can receive a free physical examination by a physician designated by the college. Student-athletes who miss the scheduled physical will need to obtain a physical by their own physician prior to participating in any intercollegiate activity.

Students enrolled in the Nursing or Allied Health Professional programs are required to have a full health history including a physical examination.

It is recommended that students who have a chronic medical disorder contact Health Services for available accommodations.
Medical Reserved Parking can be obtained through Health Services with appropriate documentation.

Insurance
For information about obtaining affordable healthcare insurance visit the CCM Health Services (http://www.ccm.edu/studentLife/CampusServices/healthservices) website.

All Nursing and Allied Health students in the professional phase are required to have both accident and sickness health insurance with basic hospitalization coverage and must provide proof to the program chairperson at the start of each semester.

New Student Orientation
The college provides an orientation program for new students before the beginning of each semester. Incoming students have the opportunity to explore the campus, learn about various college services, meet with members of the campus community and get information on extracurricular and co-curricular activities and programs.

For additional information, visit CCM’s New Student Orientation (http://www.ccm.edu/studentLife/CLO/New%20Student%20Orientation/default.aspx/) website.

Student Development
The Division of Student Development and Enrollment Management is committed to providing comprehensive services and activities that complement the learning process and maximize the ability of each student to realize his or her educational and life goals. Students benefit more from their college experiences when their total level of campus engagement – academic, interpersonal and extracurricular – is mutually supporting and relevant to particular educational outcomes. Involvement in the academic and social life of the institution enhances student learning. Departments within the division offer integrated and complementary academic and social programs, and policies and practices that increase learning and support students’ educational goals. These services are staffed by professionals who help students make the most of their educational opportunities by:

- Providing the conditions and opportunities in which students might succeed, and determining and prescribing practices that lead to success;
- Providing sufficient opportunities for meaningful student participation in the life of the institution, such as leadership roles in academic and social organizations, recreation, campus jobs, off-campus work or citizenship;
- Providing a full range of student support services to permit students to benefit from college programs;
- Prescribing and providing programs that assure students’ competence in specified academic and skills areas;
- Interacting with, supporting and supplementing the learning process that occurs in the classroom;
- Appreciating the diverse population that constitutes the student body and promoting an awareness and an appreciation of that diversity;
- Fostering an environment in which students can acquire the knowledge and skills to carry them forward throughout life.

Testing Center
Testing services provided by the Testing Center include the Accuplacer basic skills placement testing in Mathematics, English, ESL and Technology Literacy Competency for newly admitted and newly matriculated students, and College Level Mathematics placement testing for students placing into more advanced mathematics credit courses.

CLEP (College Level Examination Program) is a credit-by-examination program. Students can demonstrate their proficiency in a variety of subjects. Information can be found on the College Board (http://www.collegeboard.com/clep) website and the Testing Center (http://www.ccm.edu/admissions/placementTesting/cal) website.

County College of Morris (CCM) departmental examinations are scheduled and administered through the center by appointment only.

Proctored exams for CCM online and hybrid courses are administered in the testing room. For instructions and times, visit the Testing Center (http://www.ccm.edu/admissions/placementTesting/cal) website.

The Testing Center provides proctoring services for other schools and organizations. Please view our NON-CCM Proctoring Services (http://www.ccm.edu/admissions/placementTesting/cal/nonccmproctoring.aspx) (for students from other schools) website for information.

The Testing Center is certified by and subscribes to the National College Testing Association (http://www.ncta-testing.org) (NCTA) Professional Standards and Guidelines and is an active participant of the Consortium of College Testing Centers Supporting Distance Education.

Transcripts
Request Policy and Procedures
Students who would like to request their County College of Morris (CCM) transcript can stop by the Office of Records and Registration to fill out and sign a Transcript Request Form or can visit our web page and complete an Online Transcript Request Form (http://www.ccm.edu/OfficeOfRecords/Website%20Resources/pdf/Transcripts/Transcript%20Request%20Form%20pdf). Transcript requests cannot be processed without confirmation that the Transcript Request Fee has been paid ($5.00 per transcript) and a signed written request from the student is submitted. Transcripts may not be picked up in person unless valid ID is presented. Typically, requests are processed within three business days for either unofficial or official transcripts. However, during peak office activities, such as the start of an academic term, during any registration activities or during graduation, more time may be necessary.

Official/Unofficial Transcripts
The official transcript is a copy of a student’s official academic record at CCM and is sent directly to the institution or agency
designated on the Transcript Request Form. The official transcript is printed on security paper and cannot be photo copied. Students may request to receive an official transcript directly; however, the transcript will be stamped “Official Transcript Issued To Student In Sealed Envelope.”

Unofficial transcripts are issued to the student and stamped “Unofficial Student Copy.” These may be used for a student’s personal record, interviews or in place of a grade report and will be printed on unofficial paper.

Any transcript (official or unofficial) may be picked up by somebody other than the student requesting the transcript, however this individual needs to present a valid ID and authorization signed by the student indicating they are permitted to pick up the transcript.

All financial obligations to the college must be met before a transcript will be released.

Transfer Services

Students who plan to continue their education beyond an associate’s degree are encouraged to use the resources available through Transfer Services located in the Student Community Center, room 118. The department of Transfer Services provides services that assist students in making a smooth transition to a four-year college or university. Information regarding admissions requirements, application deadline dates, credit evaluation procedures and appeals, the Comprehensive Statewide Transfer Agreement and articulation agreements are available. A complete listing of resources available to students can be accessed from the Transfer Services (http://www.ccm.edu/studentLife/CampusServices/TransferResources) website.

Additionally, students can obtain information about accessing NJ Transfer online. This electronic transfer information resource guides students through understanding how their County College of Morris credits will transfer to New Jersey colleges and universities. For more information, visit the NJ Transfer (http://www.njtransfer.org) website.

Tutoring Center: Math, Writing and Science

The Tutoring Center located in DeMare Hall, Room DH -156, includes:

• Math Center
• Writing Center (includes ESL Tutoring)
• Science Center
• Peer Tutoring

The Tutoring Center is the focal point for free assistance in understanding current course studies. The individual areas are staffed by faculty or a combination of faculty and student tutors. All student tutors have earned an A or B in the course they are tutoring and have been recommended for the position by two faculty members.

The Tutoring Center offers individual and group tutoring, along with the availability of computers, software and materials such as microscopes, bones and other necessary study tools. An online appointment system is available for your scheduling convenience at home or in the center. In some cases, the center is able to accommodate walk-ins.

Math Center

The Math Center, staffed by faculty and peer tutors, offers free tutorial assistance and workshops to enhance student learning in mathematics, physics and engineering. These services are offered through individual and group appointments or on a drop-in basis. They are not intended for last-minute cramming in preparation for examinations. Computer assisted software such as Derive5, Minitab and MATLAB are additional helpful resources.

Writing Center and ESL Tutoring

The Writing Center helps students improve their writing skills. Assistance is available through instruction by faculty tutors and computer software. All of the writing tutors are members of the Department of English. Tutors diagnose writing problems, provide instruction in theory and offer practice for writing improvement. In addition, tutoring for ESL writing courses is provided by ESL faculty.

Science Center

The Science Center offers tutorial assistance, group workshops and materials such as microscope slides, bones and other specimens, and computer software for study in biology and chemistry courses. Tutors are full-time biology and chemistry faculty and peer tutors who offer free assistance to students enrolled in science courses.

Peer Tutoring

Peer Tutoring is available for students who need additional help with their courses. Students who earn an A or a B in a course and have a GPA of 3.0 or higher are eligible to tutor. The center conducts training sessions for peer tutoring covering areas in history, sociology, psychology, economics and foreign languages.

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Dr. Judith F. Raulf
Dr. Terence West

Faculty Emeriti

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Frederic J. Bednarek
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Joan Cook
Frank X. Doto
Dr. Philip Edgecomb
Dr. Fred S. Einstein
Robert C. Gebhardt
Mary Ann Gray
Xavier F. Gonzalez
Dr. John Gorman
Dr. Beth Hess
Parthasarathy S. Iyengar
Sharon Kapica
Rita J. Licciardolo
Dr. Morris Lieff
Dr. Louise Mayo
Joan R. Monaghan
Bonnie A. Murphy
Louise Bernauer Olshan
Dr. Dominick Orefice
Sara Pfaffenroth
Dr. Carlo Prisco
Dr. Robert L. Ramsdale
Dr. Noel P. Robinson
Dr. Mary Alys Ruther
Margaret Shoenfelt Kirsch
Joanna Stoskus
Jan-Marie Traynor
Mary B. Wolf

County College of Morris
Administration

All college administrators also serve as members of the CCM Foundation (http://www.ccm.edu/foundation).

Dr. Anthony J. Iacono, President
Dr. Dwight L. Smith, Vice President of Academic Affairs
Karen VanDerhoof, Vice President of Business and Finance
Dr. Bette M. Simmons, Vice President of Student Development and Enrollment Management
Joseph T. Vitale, Executive Director for College Advancement and Planning and Foundation President
Thomas Burk, Director of Human Resources and Labor Relations

Campus Directory
General Information
973-328-5000

www.ccm.edu

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<th>Location</th>
<th>Telephone Number</th>
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<td>973-328-5168</td>
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<td>Admissions</td>
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<td>Department</td>
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<td>Health and Exercise Science Department</td>
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<td>Health Service</td>
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<td>Music, Dance and Performing Arts Department</td>
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Admissions
Welcome to County College of Morris (CCM)

At CCM, you’ll find:

• High-quality degree and certificate programs
• A faculty committed to teaching excellence and student success
• Convenient location in Randolph
• Traditional, online, hybrid and weekend courses to fit your schedule

• One of the highest transfer and graduation rates among New Jersey’s community colleges

To learn about our admissions process, please review the links in the navigation panel.

Documentation Needed for Admissions

Applicants are required to submit to the Admissions office a completed application form and a $30 application fee. The application for admission is available from the college’s website at www.ccm.edu (http://www.ccm.edu). All matriculated students must arrange to have high school and/or college authorities forward official transcripts to the Office of Admissions. The student must also provide:

1. Submission of a Valid Record of Immunization

New Jersey law requires all full-time students to present a valid record of immunization against measles, mumps and rubella as a condition of enrollment. The state requires two doses of live measles containing vaccine administered after one year of age, after 1968, and 30 days apart. Additionally, students must submit documentation of immunization of the three-dose Hepatitis B vaccine. Individuals who are not in the Nursing or Allied Health programs are exempt from these requirements only if they were born before 1957. Immunization documentation must be submitted to the Office of Health Services prior to the beginning of the student’s second semester of enrollment.

2. Submission of Medical Information in the Form Prescribed by the College

This information is required of students enrolled in certain academic programs or involved in intercollegiate athletics.

3. English Language Proficiency

All applicants whose first language is not English have the option to submit TOEFL, SAT or ACT scores or other proficiency evidence to support their admission applications to County College of Morris (CCM). However, upon arrival on campus, all students will be required to take an additional placement examination administered by CCM before registering for classes or other academic work.

• F-1 visa applicants and applicants applying from overseas – including Puerto Rico – must submit a TOEFL score of at least 400 (paper test), 97 (computer-based test) or 32 (Internet-based) by July 1 for the Fall Semester or November 1 for the Spring Semester.

• F-1 visa applicants submitting scores below the minimum will not be offered admission because we will be unable to guarantee a full-time schedule as is required of F-1 students.

• F-1 visa applicants will be required to write a LOEP essay to assist in ESL placement.

4. Proof of Resident Status

Students who are non-immigrants, visa holders, temporary residents, refugees or employment authorization card holders
College Placement Test

Who Must Take the Placement Test?

1. All students who apply for matriculation into a program of study leading to a degree or certain specified certificate.
2. All students who intend to register for an English or mathematics course, or for a course that requires a proficiency measured by the placement test.
3. All students transferring to County College of Morris (CCM) who are not exempt from placement testing as specified in “Exemptions from Placement Testing.”
4. Any applicant whose first language is not English and who is attempting to register for a credit course.
5. Any applicant who is exempt from the Mathematics section of the exam but who wishes to attempt to place into a higher level mathematics course, e.g., Pre-calculus, Calculus I, etc.
6. Any pre-college age student who enrolls at the college through the Challenger or Academy programs or any of the college’s pre-college age programs who intends to register for an English or mathematics course, or for a course that requires a proficiency measured by the placement test.

Exemptions from Placement Testing

The following students are exempt from the placement test(s) at CCM upon presentation of appropriate documentation to the Admissions Office. Test scores older than seven (7) years are not considered valid.

1. Students who have taken SATs and have earned scores of:
   a. Old SAT = 540 Critical Reading and 530 Math*
   b. New Version SAT (March 2017) = 590 Evidence-based Reading and Writing and 560 Math*

2. Students who have taken ACTs and have earned scores of 23 for English and 23 for Mathematics*

3. Students who have taken the PARCC Test and scored 4 or 5 on the Algebra II and 4 or 5 on the Grade 11 English Language Arts and Literacy exams*

4. Students who have earned college credit in appropriate English or mathematics courses from a regionally accredited college or university may be exempt from placement testing.

5. Students who have passed the appropriate remedial coursework at another college or university.

*Students who apply for STEM programs or who have taken high school Pre-Calculus or Calculus sit for CCM’s College Level Math (CLM) exam. The CLM exam will allow the student to test directly into college-level Pre-Calculus or Calculus without having college algebra and or college level pre-calculus courses.

Basic Skills Remediation Requirements

If the placement test results indicate that specific basic skills are lacking, the college reserves the right to require students to take non-credit remedial/developmental courses in writing, mathematical computation, basic and/or intermediate algebra.

Students whose test results indicate an inability to benefit from college level work will be offered counseling and additional testing to determine proper placement. Placement may include alternative
educational opportunities in lieu of admission to the college as a matriculated student.

Pre-college age students are not permitted to take any remedial/ developmental courses at CCM.

**Basic Musicianship Test**

All students who intend to register for performance courses in the Music and Music Technology programs are required to take the Basic Musicianship Test prior to registration for Music Theory.

**College Level Mathematics (CLM) Test**

Students who intend to register for courses in computer science, engineering, physics, mathematics, biology or chemistry may be required to take the College Level Mathematics (CLM) test prior to registration to determine placement in higher-level mathematics.

**Information (Computer) Literacy Competency Exam**

All students will be required to take the Information (Computer) Literacy Competency exam at the same time they take the placement test(s). Students who do not pass the exam must take a 1-3 credit designated course in technology recommended through their respective programs.

**Students with Disabilities**

Students who identify themselves as being disabled may request testing accommodations by submitting the appropriate documentation to the Disability Services Office.

**Advanced Placement Credit**

High school students who score at an acceptable level on the Advanced Placement Examination may earn course credit or advanced placement in County College of Morris courses. To receive advanced placement credit, students must present to the Admissions Office an official record of their Advanced Placement Examination scores of three, four or five from the College Board.

Information regarding what Advanced Placement Examination may earn course credit or advanced placement in County College of Morris courses. To receive advanced placement credit, students must present to the Admissions Office an official record of their Advanced Placement Examination scores of three, four or five from the College Board.

**Insurance Requirements**

**Health Insurance**

For information about obtaining affordable healthcare insurance, visit the Health Services (http://www.ccm.edu/studentLife/CampusServices/healthservices) website.

All Nursing and Allied Health students in the professional phase are required to obtain and maintain their own medical insurance.

All full-time or part-time students enrolled in the clinical component of the Nursing, Respiratory Therapy and Radiography programs are required to purchase and show proof of Professional Liability/ Malpractice coverage.

**International Students**

Non-immigrant visa holders may attend the college on a full or part- time basis depending on their visa classification. Students who wish to attend the college as an F-1 student are required to apply for full- time study in either the Fall or Spring semesters.

Applications must include the $30 application fee, Test of English as a Foreign Language (TOEFL) scores (if applying from their home country), the name and address of a New Jersey contact, and their original secondary school transcripts. If documents are not from an English-speaking country, transcripts must be translated to English and notarized by an official translating agency. Personal translations will not be accepted. Transfer credits earned in institutions of higher learning from foreign countries must be evaluated by a nationally accredited agency such as World Education Services.
Inc. or SpanTran: The Evaluation Company, for consideration of advance standing. For a complete listing of accepted services go to: www.naces.org (http://www.naces.org/members.html).

The deadlines for F-1 applicants to submit the International Student Application for Admission, the application fee, an original secondary school transcript, the Agreement of International Financial Support, TOEFL scores and transcripts are July 1 for the Fall Semester and November 1 for the Spring Semester.

The minimum score accepted on the Test of English as a Foreign Language (TOEFL) Internet-based test is 32.

The Agreement of International Financial Support form can be found online at International Forms and Documents (http://www.ccm.edu/admissions/apply/international/forms.aspx) on the college's website. County College of Morris requires an F-1 applicant to name a New Jersey contact on the County College of Morris Agreement of International Financial Support, even if the applicant will be self-supporting or will be sponsored from abroad. The deadline to submit a completed Agreement of International Financial Support with the supporting financial documentation is July 1 for the Fall Semester and November 1 for the Spring Semester.

F-1 visa applicants transferring from a college or university located in the United States must also submit a copy of their I-20 AB and a Foreign Student Advisor Report by July 1 for the Fall Semester or by November 1 for the Spring Semester. In addition, international students must notify their previous college to release their I-20 AB in the SEVIS database system to County College of Morris.

The I-20 AB (Certificate of Eligibility) will be sent to the accepted student’s New Jersey contact upon receipt of the Agreement of International Financial Support with the supporting documentation. Note: all F, H2, H3 and J visa holders will be charged the out-of-state tuition rate. E, G, H1, H4, I and L visa holders will be charged the appropriate in-county or out-of-county tuition if the 12-month residency requirement has been met.

Military and Veteran Services

County College of Morris (CCM) is dedicated to providing assistance to veterans, dependents of veterans, reservists, and National Guardsmen/women with the application and certification process of eligible military benefits. Staff in the Office of Counseling and Student Success will assist students with the application process and understanding the use of the Montgomery GI Bill under Chapters 30, 31, 33, 35, 1606 and 1607 as well as the New Jersey National Guard Tuition Waiver Program. While primary emphasis is placed on education benefits, information and assistance is given to military students and their dependents on community resources and other benefits available from the the Department of Veteran Affairs (DVA).

The School Certifying Officers are available in the Office of Counseling and Student Success located in the Student Community Center, Room 118. Inquiries regarding all educational benefits (Montgomery GI Bill, NJ National Guard Tuition Waiver, tuition assistance for active military personnel) can be made by calling 973-328-5140.

Programs for High School Students

At County College of Morris (CCM), we offer two distinct programs for high school students: the Challenger Program and the Thirty (30) College Credit Program for a State-Issued High School Diploma.

The Challenger Program provides currently enrolled high school students with the opportunity to enrich their education through college courses at CCM. Please refer to the Challenger Program (http://www.ccm.edu/admissions/apply/challenger/challengerprocess.aspx) link on the Admissions web page to access the brochure containing the procedures, application, and registration form. Brochures are also available in most high school guidance offices and the CCM Admissions Office. Please note that Challenger students may only use paper applications and registration forms as there is not an online provision.

The Thirty (30) College Credit Program provides students who have withdrawn from high school with the opportunity to earn a state-issued high school diploma from the New Jersey Department of Education by completing thirty (30) college credits at a community college, e.g., CCM. More information can be found on the Admissions (http://www.ccm.edu/admissions) web page; see the Thirty College Credit (http://www.ccm.edu/admissions/apply/challenger/stateendorseddiploma.aspx) link.

Readmitted Students

Any student who was previously enrolled at the college and withdrew in good standing is eligible to re-enroll. To do so, the student must submit a Request to Re-Enroll form (http://www.ccm.edu/admissions/recordsRegistration/formsandadministrativeservices.aspx) to the Office of Records and Registration, Student Community Center, Room 220. This form will help to ensure that your information is up to date including your address and program of study. The form can be found on the Records and Registration (http://www.ccm.edu/admissions/recordsRegistration) web page or at the Office of Records and Registration

Students requesting reinstatement to the Nursing and Allied Health programs will be readmitted only on a space-available basis, depending upon academic and clinical performance determined by the Nursing or Allied Health faculty. Nursing students can only be reinstated into a clinical nursing course one time, and Respiratory Therapy students can only be reinstated into the professional phase one time. Students who meet the criteria for reinstatement and have been denied a seat multiple times due to space availability will be given preferential consideration in the current reinstatement process.

Students who are academically dismissed are not eligible to apply to re-enroll until either one semester or one year has elapsed depending on the terms of the dismissal. Once the term of dismissal has been satisfied, students should contact the Office of Counseling and Student Success, Student Community Center, Room 118, to request to re-enroll after dismissal. All re-enrolled, academically dismissed students will return on academic probation.
Restricted and Capped Enrollment

Placement into certain degree or certificate programs may be restricted if interest exceeds the number that can be enrolled at a particular time. Where enrollment in a curriculum is limited, priority will be given to Morris County residents.

Admission to the following specialized programs is subject to additional criteria and restrictions. The college reserves the right to identify other academic programs that may require restricted or capped enrollments in the future.

Nursing, Radiography, Respiratory Therapy

Admission criteria, technical standards, and grade requirements for Nursing and Allied Health are described in brochures available in the Office of Admissions or in the Department of Nursing and Department of Allied Health. All prospective Nursing and Allied Health students must meet technical standards.

Technical standards are the minimum fundamental abilities that are necessary to perform the activities requisite to obtaining credit for education and subsequent entry-level employment in the nursing and allied health professions.

Internal or transfer credits for science courses over seven years old will not be accepted. If they exceed the seven-year limit, students can prove competency by testing or they must repeat the course. All science grades must be a C or higher. Please be aware that multiple grades of a D or lower in science courses prior to obtaining a passing grade will affect the student’s chances of getting a seat in the professional (clinical) phase.

Students need to be aware that due to the competitive nature of these programs, obtaining a seat in the professional (clinical) phase is based on the number of factors, including courses completed at County College of Morris, the grades earned, the overall grade point average at the time the Intent Form is filed, and a clean Criminal History Background Check. Morris County, New Jersey residents who successfully meet the criteria will be given preferential consideration. Admission into the professional (clinical) phase is not guaranteed.

Second Degrees and Certificates

Students should consult with their academic advisor before pursuing a second degree or certificate.

Students who have completed a County College of Morris (CCM) certificate program are eligible to matriculate for a second certificate or degree program. Students who have completed a CCM degree program are eligible to matriculate for another degree or certificate. Required specialized courses for the degree or certificate must be discussed with the advisor. A minimum of 21 academic credits related to a major must be earned in the second program in consultation with the appropriate department chair and academic dean determining which courses these additional credits will represent. This will replace the residency requirement applicable to the first degree. Where necessary, additional credits must be completed to meet general education requirements for the second degree or certificate. All other current degree requirements must also be met before the second degree will be awarded.

Students must declare intent to pursue a second degree, second certificate or dual degree at least two semesters prior to graduation. Admission to second degree or certificate programs with heavy enrollment demands will be on a space available basis. A credit transfer evaluation from a student’s first program to the second degree or certificate will be made at the time of matriculation. Courses will be treated as internal transfer credits and transfer grades will not be used in the grade point average calculation for the second degree or certificate.

State-Issued High School Diploma

Thirty (30) College Credit Program

(For a State-Issued High School Diploma)

The New Jersey State Department of Education affords individuals the opportunity to earn a state-issued high school diploma by completing 30 college credits at a county college. Program requirements and enrollment procedures are available through the New Jersey Department of Education at its Adult Education website, by calling 609-777-1050, or emailing ged_info@doe.state.nj.us. Suggestion: on the left side of the website, click on the Pathways to a High School Diploma link to access this program’s application and details.

CCM Admissions Enrollment Procedures

To earn the state-issued diploma through courses at County College of Morris (CCM), students may attend on a non-matriculated, non-degree basis, part-time or full-time. Once the diploma is acquired through the New Jersey State Department of Education, students may change their CCM status to matriculated, degree-seeking. Counselors will be available to help students understand how the 30 college credits may apply to an associate degree. Please note that non-matriculated students are not eligible for financial aid, the state-issued high school diploma is identical in appearance with the GED certificate, and an interview is required with a CCM admissions counselor.

Kindly submit to the Admissions Office a completed CCM Admissions Application, including the non-refundable application fee; be sure to indicate that you are not applying for an associate degree at this time.

Shortly thereafter, students will receive a letter from the Admissions Office with instructions about taking the Accuplacer placement test, a registration requirement for English, mathematics and most science courses. Individuals with learning disabilities who may be eligible for testing accommodations should contact Assessibility
Services at 973-328-5284. The Admissions Office staff will gladly help with any questions. The telephone number is 973-328-5100.

Student Categories

The college recognizes the following categories of students:

Matriculated (Degree Seeking)

Students who are officially enrolled in a program of study leading to a degree or academic certificate in specified areas (contact Admissions Office for listing). At the time of matriculation, students must take the County College of Morris (CCM) college placement examinations unless they are exempt from the examinations as determined by the Admissions Office.

Non-Matriculated (Non-Degree Seeking)

Students who are not seeking a degree or academic certificate from CCM. Non-matriculated students may enroll in credit courses for personal interest, career advancement, enrichment or possible transfer to another institution provided they satisfy all course prerequisites and other admission requirements. Non-matriculated students are not eligible for financial aid.

Non-Credit

Students who are enrolled in courses or programs of varying lengths for which no college credit is assigned. Non-credit students are exempt from the general admissions requirements of the college. These courses are administered by the Office of Community and Professional Programs (http://www.ccm.edu/businessCommunity).

Student Classifications

When applying to the college, it is important to understand student classifications.

Students in Good Standing

Students in good standing are those who have favorable academic and social records at County College of Morris (CCM). Students who previously enrolled at CCM and who withdrew in good standing are eligible to re-enroll through the Office of Records and Registration. Students who were previously non-matriculated and who wish to matriculate must apply through the Office of Records and Registration.

Academically Dismissed Students

Students who are academically dismissed are those who do not have a favorable academic record and were asked to leave the college for a period of time. These students are not eligible to re-enroll until either one semester or one year has elapsed depending on the terms of the dismissal. Once the term of dismissal has been satisfied, students should contact the Office of Counseling and Student Success to request to re-enroll after dismissal. All re-enrolled, academically dismissed students will return on academic probation.

Visiting Students

Students who are not under disqualification from any college or university may enroll in the summer sessions or on a space available basis in the regular semester as a visiting student. A certificate of good standing and approval of transfer credit by the student’s institution may be requested.

Senior Citizens

Students who are over the age of 65 must provide proof of date of birth (e.g., driver’s license, passport, birth certificate) to be eligible for the reduced tuition rate. The admissions application fee is also waived for seniors.

Students with Disabilities

CCM is committed to ensuring students with disabilities have access to academic programs, student activities and educational resources. Students with disabilities are provided with support services that are appropriate to their disabilities. Various assistive technology and accommodations may be recommended based on the nature of the disabilities in an effort to make the college campus barrier free for the students. Some examples of the assistive technology and accommodations offered by the college include a Telecommunication Device for the Deaf (TDD number 973-328-5105), voice recognition software, scanners to print in alternative format, extended time on test, distraction free test environment.

Students with physical, psychological, medical or learning disabilities should contact Accessibility Services Office in the Sherman H. Masten Learning Resource Center (library) at 973-328-5296 for more information.

Students with Visual and Hearing Impairments

CCM provides students who are visually impaired the opportunity to read the college catalog and other college brochures through an alternate media method. Those wishing to use this service should contact the Accessibility Services Office.

Students with hearing impairments may call the college’s Telecommunication Device for the Deaf, TDD number 973-328-5105, for information.

Veteran Students

Eligible veterans, dependents and reservists may apply to receive educational assistance from the Veterans Administration (VA) while enrolled at CCM. To qualify for VA benefits, students must matriculate into an approved degree or certificate program and maintain satisfactory academic progress.

Please note that Veterans Administration education benefits are not payable for courses previously completed. Therefore, student-veterans who declare academic bankruptcy upon reentry into the college are advised that VA benefits will not be invoiced for courses that received passing grades during the initial attendance period. For further information contact the school certifying officer in the Office of Counseling and Student Success.
Note: Individuals who are eligible for the Montgomery GI Bill under Chapters 30, Chapter 35, 1606, 1607, and VRAP are responsible for paying their own tuition regardless of when they receive their VA benefits check. CCM does not provide tuition deferment for these veterans.

Transfer Students

Students who have attended other colleges or universities and who wish to receive a transfer credit evaluation must submit to the Admissions Office official transcripts in sealed envelopes from the previous higher education institutions. The Office of Records and Registration will evaluate and grant transfer of credit after the applicant has been matriculated. The student shall be notified regarding what credits have been accepted for transfer.

Per the Comprehensive State-Wide Transfer Agreement, “All decisions made with respect to the transfer process shall be based on the principle of equivalence of expectation requirements for native and transfer students.” Upon individual review of exceptional cases, transfer credits may be granted from non-accredited institutions or through other forms of post-secondary education.

Courses completed at a regionally accredited college or university, with a grade of C (2.0) or above will be evaluated for transfer of credit provided the courses are applicable to the applicant’s program at County College of Morris (CCM). Upon individual review, CCM could accept a grade of D in certain programs for some coursework. Upon individual review of exceptional cases, transfer credits may be granted from non-accredited institutions or through other forms of postsecondary education. Transfer students must complete at least 30 credits total and at least half of the credits in the major at CCM to receive a degree. Additionally, at least one half of the credits for a certificate must be completed at CCM. Grades received at other institutions will not be used in computing the cumulative grade point average at CCM.

In some cases, a grade of D will not fulfill prerequisites for higher level coursework.

Reverse Credit Transfer

Matriculated students who complete a minimum of 30 credits at CCM and transfer to another accredited college or university are eligible to have future credits earned at the institution to which they transfer apply towards the completion of their declared CCM associate degree. Students must have completed at least half of the credits from their major at CCM. The reverse credit transfer may be arranged by the student requesting that the transcript be sent for the first two consecutive terms of enrollment at the college/university to CCM. The reverse credit transfer may also be arranged by CCM through formal agreements with select colleges and universities.

Students may have seven years from the date of their transfer to take advantage of this policy.

Tuition-Free Program

National Guard Tuition-Free Program

In cooperation with the New Jersey Legislature, County College of Morris will grant tuition-free enrollment to certain members of the New Jersey National Guard. The tuition program provides soldiers and airmen the opportunity for professional development by defraying a major portion of the tuition costs while serving in the New Jersey National Guard.

Any member of the New Jersey National Guard shall be permitted to attend regularly scheduled courses at CCM and receive up to 16 credits per semester tuition free provided:

1. The member has completed Initial Active Duty Training (IADT).
2. The member is in good standing as an active drilling member of the New Jersey National Guard.
3. The member has been accepted to pursue a course of undergraduate study and is enrolled as an undergraduate student in good standing at the institution.
4. Each year the member must apply for all available state and federal student grants and scholarships for which the member may be eligible to receive.

Interested students should contact the School Certifying Officer in the Office of Counseling and Student Success for eligibility criteria and application procedures.

Unemployed Persons

Unemployed persons seeking to enroll under the Department of Labor’s job training program must submit to the Admissions Office documentation from the Department of Labor as proof of eligibility. This documentation must be dated no earlier than 30 days prior to the first day of the semester. After indicating that they are participating in this waiver program, eligible students will receive the County College of Morris Tuition Free Program Form from the Admissions Office or our website documenting the necessary steps to follow. This includes notification that they are required to file for financial aid. Students must be prepared to pay any balance and/or fees at the time of registration and cannot register until the first day of the semester and/or session.

Note: Students will not be reimbursed and allowed to apply the waiver to any registration that was previously paid.

Volunteer Fire and Rescue

Volunteer Fire and Rescue personnel and/or their dependent children and spouses seeking to enroll under the Tuition Free Program, (maximum of $600 per academic year) must obtain a validated VTC 5 Form from their municipality. The completed form must be presented to the Bursar Office and students need to be prepared to pay any balance and/or fees at the time of registration.

Note: Students will not be reimbursed and allowed to apply the waiver to any registration that was previously paid.

Who May Attend

Admissions Policy

County College of Morris (CCM) is open to all students who may benefit from college level study and who have a reasonable chance of successfully completing its courses and programs. Acceptance into credit courses and programs of study leading to a degree or certificate requires a high school diploma, General Equivalency
Diploma (GED), Home School Certificate or equivalent, or a demonstrated ability to benefit from post-secondary studies.

Please note the section Restricted and Capped Programs (p. 36) for exceptions. The college reserves the right to refuse admission to any applicant where there is evidence that the individual would endanger his or her own health or safety or the health or safety of others.

Admissions Policy for Pre-College Age Students

State-Issued High School Diploma

Prospective students who have left high school and have not received their diploma or a GED may attend CCM to pursue a state-issued high school diploma. These prospective students must apply and send their official high school transcript and SAT or ACT scores, if taken. Prospective students must schedule an appointment to meet with the director of Admissions by calling 973-328-5100.

Prospective students must take and pass placement exams in English, mathematics and reading. Upon enrolled in CCM, students must take courses in designated subject areas equaling 30 total credit hours. Upon completion, the student may request that an official transcript be sent to the State of New Jersey for the issuance of the high school diploma.

Procedures for Pre-College Age Students

Students who wish to enroll in a college course or courses while still in high school may do so through one of the following programs:

- Academy Program
- Challenger Program (including home schooled)

Please contact your high school guidance counselor for details regarding these programs. Additional information is also available through the Admissions office, 973-328-5100.

Areas of Study

- Administrative Support Certificate of Achievement (P0356) (p. 66)
- Advanced Electronics Certificate of Achievement (P0637) (p. 98)
- Advanced Mechanical Analysis Certificate of Achievement (P0635) (p. 157)
- Agribusiness (P3321) (p. 147)
- Assembly and Testing Certificate of Achievement (P0627) (p. 157)
- Basic Electronics Certificate of Achievement (P0631) (p. 98)
- Biology - Science and Math (P2160) (p. 203)
- Biology - Education Track (P2160 TEBIO) (p. 215)
- Biotechnology (P3330) (p. 40)
- Broadcasting Arts and Technology, Media Studies (P1132) (p. 46)
- Business Administration (Transfer Program) (P2110) (p. 48)
- Business Professional (Career Program) (P3400) (p. 53)
- Chemical Technology (P3450) (p. 58)
- Chemical Technology Environmental Science Option (P3451) (p. 58)
- Chemistry - Science and Math (P2152) (p. 203)
- Chemistry: Chemistry-Education Track (P2152 TECHM) (p. 215)
- CIS - Game Development Option (P3504) (p. 66)
- Communication (P1129) (p. 64)
- Computer Aided Drafting Certificate (P5710) (p. 157)
- Computer Science (P2500) (p. 73)
- Criminal Justice (P2950) (p. 79)
- Culinary Arts and Science (P3425) (p. 82)
- Culinary Arts Certificate of Achievement (P0420) (p. 82)
- Dance (P4170) (p. 86)
- Design (P4141) (p. 89)
- Digital Media Technology (P3530) (p. 93)
- Digital Technology Certificate of Achievement (P0629) (p. 98)
- Early Childhood Development Certificate (P5134) (p. 97)
- Early Childhood Education (P2940) (p. 97)
- Electronics Engineering Technology (P3600) (p. 98)
- Electronics Engineering Technology - Biomedical Equipment Option (P3601) (p. 98)
- English - Education Track (P1130 TEENG) (p. 215)
- Engineering Science (P2180) (p. 104)
- Engineering Technology Certificate of Achievement (P0633) (p. 157)
- Environmental Track (Biology) (P2160) (p. 203)
- ESL - English for Speakers of Other Languages (P0961) (p. 107)
- Exercise Science (P2960) (p. 108)
- Exercise Science: Physical Education - Education Track (P2960 TEPED) (p. 215)
- Finance Certificate of Achievement (P0344) (p. 48)
- Fire Science Technology (P3460) (p. 112)
- Garden Center Certificate of Achievement (P0323) (p. 147)
- Graphic Design (P3560) (p. 114)
- Grounds Maintenance Certificate of Achievement (P0321) (p. 147)
- Health Related Track (Biology) (P2160) (p. 203)
- History - Education Track (P1130 TEHIS) (p. 215)
- Honors Study (p. 116)
- Hospitality Management (P3420) (p. 117)
- Hospitality Management - Restaurant and Culinary Management Option (P3434) (p. 117)
- Human Services - Liberal Arts and Science (P1134) (p. 122)
- Humanities/Social Science - Liberal Arts and Science (P1130) (p. 123)
- Information Security Certificate of Achievement (P0354) (p. 66)
- Information Technology (P3525) (p. 136)
- International Studies - Liberal Arts and Sciences (P1160) (p. 144)
- Journalism, Media Studies (P1133) (p. 145)
- Landscape Management and Design (P3320) (p. 147)
• Landscape Design Certificate of Achievement (P0320) (p. 147)
• Landscape Contractor Certificate of Achievement (P0322) (p. 147)
• Languages (p. 152)
• Mathematics - Science and Math (P2150) (p. 203)
• Mechanical CAD Certificate of Achievement (P0625) (p. 157)
• Mechanical Engineering Technology (P3700) (p. 157)
• Media Technology Certificate of Achievement (P0360) (p. 93)
• Music - Liberal Arts and Sciences (P1190) (p. 163)
• Music Technology Electronic Music Option (P2171) (p. 170)
• Music Technology Music Recording Option (P2170) (p. 170)
• Musical Theatre - Liberal Arts and Sciences (P2006) (p. 178)
• Nursing (P3800) (p. 185)
• Nutrition Track (Biology) (P2160) (p. 203)
• Occupational Therapy Assistant (P2155) (p. 188)
• Personal Trainer Certificate of Achievement (P0950) (p. 189)
• Photography Technology (P3550) (p. 192)
• Preprofessional Scientific Track (Biology) (P2160) (p. 203)
• Psychology - Education Track (P1130 TEPSY) (p. 215)
• Public Administration (P2260) (p. 194)
• Public Health (P2156) (p. 196)
• Radiography (P3840) (p. 197)
• Respiratory Therapy (P3850) (p. 200)
• Restaurant Management and Event Planning Certificate of Achievement (P0421) (p. 117)
• Routing (CISCO CCNA) Certificate of Achievement (P0622) (http://catalog.ccm.edu/credit/areasofstudy/telecommunications)
• Small Business Management Certificate of Achievement (P0400) (p. 48)
• Sociology - Education Track (P1130 TESOC) (p. 215)
• System and Application Software Certificate of Achievement (P0351) (p. 66)
• Spanish - Education Track (P1130 TESP) (p. 215)
• Study Abroad (p. 323)
• Teacher Education (p. 215)
• Technical Studies (P3510) (p. 221)
• Traditional Track (Biology) (P2160) (p. 203)
• Turf and Turfgrass Management (P3324) (p. 147)
• Visual Arts (P4140) (p. 236)
• Visual Arts - Education Track (P4140 TEART) (p. 215)
• Web Development Certificate of Achievement (P0352) (p. 66)

Biotechnology

Associate in Applied Science Degree

Note: Biotechnology students requiring developmental courses in math must complete MAT-016 Intermediate Algebra prior to taking courses in Biology and Chemistry.

Biotechnology, the most rapidly growing sector in the field of biology and a major industry in New Jersey, is the application of the basic principles of the life sciences in the study of plants, animals, microbes, tissues, cells, biological molecules or a product that has a biological process attached to it. Students learn modern biotechnology methods and instrumentation and graduate with both theoretical knowledge and practical training and an Associate in Applied Science degree. Students are equipped with state-of-the-art skills including DNA fingerprinting, genetic engineering and HPLC, and are able to work at the technician level in research and pharmaceutical laboratories, molecular genetics, cosmetic/personal care product laboratories, biochemical, and food or animal care facilities. Graduates qualify for positions as biotechnology technicians, staff technologists, research assistants, microbiologists, histologists or cosmetic laboratory technologists. Students can make a choice for either direct employment and/or transfer to a four-year institution for a baccalaureate degree in biology or related scientific disciplines. Courses in this program are also ideal for retraining purposes.

Our Cooperative Education program (co-op) provides students the opportunity to gain valuable, practical skills working in industry as part of their educational experience.

For more information, visit the Biotechnology (http://www.ccm.edu/academics/degrees/biotech.aspx) website.

Degrees

AAS Biotechnology

(P3330)

General Education Foundation

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Total Education Foundation Credits 20

Biotechnology Core

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Total Credits 64
Students should consult with their academic advisors when selecting free electives.

Science courses completed by students prior to entering the Biotechnology program must have been taken within the past seven years. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

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Courses

**BIO-100. Elements in Biology. 3 Credits.**
LECT 3 hrs
A foundation providing necessary skills and concepts needed to pursue the biology major. The course stresses skill development in areas such as communication, classification, inquiry, mathematical measurement, data analysis and report writing. Skills then are applied to the study of the cell cycle and diverse life processes.

**Additional Fees:** Course fee applies.

**BIO-101. Anatomy and Physiology I. 4 Credits.**
LECT 3 hrs, LAB 3 hrs
The structure and function of the human organism is studied. Special emphasis is given to interrelationships of organs and organ systems. Cellular morphology and function are included for an appreciation of the adult form. The student is introduced to basic chemistry, the cell, basic tissues, the skeletal, muscular and nervous systems. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.

**Prerequisites:** Placement basis or ENG-007 or ENG-022 or ENG-025 and MAT-016

**Additional Fees:** Course fee applies.

**BIO-102. Anatomy and Physiology II. 4 Credits.**
LECT 3 hrs, LAB 3 hrs
A continuation of Anatomy and Physiology I. The circulatory, respiratory, digestive, urinary, endocrine and reproductive systems are studied. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.

**Prerequisites:** BIO-101 (Minimum grade of C)

**Additional Fees:** Course fee applies.

**BIO-116. Animal Control Officer's Training Course. 3 Credits.**
LECT 3 hrs
Preparation for New Jersey State Certification as an Animal Control Officer. Topics include legal authority for animal control (federal, state, local); courtroom procedures; animal behavior, capture and handling; disease recognition, prevention and control; shelter operations; and community relations.
BIO-118. Biomedical Ethics. 3 Credits.
LECT 3 hrs
This course introduces students to major ethical issues in areas of biomedicine in contemporary society. The focal point of the course is a process for ethical reasoning and ethical decision making. Students identify ethical problems, assess information relevant to decisions, identify stakeholders affected by decisions, recognize competing values, consider options, make decisions and realize the consequences of decisions. The process is applied to issues in such fields as genetics, death and dying, reproduction, public policy and medical decision making. This course does not fulfill a laboratory science requirement.

BIO-121. General Biology I. 4 Credits.
LECT 3 hrs, LAB 3 hrs
An introduction to the biological sciences through a study of concepts basic to the biology science major. Topics include the fundamentals of chemistry, cell structure and function, and the nature of biological molecules, bioenergetics, protein synthesis and photosynthesis. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-007 or ENG-022
Additional Fees: Course fee applies.

BIO-122. General Biology II. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A continuation of General Biology I. Topics include homeostasis, animal reproduction, embryonic development, genetics, ecology and evolution. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.
Prerequisites: BIO-121 or BIO-180 (Minimum grade of C)
Additional Fees: Course fee applies.

BIO-123. Cell Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Fall semester only. An introduction to the fundamentals of cellular biology. Topics covered are the nature of biologically important molecules, molecular synthesis, energetics, cellular structure and function, cell reproduction, heredity, and basic laboratory techniques for cellular study. All remedial courses must be completed prior to taking this course.
Prerequisites: Placement basis or MAT-016 and ENG-007 or ENG-025 or ENG-022
Additional Fees: Course fee applies.

BIO-127. Biology of Environmental Concerns. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. A survey of ecological issues from a variety of perspectives. The course provides an awareness of environmental problems, a knowledge of cause-and-effect relationships of diverse activities on this planet and a basis for making informed judgments about the potential solutions to environmental problems. Major topics include the roots of our environmental problems, introductory concepts in ecology, human population dynamics and control, food resources and world hunger, renewable and nonrenewable energy resources, mineral resources and solid waste, wild plant and animal resources, water resources, air pollution, water pollution, pesticides and pest control, economics, politics and the environment, world views, and ethics and the environment. This course fulfills the general education laboratory science requirement.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.

BIO-132. Concepts in Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. A basic introduction to the study of biological science. Topics include the hierarchy of organization, life processes, cell theory, human genetics, theories of evolution, biochemistry and some principles of ecology. This course fulfills the general education laboratory science requirement.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.

BIO-133. Human Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. A survey of ecological issues from a variety of perspectives. The course provides an awareness of environmental problems, a knowledge of cause-and-effect relationships of diverse activities on this planet and a basis for making informed judgments about the potential solutions to environmental problems. Major topics include the roots of our environmental problems, introductory concepts in ecology, human population dynamics and control, food resources and world hunger, renewable and nonrenewable energy resources, mineral resources and solid waste, wild plant and animal resources, water resources, air pollution, water pollution, pesticides and pest control, economics, politics and the environment, world views, and ethics and the environment. This course fulfills the general education laboratory science requirement.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.

BIO-180. General Biology I - Honors. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Fall Semester only. This is an introduction to the biological sciences through a study of principles and concepts basic to the major discipline of biology. Topics include fundamentals of chemistry, cell structure and function, the nature of biological molecules, energetics, synthesis and the morphology and physiology of animals and plants. Dissection is required as part of the laboratory syllabus. Lecture and laboratory use an investigatory approach which will emphasize both written and oral communication skills.
Prerequisites: Placement basis or MAT-016 and ENG-007 or ENG-022 or ENG-025 and permission of department chair or honors advisor
Additional Fees: Course fee applies.
BIO-181. General Biology II - Honors. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Spring Semester only. A continuation of BIO-180 General Biology I Honors. Topics include homeostasis, animal reproduction and embryonic development, genetics, ecology, and evolution. Dissection is required as part of the laboratory syllabus. Lecture and laboratory use an investigatory approach that emphasizes both written and oral communication skills.
Prerequisites: BIO-180 or BIO-121 and permission of honors advisor
Additional Fees: Course fee applies.

BIO-201. Genetics. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Spring Semester only. Provides the student with a broad knowledge of genetics from the molecular to the organismal level. Topics covered include the molecular and Mendelian concepts of heredity and their relationship to cell function, development, population changes and evolution, and biotechnology. Laboratory exercises emphasize a variety of techniques and skills used in genetic research and testing.
Prerequisites: BIO-121 and BIO-122 or BIO-180 and BIO-181 (Minimum grade of C required for all prerequisites)
Additional Fees: Course fee applies.

BIO-202. Ecology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Fall Semester only. This course introduces the basic fundamentals of ecology, the study of the interrelationships between organisms and their environment. Topics include an introduction to ecosystem structure and function, abiotic factors in ecosystems, energy flow and mineral cycling, population and evolutionary ecology, community ecology, a comprehensive survey of aquatic and terrestrial ecosystems, and human ecology. Laboratories and field trips are designed to introduce students to techniques used in basic ecological research.
Prerequisites: Minimum grade of C required for either BIO-121 or BIO-180 or LHT-110
Additional Fees: Course fee applies.

BIO-215. Microbiology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A comprehensive study of microorganisms, including viruses, bacteria, fungi, protozoa and algae. Topics covered include microbial anatomy, physiology, genetics, ecology and methods of control. Research methods and modern immunological concepts also are discussed. Laboratory exercises in basic microbiological techniques and the study of living microorganisms are designed to supplement the theory presented.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025 and BIO-101 or BIO-121 or BIO-123 or BIO-180 (minimum grade of C) and CHM-117 or CHM-125 and CHM-126 (minimum grade of C)
Additional Fees: Course fee applies.

BIO-223. Cell and Molecular Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A comprehensive study of biological molecules and their functions. Emphasis will be placed on the mechanism and regulation of macromolecule synthesis. Laboratory exercises will focus on instrumentation and techniques used in biological research.
Prerequisites: BIO-121 or BIO-123 and CHM-125 and CHM-126
Minimum grade of C required for all prerequisites
Additional Fees: Course fee applies.

BIO-226. Cooperative Work Experience - Biology. 3 Credits.
COOP 3 hrs
This course provides selected students enrolled in the Biotechnology or Biology Major with job-oriented laboratory training and practical work experience in a paid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chairperson by the end of their second semester. Offered Fall, Spring and Summer, day.
Prerequisites: Fourth semester status as a Biotechnology or Biology major and permission of department chair.

BIO-228. Internship Work Experience - Biology. 3 Credits.
COOP 3 hrs
This course provides selected students enrolled in the Biotechnology or Biology Major with job-oriented laboratory training and practical work experience in an unpaid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chairperson by the end of their second semester. Offered Fall, Spring and Summer, day.
Prerequisites: Fourth semester status as a Biotechnology or Biology major and permission of department chair.

BIO-233. Independent Study in Biology. 3 Credits.
LECT 3 hrs
An opportunity for selected students to participate in biological research under close supervision of the biology faculty. Interested students should make their interest known early in the prior semester to the department chair, who will familiarize the students with criteria for selection and the steps to be taken to gain entrance to this course. This course does not fulfill any of the science requirements in biology but is offered as a free elective.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

BIO-274. Pathophysiology. 3 Credits.
LECT 3 hrs
Pathophysiology is a course which studies the physiological alterations associated with common disease processes which affect human beings across the lifespan. Common diseases of the major organ systems are covered as well as such general issues as infection, neoplasm, inflammation, fluid and electrolyte imbalance, trauma, and shock.
Prerequisites: BIO-101 and BIO-102 and CHM-117 Minimum grade of C required for all prerequisites.

BIO-295. Special Topics in Biology. 4 Credits.
LECT 4 hrs
An examination of selected topics or issues in biology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Biology and permission of department chair
Additional Fees: Course fee applies.

CHM-100. Elements of Chemistry. 3 Credits.
LECT 3 hrs
A one-semester, introductory 3-credit, non-laboratory course designed for students with little or no background in chemistry. Emphasis is on preparing students for General Chemistry and Introductory Chemistry courses. The course encompasses chemical principles and calculations with a brief review of algebra.
Prerequisites: MAT-016 - minimum grade of C required.
CHM-105. Forensic Science. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. An introduction to the applications of the physical and biological sciences in analyzing and evaluating physical evidence as related to crime and the law.
Additional Fees: Course fee applies.

CHM-117. Introductory Chemistry Lecture. 3 Credits.
RECI 1 hr, LECT 3 hrs
An introduction to the basic concepts of inorganic, organic and biochemistry. The emphasis is on the relationship of these concepts to physiological chemistry and living systems. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or MAT-016 (minimum grade of C) and ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-118.

CHM-118. Introductory Chemistry Laboratory. 1 Credit.
LAB 1 hr
Laboratory experiments illustrate principles studied in CHM-117. Required for Landscape and Horticultural Technology, liberal arts majors and some Allied Health programs.
Prerequisites: Placement basis or MAT-016 (minimum grade of C) and ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-117
Additional Fees: Course fee applies.

CHM-125. General Chemistry I - Lecture. 3 Credits.
RECI 1 hr, LECT 3 hrs
A study of the fundamental principles of chemistry and their application to chemical reactions. Topics include the structure of the atom, concepts of matter, mass relationships for pure substances and chemical reactions, solutions, electronic structure, the chemical bond, nuclear reactions and gases. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement College Level Math test or MAT-110 (minimum grade of C) and Placement basis or ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-126.

CHM-126. General Chemistry I - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments illustrate principles studied in CHM-125. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement College Level Math test or MAT-110 (minimum grade of C) and Placement basis or ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-125
Additional Fees: Course fee applies.

CHM-127. General Chemistry II - Lecture. 3 Credits.
RECI 1 hr, LECT 3 hrs
A continuation of General Chemistry I with emphasis on chemical equilibrium and energy changes in chemical reactions. Also included are acids, bases, buffers, chemical thermodynamics, kinetics, qualitative analysis and electrochemistry. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-125 (minimum grade of C), CHM-126 and placement basis or ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-128.

CHM-128. General Chemistry II - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments illustrate principles studied in CHM-127. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-125 and CHM-126 (minimum grade of C required for both) and placement basis or ENG-007 or ENG-022 or ENG-025
Corequisites: CHM-127
Additional Fees: Course fee applies.

CHM-136. Environmental Regulation. 3 Credits.
LECT 3 hrs
This course is an overview of critical environmental issues encountered by industry from a regulatory perspective. Various federal and New Jersey state regulations pertaining to air, water, hazardous waste and hazardous materials management are investigated. Students acquire knowledge on how industry complies with the diversity of regulatory requirements. Students are exposed to examples of instances where industrial non-compliance with applicable regulations has led to deleterious environmental and occupational health effects. Current issues and their significance to environmental and occupational health are discussed including, Clean Water Act, Clean Air Act, Environmental Cleanup and Responsibility Act (ECRA), Resource Conservation and Recovery Act (RCRA), Occupational Safety and Health Act (OSHA), Toxic Substance Control Act (TSCA), Asbestos, indoor air quality and underground storage tanks.
Prerequisites: BIO-123 and CHM-125.

CHM-204. Principles of Occupational Health and Safety. 3 Credits.
LECT 3 hrs
A survey course providing an overview of industrial hygiene and the roles that the industrial hygiene professional plays in recognizing, evaluating and controlling hazards in the workplace. This course provides an introduction to the qualitative and quantitative issues essential to comprehend occupational safety and health principles. Case studies and hands-on exercises are utilized to stress key concepts.

CHM-210. Essentials of Organic Chemistry. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Summer Semester only. This course is the study of the basic principles of structure, reactivity and nomenclature in organic chemistry. The laboratory develops basic work skills in the types of experiments performed in a typical organic chemistry laboratory with emphasis on the safe handling of laboratory chemicals and the proper presentation of experimental results.
Prerequisites: CHM-117 and CHM-118 or CHM-127 and CHM-128 (minimum grade of C for all prerequisites)
Additional Fees: Course fee applies.

CHM-212. Biochemistry. 4 Credits.
LECT 3 hrs, LAB 3 hrs
An introduction to physiological chemistry. Lectures cover amino acids, proteins, lipids, nucleic acids, carbohydrates, molecular genetics, energetics and metabolic pathways. Lab reinforces concepts covered in lecture. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-117 (minimum grade of C) or CHM-125 (minimum grade of C)
Additional Fees: Course fee applies.
CHM-219. Quantitative Chemical Analysis. 5 Credits.
LECT 3 hrs, LAB 6 hrs
Fall Semester only. Principles of modern quantitative methods in chemistry, including the study of chemical equilibria, solubility, acidity and complex formation. The laboratory work involves practical applications of inorganic and organic analysis including volumetric, gravimetric, chromatographic and instrumental techniques. Emphasis is placed on the statistical treatment of data and report writing. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 (minimum grade of C) or equivalent
Additional Fees: Course fee applies.

CHM-220. Instrumental Methods of Analysis. 5 Credits.
LECT 3 hrs, LAB 6 hrs
Spring Semester only. This survey course covers theory and applications of modern instrumentation utilized to solve problems in chemical analysis. Laboratory work involves hands-on experience utilizing instruments such as gas(GC), liquid(HPLC) and ion chromatography; spectrophotometric methods including visible, ultraviolet, infrared(FTIR) and atomic absorption; ICP and other methods, including ion selective electrode methods; and electrophoretic methods including capillary electrophoresis(HPCE). Emphasis is placed on the comparison of methods, the collection and interpretation of laboratory data, technical report writing and record keeping. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 or equivalent (minimum grade of C)
Additional Fees: Course fee applies.

CHM-228. Cooperative Work Experience - Chemistry. 3 Credits.
COOP 3 hrs
This course provides selected students enrolled in the Chemical Technology or Chemistry programs with job-oriented laboratory training and practical work experience in a paid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chair by the end of their second semester. Offered Fall, Spring and Summer, day.
Prerequisites: Fourth semester status as a Chemical Technology or Chemistry major and permission of department chair.

CHM-229. Internship Work Experience - Chemistry. 3 Credits.
COOP 3 hrs
This course provides selected students enrolled in the Chemical Technology or Chemistry Major with job-oriented laboratory training and practical work experience in an unpaid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chairperson by the end of their second semester. Offered Fall, Spring and Summer, day.
Prerequisites: Fourth semester status as a Chemical Technology or Chemistry major and permission of department chair.

CHM-231. Organic Chemistry I - Lecture. 3 Credits.
LECT 3 hrs
This course is an introduction to the chemistry of carbon compounds. Topics include the study of fundamental concepts of structure and stereochemistry, physical properties of organic compounds and a functional approach to the interpretation of organic reactions. This course is designed for majors in Biology, Chemistry, Pharmacy, and for students preparing for medical, dental and veterinary schools. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 (minimum grade of C) and CHM-128 (minimum grade of C)
Corequisites: CHM-232.

CHM-232. Organic Chemistry I - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments stress techniques involved in the synthesis and purification of typical organic compounds using both macroscale and microscale techniques. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 (minimum grade of C) and CHM-128 (minimum grade of C)
Corequisites: CHM-231
Additional Fees: Course fee applies.

CHM-233. Organic Chemistry II - Lecture. 3 Credits.
LECT 3 hrs
A continuation of the study of organic compounds with further study of functional groups, reaction mechanisms including nucleophilic substitution and elimination reactions, and infrared and nuclear magnetic resonance spectroscopy. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-231 (minimum grade of C) and CHM-232 (minimum grade of C)
Corequisites: CHM-234.

CHM-234. Organic Chemistry II - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments involve the multi-step synthesis of organic compounds, which illustrate the principles of CHM-233, using macroscale and microscale techniques. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-231 (minimum grade of C) and CHM-232 (minimum grade of C)
Corequisites: CHM-233
Additional Fees: Course fee applies.

CHM-235. Independent Study in Chemistry. 3 Credits.
LECT 3 hrs
This course is an opportunity for selected students to participate in independent research under close supervision of a Chemistry faculty member. Interested students should make their interest known early in the prior semester to the department chair who will detail the criteria for selection.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.
CHM-295. Special Topics in Chemistry. 4 Credits.
LECT 3 hrs, LAB 3 hrs
An examination of selected topics or issues in chemistry. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Chemistry and permission of department chair
Additional Fees: Course fee applies.

CHM-296. Special Topics in Chemistry. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in chemistry. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Chemistry and permission of department chair.

Broadcasting Arts and Technology, Media Studies

Having earned a degree in Broadcasting Arts and Technology, graduates are prepared to transfer and complete requirements in communication, media, or broadcasting. This program focuses on developing media skills and offers technical applications in the areas of television and multimedia. The Broadcasting Arts and Technology emphasis also provides opportunities for a supervised media internship in a specialized area.

For more information, visit the Department of Communication (http://www.ccm.edu/academics/divdep/liberalarts/communication/default.aspx) webpage.

Degrees

AA Broadcasting Arts and Media Studies - An Option within Liberal Arts
(P1132)

General Education Foundation

Communication 9
ENG-111 English Composition I
ENG-112 English Composition II
COM-109 Speech Fundamentals
Math-Science-Technology 12
MAT-120 Mathematics for the Liberal Arts
or MAT-130 Probability and Statistics
Laboratory Science Elective
CMP-126 Computer Technology and Applications
Social Science 6
SOC-120 Principles of Sociology
PSY-113 General Psychology
Humanities 9
Language/Literature Sequence 1
Humanities Elective 1
History 1 6
Diversity 3
ISA-110 Intercultural Communication

General Education Foundation Credits 45

Broadcasting Arts and Technology Core

MED-114 Media Aesthetics 3
MED-117 Introduction to Broadcasting 3
MED-210 Digital Video Editing 3
MED-211 Television Production I 3
MED-212 Television Production II 3
Restricted Elective (select one class) 3-4
MED-110 Multimedia I
MED-119 Digital Media Production
MED-220 Animation
MED-240 Advanced Animation
MED-291 Special Topics in Media
MED-292 Special Topics in Media
MED-293 Special Topics in Media
COM-101 Introduction to Communication
COM-102 Advertising and Society
COM-103 Introduction to Public Relations
COM-104 Interpersonal Communication
COM-105 Media Literacy
COM-111 Introduction to Journalism
COM-112 Advanced Journalism
COM-115 Introduction to Mass Media
COM-120 Broadcast Journalism
COM-209 Editing and Publication Design
COM-230 Communications Internship
COM-234 Introduction to Film
COM-291 Special Topics in Communication
COM-292 Special Topics in Communication
PHO-213 Documentary Photography
Broadcasting Arts and Technology Core Credits 18-19
Total Credits 63-64

Faculty

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Courses

MED-110. Multimedia I. 3 Credits.
LECT 3 hrs
Multimedia I is a survey course designed to allow students to explore, discuss, develop and use multimedia technology. This computer-based course offers an extensive overview of the technologies of multimedia. Students engage in issues related to usability, management and distribution. Topics include multimedia development and design, media elements, and emerging hardware and software trends. A multimedia prototype project that demonstrates conceptual and technical understanding is required.

Prerequisites: ENG-025 or ENG-022 or ENG-007.

Additional Fees: Course fee applies.

MED-113. Multimedia II. 3 Credits.
LECT 3 hrs
An advanced course designed to allow students to apply the theory and basic practical knowledge presented in Multimedia I. Students apply their knowledge productions for DVD, local networks or the Internet. Students incorporate traditional media production elements such as video and audio combined with the latest features and technologies. Conceptualization, user interface design and prototyping are key course elements. A multimedia prototype project that demonstrates conceptual and technical understanding is required.

Prerequisites: MED-110

Additional Fees: Course fee applies.

MED-114. Media Aesthetics. 3 Credits.
LECT 3 hrs
Media Aesthetics looks at the importance, influence and meaning of visual images designed for use in electronic media. Through current and historical examples, students learn the principles and significance of media aesthetics including light and color, space and structure, time and motion, and sound, and how they are used to optimize effective communication. Students learn how aesthetic elements of television and multimedia have been translated into vectors - forces that push or pull users in certain directions. Operationally, students learn how to interpret, order, clarify and intensify various communications including fiction, by applying appropriate aesthetic principles. Comparisons between television and multimedia images are closely examined. Students may apply knowledge of media aesthetics by producing projects using broadcast and digital media facilities.

Additional Fees: Course fee applies.

MED-117. Introduction to Broadcasting. 3 Credits.
LECT 3 hrs
This course offers a historical and content analysis approach to the study of broadcast and narrowcast communications. Included are the research and study of systems, regulations, program genres, social effects on audiences, and the future of the industry. This is accomplished via lectures and discussions, handouts, reading assignments and in-class viewing and listening assignments.

Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

MED-119. Digital Media Production. 3 Credits.
LECT 3 hrs
This course provides students with theory and training in the area of digital content development for digital media productions. Software and hardware training in digital video, audio, animation and graphics are introduced. In addition, the appropriate use of these areas of content in developing digital media productions and interface design are discussed.

Additional Fees: Course fee applies.

MED-210. Digital Video Editing. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Through hands-on learning, Digital Video Editing provides students with the fundamental principles of video editing with a focus on the techniques and technology used to achieve a superior final product. An in-depth exploration of non-linear editing concepts includes a deeper understanding of primary, secondary and tertiary motion, shot types, sequencing, transitions and continuity. Students learn to log and capture raw video, assemble shots on a timeline, create, add, and edit text, audio tracks, title animation, effects, transitions, continuity and video compositing. This course is ideal for students who wish to create and edit a professional video for broadcast, webcast and other motion media venues.

Prerequisites: MED-113 or MED-211

Additional Fees: Course fee applies.

MED-211. Television Production I. 3 Credits.
LECT 3 hrs
This course introduces students to the basic operation of a television studio and the production process. Students learn techniques and develop skills in various studio functions including camera, switching, sound, lighting, teleprompter, scriptwriting and directing. Collaboration and teamwork are emphasized.

Additional Fees: Course fee applies.

MED-212. Television Production II. 3 Credits.
LECT 3 hrs
Students employ skills learned in Television Production I and learn advanced production skills including studio and remote producing, remote-location video shooting, digital editing, advanced special FX generation and switching, and set design via a "live on tape" production of an actual television program.

Prerequisites: MED-211 and MED-114

Corequisites: MED-210

Additional Fees: Course fee applies.

MED-213. Multimedia Authoring and Design. 3 Credits.
LECT 3 hrs
Using industry-standard authoring software, students apply multimedia technology to assemble a real-world interactive multimedia project. Concepts and principles of user interface design, digital audio and video production, team production techniques and usability testing are employed. As members of a production team, students plan, manage and implement a complex multimedia production project to be used on DVD, a local network or the Internet for a participating business partner.

Prerequisites: MED-113

Additional Fees: Course fee applies.
MED-218. Video Magazine Production. 3 Credits.
LECT 3 hrs
Instruction and practice in news gathering and writing news stories for a video magazine, analysis of commercial video magazines and production of video magazines including graphics and post-production experience are objectives of this advanced media course.
Prerequisites: MED-211 or permission of instructor.

MED-220. Animation. 3 Credits.
LECT 3 hrs
This is an advanced production course utilizing 3D modeling and animation software to create animated imagery for video and multimedia applications. Software includes 3D Studio Max (3D animation) and Adobe Premiere and AfterEffects (digital video). Through assigned projects, students learn to combine live video and animation with compositing and bluescreening techniques.
Additional Fees: Course fee applies.

MED-224. Independent Study in Media. 3 Credits.
LECT 3 hrs
Students, in consultation with a media advisor, undertake an in-depth analysis of a selected topic, problem or issue related to media or pursue additional media-related work experience. Students are responsible for developing a statement of goals, maintaining a weekly log and preparing a written and oral summary report. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MED-228. Cooperative Work Experience- Media Stud. 3 Credits.
COOP 3 hrs
Actual applications of classroom learning in a supervised on-the-job training experience takes place daily. Students pursue their career objectives in the broadcasting arts or digital media area following a training plan with the assistance of the department chair and on-the-job supervisor. Interested students should consult with the Department of Information Technologies chair. Available only to Digital Media Technology majors.
Prerequisites: MED-212 or MED-213
Corequisites: MED-229.

MED-229. Cooperative Work Experience-Media Related Class. 1 Credit.
LECT 1 hr
This course provides a variety of exercises that further develop students’ technical skills, occupational adjustment and career development competencies. Exercises help to develop interpersonal and communication skills and help to ensure a positive cooperative work experience. This course is offered online. Available only Digital Media Technology majors.
Prerequisites: MED-212 or MED-213
Corequisites: MED-228.

MED-230. Media Internship. 3 Credits.
LECT 3 hrs
Practical experience in the media career field is gained working part-time in an approved, supervised media-related environment or on an approved media-related project under the supervision of a media instructor and/or on-the-job supervisor. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair.

MED-240. Advanced Animation. 3 Credits.
LECT 3 hrs
This advanced-level course is a continuation of MED-220 Animation and is designed to expose students to high-end 3-D modeling tools for digital animation, electronic post-production, digital special effects and digital multimedia. This course explores advanced applications in digital compositing, particle systems, Newtonian algorithms, kinemation, dynamation and 3-D characters.
Prerequisites: MED-220
Additional Fees: Course fee applies.

MED-291. Special Topics in Media. 1 Credit.
LECT 3 hrs
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MED-292. Special Topics in Media. 3 Credits.
LECT 1 hr
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MED-293. Special Topics in Media. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MED-294. Advanced Animation. 3 Credits.
LECT 3 hrs
This course is an extension of MED-220 Animation and is designed to expose students to high-end 3-D modeling tools for digital animation, electronic post-production, digital special effects and digital multimedia. This course explores advanced applications in digital compositing, particle systems, Newtonian algorithms, kinemation, dynamation and 3-D characters.
Prerequisites: MED-220
Additional Fees: Course fee applies.

MED-295. Special Topics in Media. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MED-296. Special Topics in Media. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

Business Administration (Transfer Program)

Associate in Science Degree

This program is designed to meet the needs of students who wish to earn a baccalaureate degree, in an area of business administration, upon completing two additional years at a four-year institution. The curriculum prepares students for upper college-level specialization in finance, management, accounting or marketing.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

For more information, visit the Business Administration (http://www.ccm.edu/academics/degrees/businessadmin.aspx) website.

Degrees

AS Business Administration

(P2110)

General Education Foundation
### Certificates of Achievement

- Finance - A Certificate of Achievement within Business Administration (p. 49)
- Small Business Management - A Certificate of Achievement within Business Administration (p. 49)

### Finance

**A Certificate of Achievement within Business Administration**

(P0344)

The 12-credit Certificate of Achievement in Finance, offered through the Business Administration department, includes three required courses: Money and Banking, Principles of Finance and Investment Principles. It also includes one elective course from the following list: Investment Analysis, Personal Finance or International Finance.

The certificate in Finance takes a practical approach to the subject matter, providing broad exposure to the stock and bond markets, money and capital markets, financial management, financial planning and financial analysis while improving financial decision-making abilities. By gathering financial information and analyzing trends, students experience a practical hands-on approach to learning about finances. Students learn about the financial health of a firm, recognize the role and effects of money on the financial system, study investment alternatives offered in the securities market, analyze investment portfolios, learn how to effectively manage personal assets, and understand the role of the global marketplace in business and financial decisions. This combination provides a broad, comprehensive investigation of various aspects of the financial marketplace.

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-211 Money and Banking</td>
<td></td>
</tr>
<tr>
<td>BUS-212 Principles of Finance</td>
<td></td>
</tr>
<tr>
<td>BUS-218 Investment Principles</td>
<td></td>
</tr>
</tbody>
</table>

**Elective Courses**

Students must select one course from the following:

<table>
<thead>
<tr>
<th>Business Core Credits</th>
<th>33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students should consult their academic advisor when selecting this course.</td>
<td></td>
</tr>
</tbody>
</table>

### Small Business Management

**A Certificate of Achievement within Business Administration**

(P0400)

The Small Business Management Certificate of Achievement, offered through the Business Administration department, is a 12-credit certificate program that includes three required courses: Elements of Accounting, Small Business Planning and Finance, and Small Business Operations. It also includes an elective course, either Customer Relations or Advertising. The certificate provides a broad, comprehensive introduction and study of the
essential components of starting and running a small business. It culminates in a capstone course, Small Business Operations that incorporates all aspects of the certificate's learning. The Small Business Management Certificate takes a practical, hands-on approach to small business by providing an up-to-date foundation by exploring current planning, financing, accounting, advertising, customer relations and management concepts.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-240</td>
<td>Small Business Planning and Finance</td>
<td>3</td>
</tr>
<tr>
<td>ACC-105</td>
<td>Computerized Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS-219</td>
<td>Small Business Operations</td>
<td>3</td>
</tr>
<tr>
<td>Elective Courses</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BUS-242</td>
<td>Customer Relations</td>
<td></td>
</tr>
<tr>
<td>MKT-218</td>
<td>Advertising</td>
<td></td>
</tr>
<tr>
<td>MKT-215</td>
<td>Sales Principles and Practices</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

**Faculty**

Maureen Sutton  
Chairperson, Assistant Professor, Business Administration  
MBA, Fairleigh Dickinson University  
B.A., Rutgers University  
CH 204A 973-328-5675 msutton@ccm.edu

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BS, University of Phoenix  
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Jennifer Qvotrup  
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B.A., College of Saint Elizabeth  
CH 204E 973-328-5657 jqvotrup@ccm.edu

**Courses**

**ACC-105. Computerized Accounting. 3 Credits.**  
LECT 3 hrs  
This course is designed to introduce students to a widely used software program used to record and track accounting transactions and that simplifies financial tasks. By using QuickBooks, the students will analyze and record accounting transactions in a computerized environment.

**ACC-108. Accounting for Hospitality. 3 Credits.**  
LECT 3 hrs  
This course is an introduction to basic accounting principles and procedures for the hospitality student. This course integrates the accounting and financial practices of the hospitality industry with GAAP (generally accepted accounting principles). This course will include preparation of financial statements, budgeting, controlling food costs, pricing, and managing accounts payable and accounts receivable.

**ACC-110. Elements of Accounting. 3 Credits.**  
LECT 3 hrs, LAB 1 hr  
This is an introductory accounting course that focuses on accounting for small businesses. Emphasis is placed on recordkeeping from basic journalizing to year-end closing and financial statement preparation. Additionally, the course covers payroll and taxation issues related to small business operations.  
**Prerequisites:** MAT-007 or equivalent.

**ACC-111. Principles of Accounting I - Financial Accounting. 3 Credits.**  
LECT 3 hrs, LAB 1 hr  
Financial accounting is a service activity that functions to collect and communicate useful financial information about economic entities. The course will be concerned with processing accounting information assets and liabilities, accounting theory for corporations and financial statement analysis.  
**Prerequisites:** MAT-016 or equivalent  
**Additional Fees:** Course fee applies.

**ACC-112. Principles of Accounting II - Managerial Accounting. 3 Credits.**  
LECT 3 hrs, LAB 1 hr  
A segment of accounting that deals specifically with how accounting data and other financial information can be used in the management of business, governmental or not-for-profit entities. The course is specifically designed to assist internal management and deals with cost-volume-profit analysis, cost systems, budgeting and performance evaluation for goal congruence and statement analysis designed for future managers.  
**Prerequisites:** ACC-111 minimum grade of C  
**Additional Fees:** Course fee applies.

**ACC-211. Intermediate Accounting I. 3 Credits.**  
LECT 3 hrs  
A study of the complex aspect of financial accounting and reporting for persons outside the firm. The course includes the expanded treatment of generally accepted accounting principles (GAAP) underlying the preparation of financial statements and of cash and temporary investments, receivables, present value concepts, cash flow valuations of assets and inventories, methods of estimating the inventory depreciation and depletion.  
**Prerequisites:** ACC-112.
ACC-212. Intermediate Accounting II. 3 Credits.
LECT 3 hrs
The course includes the study of financial accounting and reporting. Course includes expanded treatment of generally accepted accounting principles (GAAP) as they relate to long-term investments, liabilities (both current and long-term), leases, pensions, income taxes, earnings per share, financial statement analysis and other topics.
Prerequisites: ACC-211.

ACC-213. Tax Procedures. 3 Credits.
LECT 3 hrs
A study of the Internal Revenue Code and application of accounting principles for preparation of federal individual income tax returns. Limited business application.
Prerequisites: ACC-111.

ACC-215. Cost Accounting. 3 Credits.
LECT 3 hrs
This course covers the basic procedures and techniques of accounting for the production and distribution of goods. It provides an explanation of the cost components of manufacturing operations: direct materials, direct labor and factory overhead.
Prerequisites: ACC-112.

ACC-230. Principles of Auditing. 3 Credits.
LECT 3 hrs
The course integrates the most important concepts of auditing as well as certain practical aspects in a logical manner to assist students in understanding audit decision making and evidence accumulation. Coverage includes, but is not limited to, concepts of evidence accumulation; analytical procedures as audit tools; probability and risk and their effect on the audit; application of the auditing process to the sales and collection cycle and other cycles; audit reports and requirements for completion of the audit cycle.
Prerequisites: ACC-212.

ACC-231. Government and Not-For-Profit Accounting. 3 Credits.
LECT 3 hrs
This course involves financial analysis and reporting for government and not-for-profit organizations, including concepts, standards, and procedures designed to accommodate the uniqueness of the not-for-profit environment. The course deals specifically with financial accounting and reporting aspects applicable to (1) state and local governments and other special districts and public authorities; and (2) the Federal government agencies, universities and hospitals.
Prerequisites: ACC-212.

ACC-291. Special Topics in Accounting. 3 Credits.
LECT 3 hrs
This course offers students an opportunity to explore special topics or issues in Accounting. Topics may differ each time the course is offered and may include areas of negotiation or conflict resolution.

ACC-292. Special Topics in Accounting. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in accounting. Topics may differ each time the course is offered. Students should consult the department chairperson for further information.

BUS-112. Introduction to Business. 3 Credits.
LECT 3 hrs
This course introduces both business and non-business majors to various fields of business study. Topics include foundations of business and economic systems, management and leadership styles, entrepreneurship, motivational theory and techniques, personnel and production management, accounting, information systems, business law, union/management relations and global issues. The course prepares students for higher-level business study and explores a variety of major options and career paths.

BUS-119. Business Information Systems and Applications. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course provides an introduction to the various technical tools available to help solve problems in the field of business technology. This is a hands-on laboratory course designed to provide the student with experience calculating Business transactions, Windows Operating System, Microsoft Office packages, such as Word, Excel, PowerPoint, Internet and marketing research tools. Special emphasis is placed on the accounting and other financial information reports using Microsoft Office’s Word, Excel and PowerPoint programs.
Additional Fees: Course fee applies.

BUS-135. Introduction to International Business. 3 Credits.
LECT 3 hrs
This course introduces students to the field of international business and trade. A broad range of topics prepares students for the rapidly evolving global business world and for advanced study in international business. Topics include an overview of international business, the global economy, international business environments, issues related to operating and managing an international business and concepts and theories related to the global marketplace.

BUS-136. Personal Finance. 3 Credits.
LECT 3 hrs
This course provides a practical introduction to personal finance and money management by focusing on realistic ways to effectively manage and protect personal assets, minimize taxes and provide for a secure retirement. Students may design a personal budget and learn to make appropriate decisions with regard to savings, investments, insurance, credit protection and estate planning. Students evaluate the cost of borrowed money, real estate investments, effective use of credit, tax implications and the effects of the economy on personal financial decisions. The use of financial periodicals may be required.
Prerequisites: MAT-016 or equivalent and ENG-025 or equivalent
Additional Fees: Course fee applies.

BUS-201. Human Relations in Business. 3 Credits.
LECT 3 hrs
This course provides a broad perspective dealing with human relations from the viewpoint of the manager. It treats the human aspect as it is encountered in the business organization. The behavior of individuals in interpersonal, intergroup and interorganizational situations as they relate to work is also studied.
BUS-205. Landscape Specifications and Estimating. 3 Credits.
LECT 3 hrs
Required for students in Landscape Management and Design Agribusiness and Turf and Turfgrass Management and recommended for others with an interest in landscape maintenance or landscape design and installation. The course focuses on developing systems for the identification of costs associated with the preparation of landscape estimates and bids. Topics include pricing, budgeting, understanding and writing specifications; contracts and related issues; insurance and accounting applications for landscape businesses; estimating with an emphasis on cost-finding processes; and client and employee relations.

BUS-211. Money and Banking. 3 Credits.
LECT 3 hrs
This course analyzes the organization and operation of our financial system. Included in the study are the money and capital markets, commercial banking and other financial institutions such as commercial finance companies. The relationship between financial and economic activity, including monetary and fiscal policy, is shown.
Prerequisites: MAT-016 or equivalent and ENG-025 or equivalent
Additional Fees: Course fee applies.

BUS-212. Principles of Finance. 3 Credits.
LECT 3 hrs
This course is a study of principles and practices followed in the financial organization and operation of a business organization, including financing new and growing businesses, sources of capital, banking and credit accommodations, and the handling of other financial matters.
Prerequisites: ACC-111 and ENG-025 or equivalent
Additional Fees: Course fee applies.

BUS-213. Business Law I. 3 Credits.
LECT 3 hrs
This course is a basic study of the fundamentals of legal liability, the growth of our legal system, and the legal rights, duties and obligations of the individual. Specifically covered are law and society, contracts, agency and employment. Where applicable, the Uniform Commercial Code is used as the basis for statutory interpretation.

BUS-215. Principles of Management. 3 Credits.
LECT 3 hrs
This course is a study of the basic managerial functions of planning, organizing, staffing, directing and controlling. Emphasis is placed on the theory of management, organization and executive leadership. Case studies of actual business situations present problems requiring executive decisions for solution.
Prerequisites: ENG-111, ENG-112 and BUS-119.

BUS-218. Investment Principles. 3 Credits.
LECT 3 hrs
This course introduces students to basic types of investment alternatives focusing on the mechanics of investing including online investing, researching and interpreting financial information, understanding risk/return tradeoffs, and reviewing investment strategies associated with various stock orders. The course offers a thorough review of the primary and secondary securities markets, securities regulations and ethics, and a general understanding of the impact of the economy and the Federal Reserve on investment decisions. The course objective is to develop students into independently sophisticated investors through a practical hands-on approach. The use of financial periodicals may be required.
Prerequisites: ENG-025 or non-course equivalent and MAT-016 or non-course equivalent
Additional Fees: Course fee applies.

BUS-219. Small Business Operations. 3 Credits.
LECT 3 hrs
This course focuses on all aspects of operating an existing business or starting a new venture, culminating in the preparation and simulated execution of a business plan. Study includes evaluations of both new and existing businesses, financing approaches, forms of ownership, traditional and Internet marketing and advertising, directing, staffing, purchasing, risk mitigation, cash management, tax obligations, bootstrapping techniques, and financial and breakeven evaluation. This is a hands-on pragmatic approach to small business management.

BUS-222. International Finance. 3 Credits.
LECT 3 hrs
International Finance provides a basic understanding of the relationship between the international business environment and the international financial markets. Topics to be covered include: international flow of funds, international capital markets, international monetary system, exchange rate behavior, and financial management of the multinational firm.
Prerequisites: ENG-025 or equivalent
Additional Fees: Course fee applies.

BUS-224. Cooperative Work Experience-Business. 3 Credits.
COOP 3 hrs
This course provides students enrolled in the Business Career curriculum with job-oriented training and practical work experience in a work environment prior to permanent employment. The course may be taken in fulfillment of a business elective in the Business Career curriculum. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their third semester.
Prerequisites: Permission of department chair
Corequisites: BUS-225.

BUS-225. Cooperative Work Experience Business- Related Class. 1 Credit.
LECT 1 hr
A supplement to the cooperative work experience program, this course provides a variety of experiences to further develop students' career development and occupational adjustment. It also develops positive points of view toward human relationships and the responsibilities of both the employee and the employer.
Prerequisites: Permission of department chair
Corequisites: BUS-224.
BUS-226. Internship Work Experience-Business. 3 Credits.
LECT 3 hrs
This course provides students enrolled in the Business curriculum with job oriented training and practical work experience in a non-paid work environment prior to permanent employment. The course may be taken in fulfillment of a business elective. Students desiring to participate in this experience should make their intentions known to the department chair during the prior semester. 
Prerequisites: Permission of department chair
Corequisites: BUS-225.

BUS-240. Small Business Planning and Finance. 3 Credits.
LECT 3 hrs
This course focuses on the planning and financing of small business ventures. Included is the development of a business plan. This includes market analysis and a resulting marketing plan, a comprehensive operations plan and the development of financial projections. Attention also is placed on attracting seed and growth capital from such sources as individuals, family, venture capital, investment banking and commercial banks. Bootstrapping or creative ways for obtaining greater impact of available funds is introduced. The end of the business cycle, business valuation and exit strategies are fully explored. 
Prerequisites: ENG-025 or equivalent and MAT-016 or equivalent.

BUS-242. Customer Relations. 3 Credits.
LECT 3 hrs
This course focuses on customer relations as the measure of present and future business success. It begins with describing how business develops its business strategy on identified customer base. Recognizing the challenge of meeting customer expectations, the course defines customer satisfaction and introduces approaches to move from satisfying the customer to delighting the customer. A comprehensive customer relations process, customer relationship management, is introduced and its role discussed in the electronic business age.

BUS-291. Special Topics in Business. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in business areas of study. Topics may differ each time the course is offered. Students should consult with the Department of Business Administration chair for additional information.

BUS-292. Special Topics in Business. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in business areas of study. Topics may differ each time the course is offered. Students should consult with the Department of Business Administration chair for additional information. Prerequisites may be required dependent on topic of study.
Corequisites: BUS-224.

MKT-113. Principles of Marketing I. 3 Credits.
LECT 3 hrs
This is an introduction to basic principles and practices in marketing. The course provides an overview of the field of marketing in areas of consumer behavior, marketing management and channels of distribution and emphasizes the growth of the marketing concept.

MKT-114. Principles of Marketing II. 3 Credits.
LECT 3 hrs
This course provides students with a usable managerial understanding of consumer behavior. This will help students prepare for careers in marketing management, sales and advertising.
Prerequisites: MKT-113.

MKT-215. Sales Principles and Practices. 3 Credits.
LECT 3 hrs
This course examines the role of professional selling in the American economy. Topics include: building and maintaining relationships with clients, communication skills, ethical and legal issues, the psychology of selling, and techniques of selling and persuasion. Various selling techniques are learned and simulated sales demonstrations are used to apply theories and techniques.
Prerequisites: MKT-113.

MKT-216. Sales Management. 3 Credits.
LECT 3 hrs
This course explores the application of management principles to marketing departments and personnel, training and supervision of personnel, development of promotion plans and the relationship of the marketing department to the total organization.
Prerequisites: MKT-113.

MKT-218. Advertising. 3 Credits.
LECT 3 hrs, LAB 3 hrs
This course provides a basic understanding of the business of advertising. Topics include the economics of advertising, planning and preparation of advertising, selection of media, establishing advertising objectives, coordination of advertising, sales promotion and display, and developing an advertising budget.
Prerequisites: MKT-113 and ENG-025 or equivalent.

MKT-291. Special Topics in Marketing. 3 Credits.
LECT 3 hrs
This course examines selected topics or issues in marketing.
Topics may differ each time the course is offered and may include areas such as retail marketing, negotiation or marketing research.
Students should consult the department chairperson for further information.
Prerequisites: Permission of department chair.

MKT-292. Special Topics in Marketing. 3 Credits.
LECT 3 hrs
This course examines selected topics or issues in marketing.
Topics may differ each time the course is offered and may include areas such as retail marketing, negotiation or marketing research.
Students should consult the department chairperson for further information.
Prerequisites: Permission of department chair.

Business Professional (Career Program)

Associate in Applied Science Degree

This career-oriented curriculum is designed to meet the basic requirements of those who wish to explore the various areas of business. This program may also be used to further the general and specialized skills of those already employed.

The curriculum is not designed with transfer as the desired objective. However, many courses in the program are accepted
by baccalaureate-level colleges. Students in this program will choose business electives according to their area of interest. These areas of interest are organized by the following tracks: Sales/Marketing, Accounting/Finance, Management, Entrepreneurship, and Administrative Support. Graduates have a fundamental knowledge of business principles, procedures and systems, and a broad background in theory and practice.

**Articulation Agreements**

Students should check with the Transfer Office about articulation agreements with this program.

For more information, visit the Business Professional [website](http://www.ccm.edu/academics/degrees/businesscareer.aspx).

**Degrees**

**AAS Business Career**

(P3400)

**General Education Foundation**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ENG-111</td>
<td>English Composition I</td>
</tr>
<tr>
<td>ENG-112</td>
<td>English Composition II</td>
</tr>
<tr>
<td>MAT-120</td>
<td>Mathematics for Liberal Arts</td>
</tr>
<tr>
<td></td>
<td>or MAT-124 Statistics</td>
</tr>
<tr>
<td>Social Science or Humanities</td>
<td>3</td>
</tr>
<tr>
<td>ECO-113</td>
<td>Principles of Economics</td>
</tr>
<tr>
<td>ECO-211</td>
<td>Principles of Economics I Macroeconomics</td>
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</table>

**General Education Electives**

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>COM-109</td>
<td>Speech Fundamentals</td>
</tr>
<tr>
<td>ISA-110</td>
<td>Intercultural Communication</td>
</tr>
<tr>
<td>PSY-113</td>
<td>General Psychology</td>
</tr>
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</table>

**General Education Foundation Credits**

21-22

**Business Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-112</td>
<td>Introduction to Business</td>
</tr>
<tr>
<td>BUS-119</td>
<td>Business Information Systems and Applications</td>
</tr>
<tr>
<td>BUS-213</td>
<td>Business Law I</td>
</tr>
<tr>
<td>BUS-215</td>
<td>Principles of Management</td>
</tr>
<tr>
<td>ACC-105</td>
<td>Computerized Accounting</td>
</tr>
<tr>
<td>BUS-224</td>
<td>Cooperative Work Experience-Business</td>
</tr>
<tr>
<td>BUS-225</td>
<td>Cooperative Work Experience Business-Related Class</td>
</tr>
<tr>
<td>MKT-113</td>
<td>Principles of Marketing I</td>
</tr>
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</table>

**Business Electives by Track**

**Sales/Marketing Track**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MKT-114</td>
<td>Principles of Marketing II</td>
</tr>
<tr>
<td>MKT-215</td>
<td>Sales Principles and Practices</td>
</tr>
<tr>
<td>MKT-218</td>
<td>Advertising</td>
</tr>
<tr>
<td>BUS-242</td>
<td>Customer Relations</td>
</tr>
<tr>
<td>Any elective that begins with BUS or MKT</td>
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</table>

**Accounting/Financial Management**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACC-111</td>
<td>Principles of Accounting I - Financial Accounting</td>
</tr>
<tr>
<td>ACC-112</td>
<td>Principles of Accounting II - Managerial Accounting</td>
</tr>
<tr>
<td>BUS-211</td>
<td>Money and Banking</td>
</tr>
<tr>
<td>BUS-212</td>
<td>Principles of Finance</td>
</tr>
<tr>
<td>ACC-211</td>
<td>Intermediate Accounting I</td>
</tr>
<tr>
<td>or BUS-222</td>
<td>International Finance</td>
</tr>
<tr>
<td>or BUS-218</td>
<td>Investment Principles</td>
</tr>
<tr>
<td>or BUS-136</td>
<td>Personal Finance</td>
</tr>
</tbody>
</table>

**Accounting/Financial Management Credits**

15

**Management**

Design for students interested in careers in retail management, aviation, manufacturing, etc.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-135</td>
<td>Introduction to International Business</td>
</tr>
<tr>
<td>BUS-242</td>
<td>Customer Relations</td>
</tr>
<tr>
<td>9 credits of any elective that begins with ACC, BUS, MKT, AVT course not already taken</td>
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</tr>
</tbody>
</table>

**Management Credits**

15

**Entrepreneurship**

Design for students interested in owning and operating their own business

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-219</td>
<td>Small Business Operations</td>
</tr>
<tr>
<td>BUS-240</td>
<td>Small Business Planning and Finance</td>
</tr>
<tr>
<td>CMP-239</td>
<td>The Internet and Web Page Design</td>
</tr>
<tr>
<td>MKT-215</td>
<td>Sales Principles and Practices</td>
</tr>
<tr>
<td>MKT-218</td>
<td>Advertising</td>
</tr>
<tr>
<td>or BUS-242</td>
<td>Customer Relations</td>
</tr>
</tbody>
</table>

**Entrepreneurship Credits**

15

**Administrative Support**

Design for students interested in a career as an administrative assistant

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MED-110</td>
<td>Multimedia I</td>
</tr>
<tr>
<td>CMP-200</td>
<td>Computer Operating Systems and Utilities</td>
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<tr>
<td>CMP-205</td>
<td>Database Programming (MS Access)</td>
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<tr>
<td>CMP-207</td>
<td>Electronic Spreadsheets (MS Excel)</td>
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<tr>
<td>BUS-242</td>
<td>Customer Relations</td>
</tr>
</tbody>
</table>

**Administrative Support Credits**

15
Faculty
Maureen Sutton  
Chairperson, Assistant Professor, Business Administration  
MBA, Fairleigh Dickinson University  
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Courses

ACC-105. Computerized Accounting. 3 Credits.  
LECT 3 hrs  
This course is designed to introduce students to a widely used software program used to record and track accounting transactions and that simplifies financial tasks. By using QuickBooks, the students will analyze and record accounting transactions in a computerized environment.

ACC-108. Accounting for Hospitality. 3 Credits.  
LECT 3 hrs  
This course is an introduction to basic accounting principles and procedures for the hospitality student. This course integrates the accounting and financial practices of the hospitality industry with GAAP (generally accepted accounting principles). This course will include preparation of financial statements, budgeting, controlling food costs, pricing, and managing accounts payable and accounts receivable.

ACC-110. Elements of Accounting. 3 Credits.  
LECT 3 hrs, LAB 1 hr  
This is an introductory accounting course that focuses on accounting for small businesses. Emphasis is placed on recordkeeping from basic journalizing to year-end closing and financial statement preparation. Additionally, the course covers payroll and taxation issues related to small business operations.  
Prerequisites: MAT-007 or equivalent.

ACC-111. Principles of Accounting I - Financial Accounting. 3 Credits.  
LECT 3 hrs, LAB 1 hr  
Financial accounting is a service activity that functions to collect and communicate useful financial information about economic entities. The course will be concerned with processing accounting information assets and liabilities, accounting theory for corporations and financial statement analysis.  
Prerequisites: MAT-016 or equivalent  
Additional Fees: Course fee applies.

ACC-112. Principles of Accounting II - Managerial Accounting. 3 Credits.  
LECT 3 hrs, LAB 1 hr  
A segment of accounting that deals specifically with how accounting data and other financial information can be used in the management of business, governmental or not-for-profit entities. The course is specifically designed to assist internal management and deals with cost-volume-profit analysis, cost systems, budgeting and performance evaluation for goal congruence and statement analysis designed for future managers.  
Prerequisites: ACC-111 minimum grade of C  
Additional Fees: Course fee applies.

ACC-211. Intermediate Accounting I. 3 Credits.  
LECT 3 hrs  
A study of the complex aspect of financial accounting and reporting for persons outside the firm. The course includes the expanded treatment of generally accepted accounting principles (GAAP) underlying the preparation of financial statements and of cash and temporary investments, receivables, present value concepts, cash flow valuations of assets and inventories, methods of estimating the inventory depreciation and depletion.  
Prerequisites: ACC-211.

ACC-212. Intermediate Accounting II. 3 Credits.  
LECT 3 hrs  
The course includes the study of financial accounting and reporting. Course includes expanded treatment of generally accepted accounting principles (GAAP) as they relate to long-term investments, liabilities (both current and long-term), leases, pensions, income taxes, earnings per share, financial statement analysis and other topics.  
Prerequisites: ACC-112.

ACC-213. Tax Procedures. 3 Credits.  
LECT 3 hrs  
A study of the Internal Revenue Code and application of accounting principles for preparation of federal individual income tax returns. Limited business application.  
Prerequisites: ACC-111.
ACC-215. Cost Accounting. 3 Credits.  
LECT 3 hrs  
This course covers the basic procedures and techniques of accounting for the production and distribution of goods. It provides an explanation of the cost components of manufacturing operations: direct materials, direct labor and factory overhead.  
Prerequisites: ACC-112.  

ACC-230. Principles of Auditing. 3 Credits.  
LECT 3 hrs  
The course integrates the most important concepts of auditing as well as certain practical aspects in a logical manner to assist students in understanding audit decision making and evidence accumulation. Coverage includes, but is not limited to, concepts of evidence accumulation; analytical procedures as audit tools; probability and risk and their effect on the audit; application of the auditing process to the sales and collection cycle and other cycles; audit reports and requirements for completion of the audit cycle.  
Prerequisites: ACC-212.  

ACC-231. Government and Not-For-Profit Accounting. 3 Credits.  
LECT 3 hrs  
This course involves financial analysis and reporting for government and not-for-profit organizations, including concepts, standards, and procedures designed to accommodate the uniqueness of the not-for-profit environment. The course deals specifically with financial accounting and reporting aspects applicable to (1) state and local governments and other special districts and public authorities; and (2) the Federal government agencies, universities and hospitals.  
Prerequisites: ACC-212.  

ACC-291. Special Topics in Accounting. 3 Credits.  
LECT 3 hrs  
This course offers students an opportunity to explore special topics or issues in Accounting. Topics may differ each time the course is offered and may include areas of negotiation or conflict resolution.  

ACC-292. Special Topics in Accounting. 3 Credits.  
LECT 3 hrs  
An examination of selected topics or issues in accounting. Topics may differ each time the course is offered. Students should consult the department chairperson for further information.  

BUS-112. Introduction to Business. 3 Credits.  
LECT 3 hrs  
This course introduces both business and non-business majors to various fields of business study. Topics include foundations of business and economic systems, management and leadership styles, entrepreneurship, motivational theory and techniques, personnel and production management, accounting, information systems, business law, union/management relations and global issues. The course prepares students for higher-level business study and explores a variety of major options and career paths.  

BUS-119. Business Information Systems and Applications. 3 Credits.  
LECT 3 hrs, LAB 1 hr  
This course provides an introduction to the various technical tools available to help solve problems in the field of business technology. This is a hands-on laboratory course designed to provide the student with experience calculating Business transactions, Windows Operating System, Microsoft Office packages, such as Word, Excel, PowerPoint, Internet and marketing research tools. Special emphasis is placed on the accounting and other financial information reports using Microsoft Office's Word, Excel and PowerPoint programs.  
Additional Fees: Course fee applies.  

BUS-135. Introduction to International Business. 3 Credits.  
LECT 3 hrs  
This course introduces students to the field of international business and trade. A broad range of topics prepares students for the rapidly evolving global business world and for advanced study in international business. Topics include an overview of international business, the global economy, international business environments, issues related to operating and managing an international business and concepts and theories related to the global marketplace.  

BUS-136. Personal Finance. 3 Credits.  
LECT 3 hrs  
This course provides a practical introduction to personal finance and money management by focusing on realistic ways to effectively manage and protect personal assets, minimize taxes and provide for a secure retirement. Students may design a personal budget and learn to make appropriate decisions with regard to savings, investments, insurance, credit protection and estate planning. Students evaluate the cost of borrowed money, real estate investments, effective use of credit, tax implications and the effects of the economy on personal financial decisions. The use of financial periodicals may be required.  
Prerequisites: MAT-016 or equivalent and ENG-025 or equivalent. Additional Fees: Course fee applies.  

BUS-201. Human Relations in Business. 3 Credits.  
LECT 3 hrs  
This course provides a broad perspective dealing with human relations from the viewpoint of the manager. It treats the human aspect as it is encountered in the business organization. The behavior of individuals in interpersonal, intergroup and interorganizational situations as they relate to work is also studied.  

BUS-205. Landscape Specifications and Estimating. 3 Credits.  
LECT 3 hrs  
Required for students in Landscape Management and Design Agribusiness and Turf and Turfgrass Management and recommended for others with an interest in landscape maintenance or landscape design and installation. The course focuses on developing systems for the identification of costs associated with the preparation of landscape estimates and bids. Topics include pricing, budgeting, understanding and writing specifications; contracts and related issues; insurance and accounting applications for landscape businesses; estimating with an emphasis on cost-finding processes; and client and employee relations.
BUS-211. Money and Banking. 3 Credits.
LECT 3 hrs
This course analyzes the organization and operation of our financial system. Included in the study are the money and capital markets, commercial banking and other financial institutions such as commercial finance companies. The relationship between financial and economic activity, including monetary and fiscal policy, is shown.
Prerequisites: MAT-016 or equivalent and ENG-025 or equivalanet. Additional Fees: Course fee applies.

BUS-212. Principles of Finance. 3 Credits.
LECT 3 hrs
This course is a study of principles and practices followed in the financial organization and operation of a business organization, including financing new and growing businesses, sources of capital, banking and credit accommodations, and the handling of other financial matters.
Prerequisites: ACC-111 and ENG-025 or equivalent. Additional Fees: Course fee applies.

BUS-213. Business Law I. 3 Credits.
LECT 3 hrs
This course is a basic study of the fundamentals of legal liability, the growth of our legal system, and the legal rights, duties and obligations of the individual. Specifically covered are law and society, contracts, agency and employment. Where applicable, the Uniform Commercial Code is used as the basis for statutory interpretation.

BUS-215. Principles of Management. 3 Credits.
LECT 3 hrs
This course is a study of the basic managerial functions of planning, organizing, staffing, directing and controlling. Emphasis is placed on the theory of management, organization and executive leadership. Case studies of actual business situations present problems requiring executive decisions for solution.
Prerequisites: ENG-111, ENG-112 and BUS-119.

BUS-218. Investment Principles. 3 Credits.
LECT 3 hrs
This course introduces students to basic types of investment alternatives focusing on the mechanics of investing including online investing, researching and interpreting financial information, understanding risk/return tradeoffs, and reviewing investment strategies associated with various stock orders. The course offers a thorough review of the primary and secondary securities markets, securities regulations and ethics, and a general understanding of the impact of the economy and the Federal Reserve on investment decisions. The course objective is to develop students into independently sophisticated investors through a practical hands-on approach. The use of financial periodicals may be required.
Prerequisites: ENG-025 or non-course equivalent and MAT-016 or non-course equivalent. Additional Fees: Course fee applies.

BUS-219. Small Business Operations. 3 Credits.
LECT 3 hrs
This course focuses on all aspects of operating an existing business or starting a new venture, culminating in the preparation and simulated execution of a business plan. Study includes evaluations of both new and existing businesses, financing approaches, forms of ownership, traditional and Internet marketing and advertising, directing, staffing, purchasing, risk mitigation, cash management, tax obligations, bootstrapping techniques, and financial and breakeven evaluation. This is a hands-on pragmatic approach to small business management.

BUS-222. International Finance. 3 Credits.
LECT 3 hrs
International Finance provides a basic understanding of the relationship between the international business environment and the international financial markets. Topics to be covered include: international flow of funds, international capital markets, international monetary system, exchange rate behavior, and financial management of the multinational firm.
Prerequisites: ENG-025 or equivalanet. Additional Fees: Course fee applies.

BUS-224. Cooperative Work Experience-Business. 3 Credits.
COOP 3 hrs
This course provides students enrolled in the Business Career curriculum with job-oriented training and practical work experience in a work environment prior to permanent employment. The course may be taken in fulfillment of a business elective in the Business Career curriculum. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their third semester.
Prerequisites: Permission of department chair. Corequisites: BUS-225.

BUS-225. Cooperative Work Experience Business- Related Class. 1 Credit.
LECT 1 hr
A supplement to the cooperative work experience program, this course provides a variety of experiences to further develop students’ career development and occupational adjustment. It also develops positive points of view toward human relationships and the responsibilities of both the employee and the employer.
Prerequisites: Permission of department chair. Corequisites: BUS-224.

BUS-226. Internship Work Experience-Business. 3 Credits.
COOP 3 hrs
This course provides students enrolled in the Business curriculum with job oriented training and practical work experience in a non-paid work environment prior to permanent employment. The course may be taken in fulfillment of a business elective. Students desiring to participate in this experience should make their intentions known to the department chair during the prior semester.
Prerequisites: Permission of department chair. Corequisites: BUS-225.
**BUS-240. Small Business Planning and Finance. 3 Credits.**
LECT 3 hrs
This course focuses on the planning and financing of small business ventures. Included is the development of a business plan. This includes market analysis and a resulting marketing plan, a comprehensive operations plan and the development of financial projections. Attention also is placed on attracting seed and growth capital from such sources as individuals, family, venture capital, investment banking and commercial banks. Bootstrapping or creative ways for obtaining greater impact of available funds is introduced. The end of the business cycle, business valuation and exit strategies are fully explored.
Prerequisites: ENG-025 or equivalent and MAT-016 or equivalent.

**BUS-242. Customer Relations. 3 Credits.**
LECT 3 hrs
This course focuses on customer relations as the measure of present and future business success. It begins with describing how business develops its business strategy on identified customer base. Recognizing the challenge of meeting customer expectations, the course defines customer satisfaction and introduces approaches to move from satisfying the customer to delighting the customer. A comprehensive customer relations process, customer relationship management, is introduced and its role discussed in the electronic business age.

**BUS-291. Special Topics in Business. 3 Credits.**
LECT 3 hrs
This course is an examination of selected topics or issues in business areas of study. Topics may differ each time the course is offered. Students should consult with the Department of Business Administration chair for additional information.

**BUS-292. Special Topics in Business. 3 Credits.**
LECT 3 hrs
This course is an examination of selected topics or issues in business areas of study. Topics may differ each time the course is offered. Students should consult with the Department of Business Administration chair for additional information. Prerequisites may be required dependent on topic of study.
Corequisites: BUS-224.

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**Chemical Technology**

**Associate in Applied Science Degree**

*Note: Chemical technology students requiring developmental courses in math must complete MAT-016 Intermediate Algebra prior to taking courses in Biology and Chemistry.*

The chemical industry, a major New Jersey employer, is important for the creation and manufacture of such basic items as pharmaceuticals, cosmetic/personal care products, gasoline, plastics, fabrics and foods. Chemical Technology is an ideal program of study for students who are interested in this field and desire a more practical hands-on approach to learning. Students learn to use GC, HPLC, FTIR and other state-of-the-art equipment, as well as modern wet chemical techniques.

Graduates of the Chemical Technology program with an Associate in Applied Science degree have the theoretical and technical expertise to be employed at the technician level in research laboratories, quality control labs, pilot plants, chemical production and environmental-monitoring facilities and testing labs. Graduates can also choose to transfer to a four-year institution for a baccalaureate degree in chemistry or related scientific disciplines. Courses in this program are also ideal for retraining purposes.

The Cooperative Education (co-op) program provides students the opportunity to gain valuable, practical skills working in industry as part of their educational experience.

For more information, visit the [Chemical Technology](http://www.ccm.edu/academics/degrees/chemicaltech.aspx) website.

**Degrees**

- AAS Chemical Technology (p. 58)
- AAS Chemical Technology - Environmental Science Option (p. 59)

**AAS Chemical Technology**

(P3450)

**General Education Foundation**

<table>
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<tr>
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<th>Credits</th>
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<tr>
<td>ENG-111</td>
<td>English Composition I</td>
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<td>ENG-112</td>
<td>English Composition II</td>
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<td>MAT-124</td>
<td>Statistics</td>
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<tr>
<td>BIO-123</td>
<td>Cell Biology (Fall)</td>
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<td>CHM-125</td>
<td>General Chemistry I - Lecture</td>
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<td>General Chemistry I - Laboratory</td>
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<td>CHM-127</td>
<td>General Chemistry II - Lecture</td>
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<td>CHM-219</td>
<td>Quantitative Chemical Analysis (Fall)</td>
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<td>CHM-220</td>
<td>Instrumental Methods of Analysis (Spring)</td>
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<td>CHM-210</td>
<td>Essentials of Organic Chemistry (Summer)</td>
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<tr>
<td>PHY-103</td>
<td>Concepts of Physics</td>
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**Chemical Technology Core**

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<td>PHY-103</td>
<td>Concepts of Physics</td>
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</table>

**Total Credits** 64

Students should consult with their academic advisors when selecting free electives.

Science courses completed by students prior to entering the Chemical Technology program must have been taken within the last seven years. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.
Environmental Science
An Option within Chemical Technology
(P3451)

Note: Environmental Science students requiring developmental courses in math must complete MAT-016 Intermediate Algebra prior to taking courses in Biology and Chemistry.

The Environmental Science option is a two-year degree program designed for students who plan to enter the rapidly growing field of environmental science. The curriculum stresses the interdisciplinary nature of ecological problems and provides students with a wide range of courses necessary to prepare them for the environmental challenges of the 21st century.

Graduates have the theoretical and technical expertise required to enter positions at the technician level in diversified fields such as water pollution control; environmental analysis of water, air and soil; hazardous waste management; site remediation (cleanup); and a variety of other areas. The program also provides several introductory courses which may be transferable to a four-year degree program in environmental science.

General Education Foundation

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<td>English Composition II</td>
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<td>Math-Science-Technology</td>
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<td>Statistics</td>
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<td>Environmental Science Core Credits</td>
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</table>

Total Credits: 64-65

Students should consult with their academic advisors when selecting free electives.

Science courses completed by students prior to entering the Environmental Science option must have been taken within the last seven years. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

Faculty

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Courses

BIO-100. Elements in Biology. 3 Credits.
LECT 3 hrs
A foundation providing necessary skills and concepts needed to pursue the biology major. The course stresses skill development in areas such as communication, classification, inquiry, mathematical measurement, data analysis and report writing. Skills then are applied to the study of the cell cycle and diverse life processes.

Additional Fees: Course fee applies.

BIO-101. Anatomy and Physiology I. 4 Credits.
LECT 3 hrs, LAB 3 hrs
The structure and function of the human organism is studied. Special emphasis is given to interrelationships of organs and organ systems. Cellular morphology and function are included for an appreciation of the adult form. The student is introduced to basic chemistry, the cell, basic tissues, the skeletal, muscular and nervous systems. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.

Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025 and MAT-016

Additional Fees: Course fee applies.

BIO-102. Anatomy and Physiology II. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A continuation of Anatomy and Physiology I. The circulatory, respiratory, digestive, urinary, endocrine and reproductive systems are studied. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.

Prerequisites: BIO-101 (Minimum grade of C)

Additional Fees: Course fee applies.

BIO-116. Animal Control Officer’s Training Course. 3 Credits.
LECT 3 hrs
Preparation for New Jersey State Certification as an Animal Control Officer. Topics include legal authority for animal control (federal, state, local); courtroom procedures; animal behavior, capture and handling; disease recognition, prevention and control; shelter operations; and community relations.

BIO-118. Biomedical Ethics. 3 Credits.
LECT 3 hrs
This course introduces students to major ethical issues in areas of biomedicine in contemporary society. The focal point of the course is a process for ethical reasoning and ethical decision making. Students identify ethical problems, assess information relevant to decisions, identify stakeholders affected by decisions, recognize competing values, consider options, make decisions and realize the consequences of decisions. The process is applied to issues in such fields as genetics, death and dying, reproduction, public policy and medical decision making. This course does not fulfill a laboratory science requirement.

Prerequisites: Placement basis or MAT-016 and ENG-007 or ENG-025 or ENG-022

Additional Fees: Course fee applies.

BIO-121. General Biology I. 4 Credits.
LECT 3 hrs, LAB 3 hrs
An introduction to the biological sciences through a study of concepts basic to the biology science major. Topics include the fundamentals of chemistry, cell structure and function, and the nature of biological molecules, bioenergetics, protein synthesis and photosynthesis. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.

Prerequisites: Placement basis or MAT-016 and ENG-007 or ENG-025 or ENG-022

Additional Fees: Course fee applies.

BIO-122. General Biology II. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A continuation of General Biology I. Topics include homeostasis, animal reproduction, embryonic development, genetics, ecology and evolution. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.

Prerequisites: BIO-121 or BIO-180 (Minimum grade of C)

Additional Fees: Course fee applies.

BIO-123. Cell Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Fall semester only. An introduction to the fundamentals of cellular biology. Topics covered are the nature of biologically important molecules, molecular synthesis, energetics, cellular structure and function, cell reproduction, heredity, and basic laboratory techniques for cellular study. All remedial courses must be completed prior to taking this course.

Prerequisites: Placement basis or MAT-016 and ENG-007 or ENG-025 or ENG-022

Additional Fees: Course fee applies.
BIO-127. Biology of Environmental Concerns. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. A survey of ecological issues from a variety of perspectives. The course provides an awareness of environmental problems, knowledge of cause-and-effect relationships of diverse activities on this planet and a basis for making informed judgments about the potential solutions to environmental problems. Major topics include the roots of our environmental problems, introductory concepts in ecology, human population dynamics and control, food resources and world hunger, renewable and nonrenewable energy resources, mineral resources and solid waste, wild plant and animal resources, water resources, air pollution, water pollution, pesticides and pest control, economics, politics and the environment, world views, and ethics and the environment. This course fulfills the general education laboratory science requirement.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.

BIO-132. Concepts in Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. A basic introduction to the study of biological science. Topics include the hierarchy of organization, life processes, cell theory, human genetics, theories of evolution, biochemistry and some principles of ecology. This course fulfills the general education laboratory science requirement.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.

BIO-133. Human Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. An introduction to the body systems and the factors which affect human physiology. Lectures include the basic anatomy and physiology of the major systems plus discussion topics emphasizing nutrition, exercise, sexuality, genetic engineering and recent advances in biotechnology. This course fulfills the general education laboratory science requirement.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.

BIO-180. General Biology I - Honors. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Fall Semester only. This is an introduction to the biological sciences through a study of principles and concepts basic to the major discipline of biology. Topics include fundamentals of chemistry, cell structure and function, the nature of biological molecules, energetics, synthesis and the morphology and physiology of animals and plants. Dissection is required as part of the laboratory syllabus. Lecture and laboratory use an investigatory approach that emphasizes both written and oral communication skills.
Prerequisites: Placement basis or MAT-016 and ENG-007 or ENG-022 or ENG-025 and permission of department chair or honors advisor
Additional Fees: Course fee applies.

BIO-181. General Biology II - Honors. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Spring Semester only. A continuation of BIO-180 General Biology I Honors. Topics include homeostasis, animal reproduction and embryonic development, genetics, ecology, and evolution. Dissection is required as part of the laboratory syllabus. Lecture and laboratory use an investigatory approach that emphasizes both written and oral communication skills.
Prerequisites: BIO-180 or BIO-121 and permission of honors advisor
Additional Fees: Course fee applies.

BIO-201. Genetics. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Spring Semester only. Provides the student with a broad knowledge of genetics from the molecular to the organismal level. Topics covered include the molecular and Mendelian concepts of heredity and their relationship to cell function, development, population changes and evolution and biotechnology. Laboratory exercises emphasize a variety of techniques and skills used in genetic research and testing.
Prerequisites: BIO-121 and BIO-122 or BIO-180 and BIO-181 (Minimum grade of C required for all prerequisites)
Additional Fees: Course fee applies.

BIO-202. Ecology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Fall Semester only. This course introduces the basic fundamentals of ecology, the study of the interrelationships between organisms and their environment. Topics include an introduction to ecosystem structure and function, abiotic factors in ecosystems, energy flow and mineral cycling, population and evolutionary ecology, community ecology, a comprehensive survey of aquatic and terrestrial ecosystems, and human ecology. Laboratories and field trips are designed to introduce students to techniques used in basic ecological research.
Prerequisites: Minimum grade of C required for either BIO-121 or BIO-180 or LHT-110
Additional Fees: Course fee applies.

BIO-215. Microbiology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A comprehensive study of microorganisms, including viruses, bacteria, fungi, protozoa and algae. Topics covered include microbial anatomy, physiology, genetics, ecology and methods of control. Research methods and modern immunological concepts also are discussed. Laboratory exercises in basic microbiological techniques and the study of living microorganisms are designed to supplement the theory presented.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025 and BIO-101 or BIO-121 or BIO-123 or BIO-180 (minimum grade of C) and CHM-117 or CHM-125 and CHM-126 (minimum grade of C)
Additional Fees: Course fee applies.

BIO-223. Cell and Molecular Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A comprehensive study of biological molecules and their functions. Emphasis will be placed on the mechanism and regulation of macromolecule synthesis. Laboratory exercises will focus on instrumentation and techniques used in biological research.
Prerequisites: BIO-121 or BIO-123 and CHM-125 and CHM-126
Minimum grade of C required for all prerequisites
Additional Fees: Course fee applies.
**BIO-226. Cooperative Work Experience - Biology. 3 Credits.**
LECT 3 hrs
This course provides selected students enrolled in the Biotechnology or Biology Major with job-oriented laboratory training and practical work experience in a paid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chairperson by the end of their second semester. Offered Fall, Spring and Summer, day.
**Prerequisites:** Fourth semester status as a Biotechnology or Biology major and permission of department chair.

**BIO-228. Internship Work Experience - Biology. 3 Credits.**
LECT 3 hrs
This course provides selected students enrolled in the Biotechnology or Biology Major with job-oriented laboratory training and practical work experience in an unpaid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chairperson by the end of their second semester. Offered Fall, Spring and Summer, day.
**Prerequisites:** Fourth semester status as a Biotechnology or Biology major and permission of department chair.

**BIO-233. Independent Study in Biology. 3 Credits.**
LECT 3 hrs
An opportunity for selected students to participate in biological research under close supervision of the biology faculty. Interested students should make their interest known early in the prior semester to the department chair, who will familiarize the students with criteria for selection and the steps to be taken to gain entrance to this course. This course does not fulfill any of the science requirements in biology but is offered as a free elective.
**Prerequisites:** Permission of department chair
**Additional Fees:** Course fee applies.

**BIO-274. Pathophysiology. 3 Credits.**
LECT 3 hrs
Pathophysiology is a course which studies the physiological alterations associated with common disease processes which affect human beings across the lifespan. Common diseases of the major organ systems are covered as well as such general issues as infection, neoplasm, inflammation, fluid and electrolyte imbalance, trauma, and shock.
**Prerequisites:** BIO-101 and BIO-102 and CHM-117 Minimum grade of C required for all prerequisites.

**BIO-295. Special Topics in Biology. 4 Credits.**
LECT 4 hrs
An examination of selected topics or issues in biology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
**Prerequisites:** An introductory course in Biology and permission of department chair
**Additional Fees:** Course fee applies.

**CHM-100. Elements of Chemistry. 3 Credits.**
LECT 3 hrs
A one-semester, introductory 3-credit, non-laboratory course designed for students with little or no background in chemistry. Emphasis is on preparing students for General Chemistry and Introductory Chemistry courses. The course encompasses chemical principles and calculations with a brief review of algebra.
**Prerequisites:** MAT-016 - minimum grade of C required.

**CHM-105. Forensic Science. 4 Credits.**
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. An introduction to the applications of the physical and biological sciences in analyzing and evaluating physical evidence as related to crime and the law.
**Additional Fees:** Course fee applies.

**CHM-117. Introductory Chemistry Lecture. 3 Credits.**
RECI 1 hr, LECT 3 hrs
An introduction to the basic concepts of inorganic, organic and biochemistry. The emphasis is on the relationship of these concepts to physiological chemistry and living systems. All remedial courses listed must be completed prior to taking this course.
**Prerequisites:** Placement basis or MAT-016 (minimum grade of C) and ENG-025 or ENG-022 or ENG-007
**Corequisites:** CHM-118.

**CHM-118. Introductory Chemistry Laboratory. 1 Credit.**
LAB 1 hr
Laboratory experiments illustrate principles studied in CHM-117. Required for Landscape and Horticultural Technology, liberal arts majors and some Allied Health programs.
**Prerequisites:** Placement basis or MAT-016 (minimum grade of C) and ENG-025 or ENG-022 or ENG-007
**Corequisites:** CHM-117
**Additional Fees:** Course fee applies.

**CHM-125. General Chemistry I - Lecture. 3 Credits.**
RECI 1 hr, LECT 3 hrs
A study of the fundamental principles of chemistry and their application to chemical reactions. Topics include the structure of the atom, concepts of matter, mass relationships for pure substances and chemical reactions, solutions, electronic structure, the chemical bond, nuclear reactions and gases. All remedial courses listed must be completed prior to taking this course.
**Prerequisites:** Placement College Level Math test or MAT-110 (minimum grade of C) and Placement basis or ENG-025 or ENG-022 or ENG-007
**Corequisites:** CHM-126.

**CHM-126. General Chemistry I - Laboratory. 1 Credit.**
LAB 3 hrs
Laboratory experiments illustrate principles studied in CHM-125. All remedial courses listed must be completed prior to taking this course.
**Prerequisites:** Placement College Level Math test or MAT-110 (minimum grade of C) and Placement basis or ENG-025 or ENG-022 or ENG-007
**Corequisites:** CHM-125
**Additional Fees:** Course fee applies.

**CHM-127. General Chemistry II - Lecture. 3 Credits.**
RECI 1 hr, LECT 3 hrs
A continuation of General Chemistry I with emphasis on chemical equilibrium and energy changes in chemical reactions. Also included are acids, bases, buffers, chemical thermodynamics, kinetics, qualitative analysis and electrochemistry. All remedial courses listed must be completed prior to taking this course.
**Prerequisites:** CHM-125 (minimum grade of C), CHM-126 and placement basis or ENG-025 or ENG-022 or ENG-007
**Corequisites:** CHM-128.
CHM-128. General Chemistry II - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments illustrate principles studied in CHM-127. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-125 and CHM-126 (minimum grade of C required for both) and placement basis or ENG-007 or ENG-022 or ENG-025
Corequisites: CHM-127
Additional Fees: Course fee applies.

CHM-136. Environmental Regulation. 3 Credits.
LECT 3 hrs
This course is an overview of critical environmental issues encountered by industry from a regulatory perspective. Various federal and New Jersey state regulations pertaining to air, water, hazardous waste and hazardous materials management are investigated. Students acquire knowledge on how industry complies with the diversity of regulatory requirements. Students are exposed to examples of instances where industrial non-compliance with applicable regulations has led to deleterious environmental and occupational health effects. Current issues and their significance to environmental and occupational health are discussed including, Clean Water Act, Clean Air Act, Environmental Cleanup and Responsibility Act (ECRA), Resource Conservation and Recovery Act (RCRA), Occupational Safety and Health Act (OSHA), Toxic Substance Control Act (TSCA), Asbestos, indoor air quality and underground storage tanks.
Prerequisites: BIO-123 and CHM-125.

CHM-204. Principles of Occupational Health and Safety. 3 Credits.
LECT 3 hrs
A survey course providing an overview of industrial hygiene and the roles that the industrial hygiene professional plays in recognizing, evaluating and controlling hazards in the workplace. This course provides an introduction to the qualitative and quantitative issues essential to comprehend occupational safety and health principles. Case studies and hands-on exercises are utilized to stress key concepts.

CHM-210. Essentials of Organic Chemistry. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Summer Semester only. This course is the study of the basic principles of structure, reactivity and nomenclature in organic chemistry. The laboratory develops basic work skills in the types of experiments performed in a typical organic chemistry laboratory with emphasis on the safe handling of laboratory chemicals and the proper presentation of experimental results.
Prerequisites: CHM-117 and CHM-118 or CHM-127 and CHM-128 (minimum grade of C for all prerequisites)
Additional Fees: Course fee applies.

CHM-212. Biochemistry. 4 Credits.
LECT 3 hrs, LAB 3 hrs
An introduction to physiological chemistry. Lectures cover amino acids, proteins, lipids, nucleic acids, carbohydrates, molecular genetics, energetics and metabolic pathways. Lab reinforces concepts covered in lecture. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-117 (minimum grade of C) or CHM-125 (minimum grade of C)
Additional Fees: Course fee applies.

CHM-219. Quantitative Chemical Analysis. 5 Credits.
LECT 3 hrs, LAB 6 hrs
Fall Semester only. Principles of modern quantitative methods in chemistry, including the study of chemical equilibria, solubility, acidity and complex formation. The laboratory work involves practical applications of inorganic and organic analysis including volumetric, gravimetric, chromatographic and instrumental techniques. Emphasis is placed on the statistical treatment of data and report writing. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 (minimum grade of C) or equivalent
Additional Fees: Course fee applies.

CHM-220. Instrumental Methods of Analysis. 5 Credits.
LECT 3 hrs, LAB 6 hrs
Spring Semester only. This survey course covers theory and applications of modern instrumentation utilized to solve problems in chemical analysis. Laboratory work involves hands-on experience utilizing instruments such as gas(GC), liquid(HPLC) and ion chromatography; spectrophotometric methods including visible, ultraviolet, infrared(FTIR) and atomic absorption; ICP and other methods, including ion selective electrode methods; and electrophoretic methods including capillary electrophoresis(HPCE). Emphasis is placed on the comparison of methods, the collection and interpretation of laboratory data, technical report writing and record keeping. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 or equivalent (minimum grade of C)
Additional Fees: Course fee applies.

CHM-228. Cooperative Work Experience - Chemistry. 3 Credits.
COOP 3 hrs
This course provides selected students enrolled in the Chemical Technology or Chemistry programs with job-oriented laboratory training and practical work experience in a paid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chair by the end of their second semester. Offered Fall, Spring and Summer, day.
Prerequisites: Fourth semester status as a Chemical Technology or Chemistry major and permission of department chair.

CHM-229. Internship Work Experience - Chemistry. 3 Credits.
COOP 3 hrs
This course provides selected students enrolled in the Chemical Technology or Chemistry Major with job-oriented laboratory training and practical work experience in an unpaid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chairperson by the end of their second semester. Offered Fall, Spring and Summer, day.
Prerequisites: Fourth semester status as a Chemical Technology or Chemistry major and permission of department chair.
CHM-231. Organic Chemistry I - Lecture. 3 Credits.
LECT 3 hrs
This course is an introduction to the chemistry of carbon compounds. Topics include a study of the fundamental concepts of structure and stereochemistry, physical properties of organic compounds and a functional approach to the interpretation of organic reactions. This course is designed for majors in Biology, Chemistry, Pharmacy, and for students preparing for medical, dental and veterinary schools. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 (minimum grade of C) and CHM-128 (minimum grade of C)
Corequisites: CHM-232.
CHM-232. Organic Chemistry I - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments stress techniques involved in the synthesis and purification of typical organic compounds using both macroscale and microscale techniques. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 (minimum grade of C) and CHM-128 (minimum grade of C)
Corequisites: CHM-231
Additional Fees: Course fee applies.

CHM-233. Organic Chemistry II - Lecture. 3 Credits.
LECT 3 hrs
A continuation of the study of organic compounds with further study of functional groups, reaction mechanisms including nucleophilic substitution and elimination reactions, and infrared and nuclear magnetic resonance spectroscopy. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-231 (minimum grade of C) and CHM-232 (minimum grade of C)
Corequisites: CHM-234.
CHM-234. Organic Chemistry II - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments involve the multi-step synthesis of organic compounds, which illustrate the principles of CHM-233, using macroscale and microscale techniques. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-231 (minimum grade of C) and CHM-232 (minimum grade of C)
Corequisites: CHM-233
Additional Fees: Course fee applies.

CHM-235. Independent Study in Chemistry. 3 Credits.
LECT 3 hrs
This course is an opportunity for selected students to participate in independent research under close supervision of a Chemistry faculty member. Interested students should make their interest known early in the prior semester to the department chair who will detail the criteria for selection.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CHM-295. Special Topics in Chemistry. 4 Credits.
LECT 3 hrs, LAB 3 hrs
An examination of selected topics or issues in chemistry. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Chemistry and permission of department chair
Additional Fees: Course fee applies.

CHM-296. Special Topics in Chemistry. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in chemistry. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Chemistry and permission of department chair.

Communication

Communication majors are exposed to a variety of offerings in the Liberal Arts in addition to other discipline specific courses such as interpersonal communication, public relations, advertising, media production, journalism, and film. Successful completion of the curriculum leads to an Associate in Arts degree.

Students learn communication theory as it relates to the individual, society, culture, and aesthetics, and apply this knowledge to oral assignments, written assignments, and/or digital media projects.

The Associate in Arts degree is designed to prepare students for transfer to four-year colleges and universities as Communication majors or to any of the following professional specializations: journalism, television production, film, speech, new media, public relations, or advertising.

For more information, please visit the Department of Communication (http://www.ccm.edu/academics/divdep/liberalarts/communication/default.aspx) webpage.

Degrees

AA Communication
(P1129)

General Education Foundation

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<td>English Composition II</td>
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Humanities Electives

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**Core Courses**

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<tr>
<td>COM-111 Introduction to Journalism</td>
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<tr>
<td>COM-115 Introduction to Mass Media</td>
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<td>Restricted Electives (select three classes)</td>
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**Core Courses Credits**

18

**Total Credits**

63

1 Students should consult their academic advisors when selecting these courses.

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### Faculty

Dr. Matthew T. Jones  
Chairperson, Department of Communication  
Associate Professor, Communication  
Ph.D., Temple University  
M.A., B.A., William Paterson University  
DH 315  973-328-5466  mjones@ccm.edu

### Courses

**COM-101. Introduction to Communication. 3 Credits.**  
LECT 3 hrs  
Survey of the field of communication within a variety of contexts including: Interpersonal, Group, Organizational, Mass Media, Intercultural and International Communication.  
**Prerequisites:** Placement basis or ENG-025 or ENG-022 or ENG-007.

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**COM-102. Advertising and Society. 3 Credits.**  
LECT 3 hrs  
This is a survey course that follows the advertising industry from the early days of the Industrial Revolution through modern social media campaigns. There will be a strong emphasis on the cultural and societal effects of advertising messages on mass markets. There will also be a focus on advertising as a form of social communication, which has embedded impacts on socio-economic, political, and global communication. Students will acquire skills in media literacy and ethical reasoning with respect to advertising campaigns. By the end of the course students will be able to identify the current challenges to consumers and the advertising industry.  
**Prerequisites:** Placement Basis or ENG-007, ENG-022 or ENG-025.

**COM-103. Introduction to Public Relations. 3 Credits.**  
LECT 3 hrs  
This course is a survey of the principles and practices in public relations. Students gain an understanding of the history, development and globalization of PR, the impact of PR criticism, the techniques and tactics of PR practitioners. They learn the concepts of "publics" and professionalism. Special emphasis is placed on the comprehension of the laws and ethics mandated for the PR industry and the goals and objectives necessary to the future credibility of PR.  
**Prerequisites:** Placement basis or ENG-007, ENG-022 or ENG-025.

**COM-104. Interpersonal Communication. 3 Credits.**  
LECT 3 hrs  
Students in this course discover how to communicate effectively in everyday relationships through the study of both theoretical frameworks and practical application. Topics include self-perception, cultural influences, verbal and nonverbal messages, conflict management, as well as an in-depth look at communication within the family unit, friendships, romantic partners and the workplace.  
**Prerequisites:** Placement basis or ENG-025 or ENG-022 or ENG-007.

**COM-105. Media Literacy. 3 Credits.**  
LECT 3 hrs  
Media Literacy prepares students to better understand the 21st century media environment. Topics covered include media form, media content, media effects and influence, and media industries. There will be a particular focus on developing stronger critical and analytical skills to better use media for personal and professional benefit. We will investigate media through several perspectives with a concentration on how media works and how to better navigate and manage the information we receive.  
**Prerequisites:** Placement basis or ENG-007 or ENG-022 or ENG-007.

**COM-109. Speech Fundamentals. 3 Credits.**  
LECT 3 hrs  
This course introduces the fundamentals of organizing, outlining, and presenting narrative, informative and persuasive speeches. Specific attention is given to each student's verbal and nonverbal delivery in the communication of ideas, as well as to the development of creative abilities, critical insights and listening skills.  
**Prerequisites:** Placement Basis or ENG-007 or ENG-022 or ENG-007.
COM-111. Introduction to Journalism. 3 Credits.
LECT 3 hrs
Instruction and practice in reporting and writing news stories across multimedia platforms. Topics include new media, writing, reporting, interviewing, researching, news judgment, Associated Press style, media ethics and media law. Students utilize computers in the classroom to research topics and complete assignments on deadline. The culmination of the course is an e-portfolio that utilizes a basic content management system and combines written articles with original photography. A one-time commitment of three hours of newspaper production is required.
Prerequisites: Placement Basis or ENG-007 or ENG-022 or ENG-025.

COM-112. Advanced Journalism. 3 Credits.
LECT 3 hrs
Instruction and practice in news reporting, computer-assisted reporting and writing techniques. Specialized topics include profile writing, government meetings, statistics/budgets, police, weather, tragedies, global issues, news conferences, speeches, media ethics and media law. Students utilize computers in the classroom to research topics and complete assignments on deadline. New media is incorporated throughout the semester. A one-time commitment of 6 hours of newspaper production on campus is required.
Prerequisites: COM-111 or permission of department chair.

COM-115. Introduction to Mass Media. 3 Credits.
LECT 3 hrs
Introduction to Mass Media is a survey course focusing on the history and consequences of mass media for the individual, society and culture. Specific areas of emphasis include the historical development of media forms, theories concerning the effects of media, and the evolving future of media. Special attention will also be paid to current events in the media and their social consequences.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025.

COM-120. Broadcast Journalism. 3 Credits.
LECT 3 hrs
Instruction and practice in broadcast reporting, writing and editing. Students utilize traditional broadcast skills within a multimedia environment. Topics include broadcast writing techniques and style, newscast organization, photojournalism, social media, new media, broadcast stories for online journalism, media ethics and media law. Students write broadcast scripts, maintain blogs and produce timed newscasts.
Prerequisites: COM-111
Additional Fees: Course fee applies.

COM-209. Editing and Publication Design. 3 Credits.
LECT 3 hrs
Instruction and practice in copy editing, layout, design, headline writing, photo editing, news evaluation, media ethics and media law. Students utilize computers, Adobe Photoshop and Adobe InDesign to complete assignments, and they help produce the student newspaper.
Prerequisites: COM-111 or permission of department chair
Additional Fees: Course fee applies.
systems analysis and design, data structures and algorithms, advanced math, physics, and animation. Specialized courses in game design, game programming and game production provide students with relevant skills and experience with industry standard tools and techniques. Students create a game design, build game programs using a popular game engine, and, in a capstone course, produce a working game with a team of student developers and artists.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements for these options and visit the New Jersey Transfer (http://www.njtransfer.org) website.

For more information, visit the Department of Information Technologies (http://www.ccm.edu/academics/divdep/BMET/infotech) website.

Degrees

- AAS Computer Information Systems - Game Development Option (p. 67)

Game Development

A Computer Information Systems AAS Degree Option

(P3504)

General Education Foundation

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<td>or ECO-21</td>
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Game Development Core

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<td>Computer Information Systems</td>
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MED Electives

| Game Development Core Credits | 36-37 |
| Total Credits | 60-61 |

Technology-based courses taken by a student at least seven years prior to the time the student applies for graduation may not be applied to a degree or certificate within the Department of Information Technologies.

Certificates of Achievement

- Administrative Support - A Certificate of Achievement within Computer Information Systems (p. 67)
- Information Security - A Certificate of Achievement within Computer Information Systems (p. 68)
- System and Application Software - A Certificate of Achievement within Computer Information Systems (p. 68)
- Web Development - A Certificate of Achievement within Computer Information Systems (p. 68)

The Computer Information Systems Certificates of Achievement are designed for current or future professionals who wish to improve their technical knowledge and skills in computer-related areas. Each certificate includes a balance of theory and hands-on experience. The certificates are designed for full-time and part-time students who are working or plan to work in one of the following areas. It is possible for an individual to complete a certificate in two semesters.

Certificates of Achievement may also be offered on-site to local businesses and can be customized for completion in a shorter time period. Contact the Information Technologies department for additional information at 973-328-5780.

Administrative Support

A Certificate of Achievement within Computer Information Systems

(P0356)

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<td>CMP-205</td>
<td>3</td>
</tr>
<tr>
<td>CMP-239</td>
<td>3</td>
</tr>
<tr>
<td>MED-110</td>
<td>3</td>
</tr>
<tr>
<td>TEL-109</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits

Students should consult their academic advisors when selecting the restricted electives.
### Information Security

**A Certificate of Achievement within Computer Information Systems**

(P0354)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMP-120</td>
<td>Foundations of Information Security</td>
<td>3</td>
</tr>
<tr>
<td>CMP-124</td>
<td>Network Security</td>
<td>3</td>
</tr>
<tr>
<td>CMP-125</td>
<td>Information Security Management Security</td>
<td>3</td>
</tr>
<tr>
<td>Restricted Electives</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Select two of the following:

- CJS-116 Introduction to Criminology
- CJS-121 Criminal Justice System
- CMP-123 Systems Analysis and Design
- CMP-128 Computer Science I
- CMP-160 Digital Forensics I
- CMP-243 Ethical Hacking and Systems Defense
- CMP-261 Digital Forensics II
- CMP-292 Special Topics in Information Technology
- CMP-293 Special Topics in Information Technology II
- PHL-114 Ethics
- TEL-110 Routing I (CISCO)
- TEL-120 Routing II (CISCO)

**Total Credits:** 15

1. Students should consult their academic advisors when selecting these courses.

### System and Application Software

**A Certificate of Achievement within Computer Information Systems**

(P0351)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMP-126</td>
<td>Computer Technology and Applications</td>
<td>4</td>
</tr>
<tr>
<td>CMP-205</td>
<td>Database Programming (MS Access)</td>
<td>3</td>
</tr>
<tr>
<td>CMP-207</td>
<td>Electronic Spreadsheets (MS Excel)</td>
<td>3</td>
</tr>
<tr>
<td>MED-110</td>
<td>Multimedia I</td>
<td>3</td>
</tr>
<tr>
<td>Computer Information Systems or Media Elective</td>
<td></td>
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</tbody>
</table>

**Total Credits:** 16

1. Students should consult their academic advisors when selecting these courses.

### Web Development

**A Certificate of Achievement within Computer Information Systems**

(P0352)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMP-239</td>
<td>The Internet and Web Page Design</td>
<td>3</td>
</tr>
<tr>
<td>CMP-244</td>
<td>Web Design II</td>
<td>3</td>
</tr>
<tr>
<td>CMP-245</td>
<td>Web Design Tools</td>
<td>3</td>
</tr>
<tr>
<td>Restricted Electives</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Select two courses from the following list:

- CMP-120 Foundations of Information Security
- CMP-128 Computer Science I
- CMP-170 Mobile App Design
- CMP-205 Database Programming (MS Access)
- CMP-249 Advanced Web Programming
- MED-110 Multimedia I
- MED-113 Multimedia II
- MED-119 Digital Media Production
- MED-220 Animation
- MED-240 Advanced Animation

**Total Credits:** 15

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Courses

CMP-101. Computer Information Literacy. 1 Credit.
LAB 2 hrs
This general education course provides students with an introduction to basic computer concepts that include learning the fundamentals of Windows, accessing the Internet and using Microsoft Word. Not for Computer Information Systems majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-101, CMP-110, CMP-126, CMP-203 or BUS-119.
Additional Fees: Course fee applies.

CMP-108. Game Design Concepts. 3 Credits.
LECT 3 hrs
This course provides the student with an introduction to fundamental game design concepts. The range of topics includes game worlds and settings, character creation, storytelling, game audio, game art and animation, gameplay and user interface design. In addition, the history of the game industry, social impact and the future of gaming are discussed. Students analyze various games and genres and create their own game design document.
Additional Fees: Course fee applies.

CMP-120. Foundations of Information Security. 3 Credits.
LECT 3 hrs
This course provides a principled introduction to the field of information security. History, characteristics and models of information and computer security are explored. Topics such as risk management, logical and physical security, continuity, cryptography, and architecture are discussed. The National Centers of Academic Excellence in Cyber Defense Education Knowledge Units and the CISSP CBK domains are incorporated into the course content affording the student reinforcement and mastery of information security terminology and concepts.
Additional Fees: Course fee applies.

CMP-123. Systems Analysis and Design. 3 Credits.
LECT 3 hrs
Techniques of object-oriented and structured systems analysis and design are examined in the context of the software development life cycle. Topics include project management, Unified Modeling Language (UML), data flow diagrams, system flow charts, application and user-interface design. Class projects provide students with practice in using CASE tools in the analysis and design of application systems. Students participate in a semester-long team project to design an application.
Prerequisites: CMP-128 and one of the following: CMP-129, CMP-150, CMP-237, CMP-239
Additional Fees: Course fee applies.

CMP-124. Network Security. 3 Credits.
LECT 3 hrs
This course provides an in-depth study of network attack techniques and methods to defend against them. Areas of study include communication security, infrastructure security, cryptography, and operational and organizational security as it relates to network hardware, software and data. Topics include authentication, attacks, virtual private networks, email protection, web security, wireless, firewalls, intrusion detection, cryptography, disaster recovery and computer forensics regarding networked systems. Using a hands-on approach, powerful tools to diagnose and correct security breaches are investigated and manipulated. This course is mapped to the National Centers of Academic Excellence in Cyber Defense Education Knowledge Units and vendor-neutral certification exam.
Additional Fees: Course fee applies.

CMP-125. Information Security Management. 3 Credits.
LECT 3 hrs
This course entails identifying an organization's information assets and the development, documentation and implementation of policies, standards, procedures and guidelines that ensure confidentiality, integrity and availability of those assets. This course, which is mapped to the National Centers of Academic Excellence in Cyber Defense Education Knowledge Units, prepares students to understand the planning, organization and roles of individuals involved in security, to develop security policies, and to utilize management tools to identify threats, classify assets and rate vulnerabilities. A detailed, real-world security plan is developed using customized strategies.
Additional Fees: Course fee applies.

CMP-126. Computer Technology and Applications. 4 Credits.
LECT 3 hrs, LAB 2 hrs
This general education course teaches: (1) basic computer-use concepts such as hardware and peripherals, file organization and management, and operating system use; (2) Internet use, browsers and search engines; (3) software applications including word processing, spreadsheet, electronic slideshow presentations, database use and calendaring; (4) netiquette, ethics and copyright policies; (5) downloading and installing software and plug-ins; (6) communications technologies including email, blogs and Web technologies; (7) personal computer and information security; and (8) career exploration, job search strategies and portfolio development. Students are required to complete a series of laboratory assignments that illustrate skills and use technologies in the areas listed including a cross-applications/technologies project. Students will not receive credit towards graduation for more than one of the following courses: CMP-101, CMP-110, CMP-126, CMP-203 or BUS-119.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007
Additional Fees: Course fee applies.
**CMP-128. Computer Science I. 3 Credits.**
LECT 2 hrs, LAB 2 hrs
In this introductory course, students obtain fundamental computer science knowledge and develop programming skills using an object-oriented approach, incorporating security awareness, human-computer interactions and social responsibility. This course provides students with a basic foundation in computing history, computing careers, computer organization, operating system responsibilities, software development process, algorithm design and analysis, programming paradigms, and human interaction design.

**Prerequisites:** MAT-007 or equivalent

**Additional Fees:** Course fee applies.

**CMP-129. Computer Science II. 3 Credits.**
LECT 2 hrs, LAB 2 hrs
This course is the second in a three-course sequence that provides students with a foundation in Computer Science. Students develop intermediate-level programming skills using an object-oriented approach with an emphasis on software development, fundamental algorithms and data structures, software assurance, and ethical conduct.

**Prerequisites:** CMP-128 or equivalent

**Additional Fees:** Course fee applies.

**CMP-130. Introduction to Information Technology. 3 Credits.**
LECT 2 hrs, LAB 2 hrs
This is the introductory course in the field of study of Information Technology. This course introduces the student to the software and hardware found in today’s computing environment and the basic skills and tools required to install, support and upgrade common information technology used by businesses, organizations and academic institutions. This course helps the student prepare for the CompTIA A+ certification examination. In addition, the basics of network architecture, database management, information security and web infrastructure are covered. At completion the student will be prepared for further study in the curriculum of Information Technology and equipped with the fundamental knowledge required of an IT Professional. The students use popular desktop applications to organize and perform IT laboratory activities.

**Additional Fees:** Course fee applies.

**CMP-135. Computer Concepts with Applications. 3 Credits.**
LECT 2 hrs, LAB 2 hrs
This general education course is designed to provide familiarity with current software for word processing, spreadsheet, presentation and database applications. An introduction to web browsers, computer and information security, social impact of computing, concepts in computer hardware, and application and system software is also included. Students are required to complete a series of laboratory assignments that illustrate skills in using the above software applications. Students must allocate time to complete assignments using the same software (available on campus). Not for Computer Information Systems majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-135, CMP-126 or BUS-119.

**Additional Fees:** Course fee applies.

**CMP-150. Game Programming. 3 Credits.**
LECT 2 hrs, LAB 2 hrs
This course covers fundamental game programming techniques using an industry-standard scripting language. Students learn how to use a popular game engine to build game programs. Topics include sprites, animation, collisions, timers, game state variables, player input, audio, user interface design and storyboarding. Laboratory work includes several game element programming exercises, leading up to a final game project.

**Prerequisites:** CMP-128 or equivalent

**Additional Fees:** Course fee applies.

**CMP-160. Digital Forensics I. 3 Credits.**
LECT 2 hrs, LAB 2 hrs
This course introduces the student to the fundamental concepts of computer forensics. By conducting a detailed examination of data media for structure, file system type, volumes, lost and hidden areas, the student will develop the ability to collect and analyze computer data for digital evidence. An understanding of specific resources and an exploration of software tools available for data recovery and forensic analysis will be conducted in a laboratory setting. Upon completion of this course the student will demonstrate various data recovery techniques as the basis for forensic evaluation.

**Additional Fees:** Course fee applies.

**CMP-170. Mobile App Design. 3 Credits.**
LECT 2 hrs, LAB 2 hrs
This course introduces students to the design and development of mobile applications. Students will learn how to install and use a leading mobile app software development kit, design the user interfaces using different design patterns, create and edit app resources, and design and develop native source code. Students will strengthen their programming skills in user input, variables, operations, decision control structures, methods, lists and arrays. Audio, images, animation and other application controls will be incorporated into apps. Other topics include testing, deployment and publishing apps.

**Prerequisites:** CMP-128

**Additional Fees:** Course fee applies.

**CMP-200. Computer Operating Systems and Utilities. 3 Credits.**
LECT 3 hrs, LAB 1 hr
This is an introductory course in personal computer operating systems. Topics include the features and characteristics of operating system software; installation and configuration including customization, file organization and management; memory and storage management; control of peripheral devices; troubleshooting; networking wizards; and the use of utilities to monitor system performance, backup data and optimize disks. Laboratory assignments provide hands-on opportunities for students to apply the information related in lectures.

**Additional Fees:** Course fee applies.
CMP-205. Database Programming (MS Access). 3 Credits.
LECT 3 hrs, LAB 1 hr
It is recommended that students take CMP-207 Electronic Spreadsheets before taking CMP-205. This course is designed to develop skill in the use of a leading database management system. Topics include the design and maintenance of relational databases and their objects (tables, queries, forms and reports). Also covered is the use of macros to implement procedures. The final portion of the course covers automation techniques by introducing the Visual Basic for Applications programming language and the use of this code to create a user-friendly interface.
Additional Fees: Course fee applies.

CMP-207. Electronic Spreadsheets (MS Excel). 3 Credits.
LECT 3 hrs, LAB 1 hr
It is recommended that students take CMP-207 Electronic Spreadsheets before taking CMP-205. This is a course in problem solving using a popular spreadsheet program. Emphasis is on construction of elementary to moderately complex worksheets; charting worksheet data, database definitions and reporting; and using VBA (Visual Basic for Applications) to construct simple macros.
Additional Fees: Course fee applies.

CMP-209. Introduction to UNIX. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course combines lecture with hands-on training in the UNIX Operating System. Upon successful completion of this course, students are proficient in using the UNIX Operating System commands and utilities. Topics include purpose and functions of an operating system, hierarchical file system, the shell, vi editor, file security, process management, sorting, networking theory and communications, redirection, piping, and an introduction to shell scripts.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-217. Cooperative Work Experience-Information Technologies. 3 Credits.
COOP 3 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent career employment. This course may be taken in fulfillment of the Computer Information Systems elective. Interested students should consult with the department chair. Computer Information Systems majors only
Prerequisites: Permission of department chair

CMP-218. Cooperative Work Experience Information Technologies - Related Class. 1 Credit.
LECT 1 hr
A supplement to the Department of Information Technologies Cooperative Work Experience, this course provides a variety of exercises that further develop the students' technical and communication skills, occupational adjustment, and career planning. This course is offered online. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Corequisites: CMP-217.

CMP-230. Computer Architecture and Assembly Language. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is an introduction to computer architecture and assembly language programming. Topics covered include digital logic and data representation, computer architecture and organization, interfacing and input/output strategies, memory architecture, functional organization, and multiprocessing. Students are exposed to basic assembly language programming techniques in laboratory assignments.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-233. Data Structures and Algorithms. 3 Credits.
LECT 3 hrs, LAB 1 hr
The course includes advanced computer science topics dealing with logical structures of data and the design and analysis of computer algorithms operating on these structures. The course concentrates on data structures such as linked lists, trees, queues, stacks, hash tables and graphs. Algorithms covered include stacks, queues, hash tables, trees, graphs, heaps, sorting and searching. Both iterative and recursive algorithms are explored with analysis of their efficiency. Problems and computer exercises implementing the above structures and techniques are assigned.
Prerequisites: CMP-129 or equivalent and MAT-123 or higher
Additional Fees: Course fee applies.

CMP-235. Advanced UNIX. 3 Credits.
LECT 3 hrs, LAB 1 hr
This is a continuation course in UNIX programming with emphasis on building upon the previously developed skills. Topics include an in-depth coverage of shell scripts, system administration, GUIs, differences and similarities between shells, higher-level programming languages in the UNIX environment, the Internet, sorting, and other advanced topics.
Prerequisites: CMP-209
Additional Fees: Course fee applies.

CMP-237. Visual Basic (VB.Net). 3 Credits.
LECT 3 hrs, LAB 1 hr
This is a fundamental course in object-oriented programming in a Windows environment. Topics include form design, managing controls, handling variables and constants, using decision and loop structures to construct efficient code, handling built-in functions, and simple debugging techniques for detecting errors. Basic fundamentals of classes are introduced.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-239. The Internet and Web Page Design. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is an in-depth study of the Internet and its various services that allows students to appreciate the impact of the Internet in society. Students create World Wide Web home pages using strict Hypertext Markup Language, Cascading Style Sheets (CSS) and XHTML. Other current specifications also are discussed.
Additional Fees: Course fee applies.
CMP-241. Database Programming (Oracle). 3 Credits.
LECT 3 hrs, LAB 1 hr
This course uses the rules and syntax of an "industrial-strength" database programming language that can be used on all types of computers. Topics include relational database aspects, data input and validation, creation and maintenance of files, query, user control center, and application generator. Emphasis is on development of programs related to business database applications.
Prerequisites: CMP-113 or CMP-128 or equivalent or permission of department chair
Additional Fees: Course fee applies.

CMP-243. Ethical Hacking and Systems Defense. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course combines an ethical methodology with the hands-on application of security tools, techniques, and methodologies in performing computer system and network security vulnerability - risk analyses - to better help students secure and defend their systems. Topics to be covered include internal and external penetration tests, risk analysis methodology, and security audits. Students are introduced to common countermeasures that effectively reduce and/or mitigate attacks. This class is designed to help students prepare for professional careers in the information security field and the Certified Ethical Hacker (CEH) certification exam.
Prerequisites: CMP-124
Additional Fees: Course fee applies.

CMP-244. Web Design II. 3 Credits.
LECT 3 hrs, LAB 2 hrs
This course is a continuation of The Internet and Web Page Design with an emphasis on more advanced concepts and techniques. Topics include Cascading Style Sheets, forms, JavaScript and other current scripting languages. Students learn to work with hosting and web server technology. For their final project, students build a website using these techniques.
Prerequisites: CMP-239
Additional Fees: Course fee applies.

CMP-245. Web Design Tools. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Students learn the leading web design and development tools including the Adobe Creative Suite. Instruction and practice in the suite provides seamless integration and a unified user interface across all tools to streamline multimedia and web development. Through hands-on practice, activities and relevant project application, students develop competence in the use of industry-leading development tools.
Prerequisites: CMP-108 or CMP-128 or CMP-239 or MED-110 or GRD-111
Additional Fees: Course fee applies.

CMP-246. Operating Systems. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces students to operating systems and their uses and design concerns. Covered are the roles and responsibilities of operating systems including scheduling, concurrency and process synchronization, memory management, file organization and management, and control of peripheral devices. Security and protection topics are also addressed. Laboratory assignments provide interactive learning experiences which demonstrate operating system concepts using programming, operating system commands and scripting.
Prerequisites: CMP-129
Additional Fees: Course fee applies.

CMP-249. Advanced Web Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This advanced course in Web Development introduces the student to creating interactive and dynamic Web sites using current Web programming. Building on concepts and principles of computer programming and scripting languages, students will interact with Web server technologies and develop front end, advanced professional Web sites with fully functioning back end support.
Prerequisites: CMP-128 and CMP-244
Additional Fees: Course fee applies.

CMP-250. Game Production. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Working in teams, students combine their game design and programming skills to explore the practical challenges of managing the development of games. Industry-standard software and advanced programming are used in this capstone course to develop a functioning game of the highest professional quality. Emphasis is placed on the game design document, storyboarding, the game production process, user interface and game design, interactive storytelling, character development, 3D animation, special effects, audio, the collaborative process, and usability testing.
Prerequisites: CMP-150 or MED-220
Additional Fees: Course fee applies.

CMP-261. Digital Forensics II. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This advanced course in digital forensics will enable the student to understand advanced file system forensics, the theory of forensic procedures, review of identification, imaging, and authentication, review of FAT file system, NTFS and EXT3 file systems, partitioning, Windows' logical analysis, email analysis, and web history analysis conducted in a laboratory setting. Upon completion of this course the student will apply investigative methodology as it applies to data artifacts, including where they are found in computer operating systems, and how they are deployed in digital forensics. The student will perform forensic media acquisition and verification.
Prerequisites: CMP-160
Additional Fees: Course fee applies.

CMP-271. Mobile App Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This second course in a series of mobile app development courses covers advanced design elements and programming constructs. Topics include accessing device resources including the camera, accelerometer, and GPS; utilizing local and networked database services; animation and gaming; accessing background services; file management; designing for multiple devices including wearables; and localization/internationalization and accessibility design. Students will create apps individually and as part of a team and their learning will culminate with the development of a final project that will be of industry-level quality.
Prerequisites: CMP-170
Additional Fees: Course fee applies.
CMP-290. Independent Study in Information Technology. 3 Credits.
LECT 3 hrs
Students, in consultation with the department chair, undertake an in-depth analysis of a selected topic, problem or issue related to information technology or pursue additional computer-related work experience. Students are responsible for developing a statement of goals and strategies, maintaining a weekly log, and preparing a written and oral summary report. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-291. Special Topics in Information Technology. 3 Credits.
LECT 3 hrs, LAB 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-292. Special Topics in Information Technology. 3 Credits.
LECT 3 hrs, LAB 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-293. Special Topics in Information Technology II. 1 Credit.
LECT 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-296. Cooperative Work Experience-Information Technology (45-100 hours). 1 Credit.
COOP 1 hr
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 45-100 hours in duration. The course may be taken in fulfillment of a Computer Information System (CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

CMP-297. Cooperative Work Experience-Information Technology (90-200 hours). 2 Credits.
COOP 2 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 90 to 200 hours in duration. The course may be taken in fulfillment of a Computer Information System (CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

CMP-298. Cooperative Work Experience-Information Technology (135-300 hours). 3 Credits.
COOP 3 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 135 to 300 hours in duration. The course may be taken in fulfillment of a Computer Information System (CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

Computer Science

Associate in Science Degree

The Associate in Science degree in Computer Science prepares students for transfer to a bachelor's-level degree program in Computer Science. Degree requirements are based on national standards. Core Computer Science knowledge and skills are acquired in the following courses: Computer Science I, II and III (Data Structures and Algorithms), Operating Systems, Computer Assembly Language, and Systems Analysis and Design.

Today most career opportunities in Computer Science require a minimum of a bachelor's degree. This is due to not only increased competition for IT jobs on a worldwide basis but also because the demands of an IT position require a solid foundation in several and varied areas of computing, a broad range that simply cannot be completed in two years. The United States Department of Labor estimates that the job growth for computer-related fields is much higher than the average growth rate – a promising outlook for Computer Science students. It projects the job growth rate to be 20 percent from 2008 through 2018. The New Jersey Department of Labor predicts that 6,000 new jobs will be added to the technology sector during this time period. Some examples of positions available to B.S. Computer Science degree graduates include programmer, database manager, game developer, web developer, mobile applications developer, systems engineer, software engineer and systems analyst.

There are numerous opportunities to transfer to a four-year institution and study Computer Science. The following public and private New Jersey colleges and universities offer a bachelor's-level Computer Science degree: The College of New Jersey, Kean University, Montclair State University, New Jersey City University, Ramapo College, Richard Stockton State College, Rowan University, Thomas Edison State College, William Paterson University, New Jersey Institute of Technology, Rutgers University,
Drew University, Fairleigh Dickinson University, Monmouth University, Princeton University, College of Saint Elizabeth, Saint Peter’s College, Seton Hall University and Stevens Institute of Technology.

For more information, visit the Department of Information Technologies (http://www.ccm.edu/academics/divdep/BMET/infotech) website.

Degrees

AS Computer Science

(P2500)

General Education Foundation

Communication

ENG-111  English Composition I  6
ENG-112  English Composition II

Math-Science-Technology

MAT-123  Precalculus  12
MAT-131  Analytic Geometry and Calculus I
MAT-132  Analytic Geometry and Calculus II

Social Science/Diversity

Choose from General Education list (Social Science)  6
Choose from General Education list (Diversity)  1

Humanities

Choose from General Education list (Humanities)  3

General Education

Laboratory Science Sequence

Laboratory Science Sequence

General Education Foundation Credits  35

Computer Science Core

CMP-123  Systems Analysis and Design  3
CMP-128  Computer Science I  3
CMP-129  Computer Science II  3
CMP-230  Computer Architecture and Assembly Language  3
CMP-233  Data Structures and Algorithms  3
CMP-246  Operating Systems  3
CIS Electives  6
MAT-225  Discrete Mathematics  4

Computer Science Core Credits  28

Total Credits  63

1 Students should consult their academic advisors when selecting these courses.

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Courses

CMP-101. Computer Information Literacy. 1 Credit.
LAB 2 hrs
This general education course provides students with an introduction to basic computer concepts that include learning the fundamentals of Windows, accessing the Internet and using Microsoft Word. Not for Computer Information Systems majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-101, CMP-110, CMP-126, CMP-203 or BUS-119.

Additional Fees: Course fee applies.

CMP-108. Game Design Concepts. 3 Credits.
LECT 3 hrs
This course provides the student with an introduction to fundamental game design concepts. The range of topics includes game worlds and settings, character creation, storytelling, game audio, game art and animation, gameplay and user interface design. In addition, the history of the game industry, social impact and the future of gaming are discussed. Students analyze various games and genres and create their own game design document.

Additional Fees: Course fee applies.
CMP-120. Foundations of Information Security. 3 Credits.
LECT 3 hrs
This course provides a principled introduction to the field of information security. History, characteristics and models of information and computer security are explored. Topics such as risk management, logical and physical security, continuity, cryptography, and architecture are discussed. The National Centers of Academic Excellence in Cyber Defense Education Knowledge Units and the CISSP CBK domains are incorporated into the course content affording the student reinforcement and mastery of information security terminology and concepts.

Additional Fees: Course fee applies.

CMP-123. Systems Analysis and Design. 3 Credits.
LECT 3 hrs
Techniques of object-oriented and structured systems analysis and design are examined in the context of the software development life cycle. Topics include project management, Unified Modeling Language (UML) diagrams, data flow diagrams, system flow charts, application and user-interface design. Class projects provide students with practice in using CASE tools in the analysis and design of application systems. Students participate in a semester-long team project to design an application.

Prerequisites: CMP-128 and one of the following: CMP-129, CMP-150, CMP-237, CMP-239

Additional Fees: Course fee applies.

CMP-124. Network Security. 3 Credits.
LECT 3 hrs
This course provides an in-depth study of network attack techniques and methods to defend against them. Areas of study include communication security, infrastructure security, cryptography, and operational and organizational security as it relates to network hardware, software and data. Topics include authentication, attacks, virtual private networks, email protection, web security, wireless, firewalls, intrusion detection, cryptography, disaster recovery and computer forensics regarding networked systems. Using a hands-on approach, powerful tools to diagnose and correct security breaches are investigated and manipulated. This course is mapped to the National Centers of Academic Excellence in Cyber Defense Education Knowledge Units and vendor-neutral certification exam.

Additional Fees: Course fee applies.

CMP-125. Information Security Management. 3 Credits.
LECT 3 hrs
This course entails identifying an organization’s information assets and the development, documentation and implementation of policies, standards, procedures and guidelines that ensure confidentiality, integrity and availability of those assets. This course, which is mapped to the National Centers of Academic Excellence in Cyber Defense Education Knowledge Units, prepares students to understand the planning, organization and roles of individuals involved in security, to develop security policies, and to utilize management tools to identify threats, classify assets and rate vulnerabilities. A detailed, real-world security plan is developed using customized strategies.

Additional Fees: Course fee applies.

CMP-126. Computer Technology and Applications. 4 Credits.
LECT 3 hrs, LAB 2 hrs
This general education course teaches: (1) basic computer-use concepts such as hardware and peripherals, file organization and management, and operating system use; (2) Internet use, browsers and search engines; (3) software applications including word processing, spreadsheet, electronic slideshow presentations, database use and calendaring; (4) netiquette, ethics and copyright policies; (5) downloading and installing software and plug-ins; (6) communications technologies including email, blogs and Web technologies; (7) personal computer and information security; and (8) career exploration, job search strategies and portfolio development. Students are required to complete a series of laboratory assignments that illustrate skills and use technologies in the areas listed including a cross-applications/technologies project. Students will not receive credit towards graduation for more than one of the following courses: CMP-101, CMP-110, CMP-126, CMP-203 or BUS-119.

Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007

Additional Fees: Course fee applies.

CMP-128. Computer Science I. 3 Credits.
LECT 2 hrs, LAB 2 hrs
In this introductory course, students obtain fundamental computer science knowledge and develop programming skills using an object-oriented approach, incorporating security awareness, human-computer interactions and social responsibility. This course provides students with a basic foundation in computing history, computing careers, computer organization, operating system responsibilities, software development process, algorithm design and analysis, programming paradigms, and human interaction design.

Prerequisites: MAT-007 or equivalent

Additional Fees: Course fee applies.

CMP-129. Computer Science II. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course is the second in a three-course sequence that provides students with a foundation in Computer Science. Students develop intermediate-level programming skills using an object-oriented approach with an emphasis on software development, fundamental algorithms and data structures, software assurance, and ethical conduct.

Prerequisites: CMP-128 or equivalent

Additional Fees: Course fee applies.

CMP-130. Introduction to Information Technology. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This is the introductory course in the field of study of Information Technology. This course introduces the student to the software and hardware found in today’s computing environment and the basic skills and tools required to install, support and upgrade common information technology used by businesses, organizations and academic institutions. This course helps the student prepare for the CompTIA A+ certification examination. In addition, the basics of network architecture, database management, information security and web infrastructure are covered. At completion the student will be prepared for further study in the curriculum of Information Technology and equipped with the fundamental knowledge required of an IT Professional. The students use popular desktop applications to organize and perform IT laboratory activities.

Additional Fees: Course fee applies.
CMP-135. Computer Concepts with Applications. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This general education course is designed to provide familiarity with current software for word processing, spreadsheet, presentation and database applications. An introduction to web browsers, computer and information security, social impact of computing, concepts in computer hardware, and application and system software is also included. Students are required to complete a series of laboratory assignments that illustrate skills in using the above software applications. Students must allocate time to complete assignments using the same software (available on campus). Not for Computer Information Systems majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-135, CMP-126 or BUS-119.
Additional Fees: Course fee applies.

CMP-150. Game Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course covers fundamental game programming techniques using an industry-standard scripting language. Students learn how to use a popular game engine to build game programs. Topics include sprites, animation, collisions, timers, game state variables, player input, audio, user interface design and storyboarding. Laboratory work includes several game element programming exercises, leading up to a final game project.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-160. Digital Forensics I. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces the student to the fundamental concepts of computer forensics. By conducting a detailed examination of data media for structure, file system type, volumes, lost and hidden areas, the student will develop the ability to collect and analyze computer data for digital evidence. An understanding of specific resources and an exploration of software tools available for data recovery and forensic analysis will be conducted in a laboratory setting. Upon completion of this course the student will demonstrate various data recovery techniques as the basis for forensic evaluation.
Additional Fees: Course fee applies.

CMP-170. Mobile App Design. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces students to the design and development of mobile applications. Students will learn how to install and use a leading mobile app software development kit, design the user interface using different design patterns, create and edit app resources, and design and develop native source code. Students will strengthen their programming skills in user input, variables, operations, decision control structures, methods, lists and arrays. Audio, images, animation and other application controls will be incorporated into apps. Other topics include testing, deployment and publishing apps.
Prerequisites: CMP-128
Additional Fees: Course fee applies.

CMP-200. Computer Operating Systems and Utilities. 3 Credits.
LECT 3 hrs, LAB 1 hr
This is an introductory course in personal computer operating systems. Topics include the features and characteristics of operating system software; installation and configuration including customization, file organization and management; memory and storage management; control of peripheral devices; troubleshooting; networking wizards; and the use of utilities to monitor system performance, backup data and optimize disks. Laboratory assignments provide hands-on opportunities for students to apply the information related in lectures.
Additional Fees: Course fee applies.

CMP-205. Database Programming (MS Access). 3 Credits.
LECT 3 hrs, LAB 1 hr
It is recommended that students take CMP-207 Electronic Spreadsheets before taking CMP-205. This course is designed to develop skill in the use of a leading database management system. Topics include the design and maintenance of relational databases and their objects (tables, queries, forms and reports). Also covered is the use of macros to implement procedures. The final portion of the course covers automation techniques by introducing the Visual Basic for Applications programming language and the use of this code to create a user-friendly interface.
Additional Fees: Course fee applies.

CMP-207. Electronic Spreadsheets (MS Excel). 3 Credits.
LECT 3 hrs, LAB 1 hr
It is recommended that students take CMP-207 Electronic Spreadsheets before taking CMP-205. This is a course in problem solving using a popular spreadsheet program. Emphasis is on construction of elementary to moderately complex worksheets; charting worksheet data, database definitions and reporting; and using VBA (Visual Basic for Applications) to construct simple macros.
Additional Fees: Course fee applies.

CMP-209. Introduction to UNIX. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course combines lecture with hands-on training in the UNIX Operating System. Upon successful completion of this course, students are proficient in using the UNIX Operating System commands and utilities. Topics include purpose and functions of an operating system, hierarchical file system, the shell, vi editor, file security, process management, sorting, networking theory and communications, redirection, piping, and an introduction to shell scripts.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-217. Cooperative Work Experience-Information Technologies. 3 Credits.
COOP 3 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent career employment. This course may be taken in fulfillment of the Computer Information Systems elective. Interested students should consult with the department chair. Computer Information Systems majors only
Prerequisites: Permission of department chair
CMP-218. Cooperative Work Experience Information Technologies - Related Class. 1 Credit.
LECT 1 hr
A supplement to the Department of Information Technologies Cooperative Work Experience, this course provides a variety of exercises that further develop the students’ technical and communication skills, occupational adjustment, and career planning. This course is offered online. Computer Information Systems majors only. 
Prerequisites: Permission of department chair 
Corequisites: CMP-217.

CMP-230. Computer Architecture and Assembly Language. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is an introduction to computer architecture and assembly language programming. Topics covered include digital logic and data representation, computer architecture and organization, interfacing and input/output strategies, memory architecture, functional organization, and multiprocessing. Students are exposed to basic assembly language programming techniques in laboratory assignments.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-233. Data Structures and Algorithms. 3 Credits.
LECT 3 hrs, LAB 1 hr
The course includes advanced computer science topics dealing with logical structures of data and the design and analysis of computer algorithms operating on these structures. The course concentrates on data structures such as linked lists, trees, queues, stacks, hash tables and graphs. Algorithms covered include stacks, queues, hash tables, trees, graphs, heaps, sorting and searching. Both iterative and recursive algorithms are explored with analysis of their efficiency. Problems and computer exercises implementing the above structures and techniques are assigned.
Prerequisites: CMP-129 or equivalent and MAT-123 or higher
Additional Fees: Course fee applies.

CMP-235. Advanced UNIX. 3 Credits.
LECT 3 hrs, LAB 1 hr
This is a continuation course in UNIX programming with emphasis on building upon the previously developed skills. Topics include an in-depth coverage of shell scripts, system administration, GUIs, differences and similarities between shells, higher-level programming languages in the UNIX environment, the Internet, sorting, and other advanced topics.
Prerequisites: CMP-209
Additional Fees: Course fee applies.

CMP-237. Visual Basic (VB.Net). 3 Credits.
LECT 3 hrs, LAB 1 hr
This is a fundamental course in object-oriented programming in a Windows environment. Topics include form design, managing controls, handling variables and constants, using decision and loop structures to construct efficient code, handling built-in functions, and simple debugging techniques for detecting errors. Basic fundamentals of classes are introduced.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-239. The Internet and Web Page Design. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is an in-depth study of the Internet and its various services that allows students to appreciate the impact of the Internet in society. Students create World Wide Web home pages using strict Hypertext Markup Language, Cascading Style Sheets (CSS) and XHTML. Other current specifications also are discussed.
Additional Fees: Course fee applies.

CMP-241. Database Programming (Oracle). 3 Credits.
LECT 3 hrs, LAB 1 hr
This course uses the rules and syntax of an "industrial-strength" database programming language that can be used on all types of computers. Topics include relational database aspects, data input and validation, creation and maintenance of files, query, user control center, and application generator. Emphasis is on development of programs related to business database applications.
Prerequisites: CMP-113 or CMP-128 or equivalent or permission of department chair
Additional Fees: Course fee applies.

CMP-243. Ethical Hacking and Systems Defense. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course combines an ethical methodology with the hands-on application of security tools, techniques and methodologies in performing computer system and network security vulnerability - risk analyses - to better help students secure and defend their systems. Topics to be covered include internal and external penetration tests, risk analysis methodology, and security audits. Students are introduced to common countermeasures that effectively reduce and/or mitigate attacks. This class is designed to help students prepare for professional careers in the information security field and the Certified Ethical Hacker (CEH) certification exam.
Prerequisites: CMP-124

Additional Fees: Course fee applies.

CMP-244. Web Design II. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is a continuation of The Internet and Web Page Design with an emphasis on more advanced concepts and techniques. Topics include Cascading Style Sheets, forms, JavaScript and other current scripting languages. Students learn to work with hosting and web server technology. For their final project, students build a website using these techniques.
Prerequisites: CMP-239
Additional Fees: Course fee applies.

CMP-245. Web Design Tools. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Students learn the leading web design and development tools including the Adobe Creative Suite. Instruction and practice in the suite provides seamless integration and a unified user interface across all tools to streamline multimedia and web development. Through hands-on practice, activities and relevant project application, students develop competence in the use of industry-leading development tools.
Prerequisites: CMP-108 or CMP-128 or CMP-239 or MED-110 or GRD-111
Additional Fees: Course fee applies.
CMP-246. Operating Systems. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces students to operating systems and their uses and design concerns. Covered are the roles and responsibilities of operating systems including scheduling, concurrency and process synchronization, memory management, file organization and management, and control of peripheral devices. Security and protection topics are also addressed. Laboratory assignments provide interactive learning experiences which demonstrate operating system concepts using programming, operating system commands and scripting.
Prerequisites: CMP-129
Additional Fees: Course fee applies.

CMP-249. Advanced Web Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This advanced course in Web Development introduces the student to creating interactive and dynamic Web sites using current Web programming. Building on concepts and principles of computer programming and scripting languages, students will interact with Web server technologies and develop front end, advanced professional Web sites with fully functioning back end support.
Prerequisites: CMP-128 and CMP-244
Additional Fees: Course fee applies.

CMP-250. Game Production. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Working in teams, students combine their game design and programming skills to explore the practical challenges of managing the development of games. Industry-standard software and advanced programming are used in this capstone course to develop a functioning game of the highest professional quality. Emphasis is placed on the game design document, storyboarding, the game production process, user interface and game design, interactive storytelling, character development, 3D animation, special effects, audio, the collaborative process, and usability testing.
Prerequisites: CMP-150 or MED-220
Additional Fees: Course fee applies.

CMP-261. Digital Forensics II. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This advanced course in digital forensics will enable the student to understand advanced file system forensics, the theory of forensic procedures, review of identification, imaging, and authentication, review of FAT file system, NTFS and EXT3 file systems, partitioning, Window's logical analysis, email analysis, and web history analysis conducted in a laboratory setting. Upon completion of this course the student will apply investigative methodology as it applies to data artifacts, including where they are found in computer operating systems, and how they are deployed in digital forensics. The student will perform forensic media acquisition and verification.
Prerequisites: CMP-160
Additional Fees: Course fee applies.

CMP-271. Mobile App Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This second course in a series of mobile app development courses covers advanced design elements and programming constructs. Topics include accessing device resources including the camera, accelerometer, and GPS; utilizing local and networked database services; animation and gaming; accessing background services; file management; designing for multiple devices including wearables; and localization/internationalization and accessibility design. Students will create apps individually and as part of a team and their learning will culminate with the development of a final project that will be of industry-level quality.
Prerequisites: CMP-170
Additional Fees: Course fee applies.

CMP-290. Independent Study in Information Technology. 3 Credits.
LECT 3 hrs
Students, in consultation with the department chair, undertake an in-depth analysis of a selected topic, problem or issue related to information technology or pursue additional computer-related work experience. Students are responsible for developing a statement of goals and strategies, maintaining a weekly log, and preparing a written and oral summary report. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-291. Special Topics in Information Technology. 3 Credits.
LECT 3 hrs, LAB 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-292. Special Topics in Information Technology. 3 Credits.
LECT 3 hrs, LAB 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course(s) is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-293. Special Topics in Information Technology II. 1 Credit.
LECT 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.
CMP-296. Cooperative Work Experience-Information Technology (45-100 hours). 1 Credit.
COOP 1 hr
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 45-100 hours in duration. The course may be taken in fulfillment of a Computer Information System (CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

CMP-297. Cooperative Work Experience-Information Technology (90-200 hours). 2 Credits.
COOP 2 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 90 to 200 hours in duration. The course may be taken in fulfillment of a Computer Information System (CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

CMP-298. Cooperative Work Experience-Information Technology (135-300 hours). 3 Credits.
COOP 3 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 135 to 300 hours in duration. The course may be taken in fulfillment of a Computer Information System (CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

Criminal Justice

Associate in Science Degree

This curriculum of study is designed for students seeking further education in criminal justice, as well as those needing career-oriented skills and knowledge. The ability of police, judicial and correctional agencies to control and respond to crime is inherently related to the human interaction skills of those who staff the system. This curriculum provides course work to guide the student in understanding the complex issues related to the role of law.

For more information, visit the Criminal Justice (http://www.ccm.edu/academics/degrees/criminaljustice.aspx) website.

Degrees

AS Criminal Justice
(P2950)

- AS Criminal Justice - Track 1: Law
- AS Criminal Justice - Track 2: Homeland Security
- AS Criminal Justice - Track 3: Juvenile Issues
- AS Criminal Justice - Track 4: Criminal Investigations
- AS Criminal Justice - Track 5: Arson
- AS Criminal Justice - Track 6: Corrections
- AS Criminal Justice - Track 7: Computer Forensics
- AS Criminal Justice - Track 8: Police

General Education Foundation

Communication
9
ENG-111 English Composition I
ENG-112 English Composition II
COM-109 Speech Fundamentals

Math-Science-Technology
10-11
CMP-135 Computer Concepts with Applications
CHM-105 Forensic Science

Mathematics Elective

Social Science
6
SOC-120 Principles of Sociology
PSY-113 General Psychology

Humanities
3
Choose from General Education course list

General Education Elective
3
Choose from General Education course list

General Education Foundation Credits
31-32

Criminal Justice Core

CJS-121 Criminal Justice System
3
CJS-116 Introduction to Criminology
3
CJS-213 Police and the Community
3
CJS-221 Criminal Law and Procedure
3
SOC-222 Deviant Behavior
3
HIS-203 History of Minorities in U.S.
3
SOC-214 Cultural Diversity in America - the Sociology of Ethnic and Minority Groups
3

Criminal Justice Elective
9
Criminal Justice Core Credits
30

Total Credits
61-62

Law

Along with the Course List in the AS Criminal Justice program, students interested in this track choose the following courses.

POL-270 or POL-222 Civil Liberties-Basic Rights and Freedom
Constitutional Law
3
CJS-120 Jurisprudence: The Philosophy of Law
3
POL-111 American Government
3

Homeland Security

Along with the Course List in the AS Criminal Justice program, students interested in this track choose the following courses.

CJS-126 Introduction to Emergency Management
3
CJS-127 Introduction to Homeland Security
3
CJS-231 Domestic and International Terrorism
3
Juvenile Issues
Along with the Course List in the AS Criminal Justice program, students interested in this track choose the following courses.

CJS-214 Juvenile Delinquency 3
PSY-214 Adolescent Psychology 3
CJS-215 Investigative Function 3

Criminal Investigations
Along with the Course List in the AS Criminal Justice program, students interested in this track choose the following courses.

CJS-214 Juvenile Delinquency 3
CJS-215 Investigative Function 3
PHO-115 Photography I 3

Arson
Along with the Course List in the AS Criminal Justice program, students interested in this track choose the following courses.

FST-204 Fire Protection, Building Construction 3
FST-205 Fire Investigation 3
CJS-215 Investigative Function 3

Corrections
Along with the Course List in the AS Criminal Justice program, students interested in this track choose the following courses.

CJS-131 Introduction to Corrections 3
POL-270 Civil Liberties-Basic Rights and Freedom 3
CJS-225 Probation and Parole 3

Computer Forensics
Along with the Course List in the AS Criminal Justice program, students interested in this track choose the following courses.

CMP-160 Digital Forensics I 3
CJS-215 Investigative Function 3
CMP-125 Information Security Management 3

Police
Along with the Course List in the AS Criminal Justice program, students interested in this track choose the following courses.

CJS-110 Introduction to Policing 3
CJS-224 Introduction to Police Operations See Note 3
or CJS-228 Public Safety Internship/Coop
Department Permission is needed for students seeking to substitute an internship for CJS-224
ISA-110 Intercultural Communication 3

Faculty
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Courses
CJS-110. Introduction to Policing. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course will provide an overview of policing, both from an historical and contemporary perspective. This will include an introduction to police organizations and operations, police culture and ethics, as well as providing relevant information about police hiring practices. Community relations, minorities in policing, and the law are also incorporated. It includes an element of health education training, including such topics as stress, nutrition, and physical fitness. This portion will include physical fitness activities that are intended to prepare the student for the physical training portion of the police academy recruit training program.
Prerequisites: CJS-116 and CJS-121.

CJS-115. Introduction to Security. 3 Credits.
LECT 3 hrs
The historical, philosophical and legal basis of security. The role of security and the security individual in modern society; the concept of professionalism; and the survey of the administrative, personnel and physical aspects of the security field.

CJS-116. Introduction to Criminology. 3 Credits.
LECT 3 hrs
The study of crime, crime statistics, theories of crime causation, crime typologies, the impact of crime, limits of criminal law, and society's reactions to criminal behavior.

CJS-120. Jurisprudence: The Philosophy of Law. 3 Credits.
LECT 3 hrs
Explores the principles upon which law is based. The course seeks to define, categorize and relate those principles to each other and ascertain not what the law is, but rather why it is, and its capacities and limits.

CJS-121. Criminal Justice System. 3 Credits.
LECT 3 hrs
A study of the overall system of criminal justice from its early historical development to its evolution within the United States. Identification of various sub-enforcement, courts and corrections; their role expectations and systems and components - law interrelationships; and basic premises of crime, punishment and rehabilitation.
CJS-122. Classics of Criminology. 3 Credits.
LECT 3 hrs
The goal of this course is to gain an intellectual understanding of criminology by reviewing its progress in the past 20 years. It presents the causes of crime and the effect of crime on society, victims and criminals. A review of the literature is accomplished by investigating sociological, psychological and biological theories of crime.

CJS-126. Introduction to Emergency Management. 3 Credits.
LECT 3 hrs
This course examines the necessity for Emergency Management. It covers the evolution of Emergency Management in the United States. The course covers an introduction to Disaster Preparedness, Response and Recovery. Employment in the Emergency Management Field is also discussed. The course also examines types of disasters that may be experienced.

CJS-127. Introduction to Homeland Security. 3 Credits.
LECT 3 hrs
This course examines the necessity for Homeland Security. It covers the development of the Department of Homeland Security (DHS) including its organization and function. The course covers an introduction to Disaster Preparedness, Response and Recovery. This course also gives a brief overview of International and Domestic Terrorism, and examines the future of Homeland Security.

CJS-131. Introduction to Corrections. 3 Credits.
LECT 3 hrs
An introduction and overview of fundamental process, trends and practices of probation, institutional treatment, parole and contemporary community-based correctional programs. Included is a review of the history and philosophy of corrections, with emphasis on the constitutional rights of offenders.

CJS-213. Police and the Community. 3 Credits.
LECT 3 hrs
This course focuses on the importance of and strategies for positive police-community interactions and addresses the internal and external communities the police serve. The interdisciplinary approach of the course draws data and discussions from a wide range of disciplines and gives students a well-rounded perspective to help them better recognize the importance of, appreciate, and practice positive police-community relations.

CJS-214. Juvenile Delinquency. 3 Credits.
LECT 3 hrs
A review of the historical reasons for the establishment of juvenile courts in the United States, an examination of the juvenile justice process, and an introduction to the functions of the various components of the system. Sociological concepts and theory of the adolescent subculture are explored. Delinquency prevention aspects, as well as treatment methodologies, are included.

CJS-215. Investigative Function. 3 Credits.
LECT 3 hrs
Fundamentals of reconstructing a chronological sequence of events as to if, when and how a crime was committed. This includes searching, collecting, preserving, evaluating and cross-comparing physical and oral evidence within the framework of accepted procedural and constitutional laws. Procedures using proven scientific methods and analysis to meet the ideal standards of an investigation to resolve the issue, identify the offenders and professionally present the findings in court are included.

CJS-221. Criminal Law and Procedure. 3 Credits.
LECT 3 hrs
This course consists of a fundamental overview of the historical development and philosophy of law including definitions, classifications, and Constitutional origins. Additional topics are case law, methodology, and the concept of law as a social force; a study of the rules of evidence with emphasis upon the nature of evidence, burden of proof, confessions, admissions and witnesses, as well as a consideration of judicial procedures and the application of legal concepts to the justice process.
Prerequisites: CJS-121.

CJS-222. Concepts of Criminal Law. 3 Credits.
LECT 3 hrs
Historical development and philosophy of law including definitions, classifications and Constitutional origins. Also covered are case law, methodology and the concept of law as a social force.

CJS-223. Criminal Evidence and Procedure. 3 Credits.
LECT 3 hrs
A study of the rules of evidence with emphasis upon the nature of evidence, burden of proof, confessions, admissions and witnesses. Included are a consideration of judicial procedures and the application of legal concepts to the justice process.

CJS-224. Introduction to Police Operations. 3 Credits.
LECT 3 hrs
This course provides the student with an opportunity to observe and interact with the fundamentals of police operations. The student is provided with a basis for resolving everyday operational dilemmas from a proactive and reactive perspective. The course emphasizes the need for officers to think critically and to be creative as they interact with citizens in their communities.
Prerequisites: CJS-121.

CJS-225. Probation and Parole. 3 Credits.
LECT 3 hrs
This course examines the history of the fields of probation and parole, detailing how it moved from a focus on treatment/rehabilitation and the indeterminate sentence, toward a model based on control/law enforcement and the determinate sentence. The course will discuss how the historical changes affected the roles and responsibilities of probation and parole officers. Additional, students will explore the use of cognitive behavior therapy and motivation interviewing, "broken windows"/community-based supervision, and the importance of evidence-based practice.
Prerequisites: CJS-121.

CJS-228. Public Safety Internship/Coop. 3 Credits.
COOP 3 hrs
This course provides students with an opportunity to obtain practical, real world experience in the field of public safety. On-site mentors supervise the student throughout their field experience and department faculty serve as the student's advisors. Criminal Justice or Fire Science majors; permission of the department, 2.0 GPA or better and majority of core requirements completed.
Prerequisites: Permission of department chair.
CJS-231. Domestic and International Terrorism. 3 Credits.
LECT 3 hrs
This course offers an in-depth examination of both Domestic and International Terrorism. Topics include; the history and definitions of terrorism, the motivation behind terrorism, how terrorists fund and plan their operations. Portions of the course will address preparedness and response to terrorism. The course will conclude with current and future issues of terrorism.
Prerequisites: CJS-121 or CJS-127.

CJS-291. Special Topics in Criminal Justice. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in criminal justice. Topics differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Criminal Justice.

CJS-292. Special Topics in Criminal Justice. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in criminal justice. Topics differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Criminal Justice.

Culinary Arts and Science

Associate in Applied Science Degree

This degree program addresses the need for more diverse opportunities in the field of culinary arts. Students learn how to cook professionally in a production kitchen and also have the opportunity to explore specialized interests such as food styling, food science and other studies of the culinary arts. The program’s curriculum is based on a solid foundation of classical and modern American cuisine but also provides students with the opportunity to build their own career interests as they learn how to prepare and serve food in a safe manner.

Transfer opportunities are available for students who wish to complete a more advanced degree in Hospitality Management, Culinary Arts or other related studies.

For more information, visit the Culinary Arts and Science (http://www.ccm.edu/academics/degrees/culinarydegree.aspx) website.

Please visit the Hospitality Management (http://catalog.ccm.edu/credit/areasofstudy/hospitality) catalog page for information on that program.

Degrees

AAS Culinary Arts and Science
(P3425)

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<tbody>
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Choose from General Education Course List

| General Education Foundation Credits | 20-21 |

<table>
<thead>
<tr>
<th>Specialized Culinary Core</th>
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<tbody>
<tr>
<td>HOS-100 Serv-Safe Food Handling</td>
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<tr>
<td>HOS-101 Introduction to Food</td>
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<tr>
<td>HOS-102 Food Management</td>
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<td>HOS-103 Food Production</td>
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<td>HOS-105 Food Science and Nutrition</td>
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<tr>
<td>HOS-106 Success in Hospitality</td>
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<td>HOS-117 Introduction to Baking</td>
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<td>HOS-118 Introduction to the Hospitality Industry</td>
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<td>HOS-121 Advanced Baking</td>
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<td>HOS-210 Dining Room Management</td>
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<td>HOS-211 Human Resource Management in the Hospitality Industry</td>
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<td>HOS-213 Food and Beverage Purchasing and Cost Controls</td>
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<td>HOS-233 Food as Art</td>
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<td>HOS-235 Restaurant Operations</td>
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Choose four (4) credits from below electives | 4 |

| HOS-123 International Cuisines |   |
| HOS-126 American Regional Cuisine |   |
| HOS-127 Italian Cuisine |   |
| HOS-128 Chinese Cuisine |   |
| HOS-129 Latin Cuisines |   |
| Hospitality Co-op/Internship (Select One of the Following Courses) | 1-3 |
| HOS-221 Cooperative Work Experience Hospitality (45-100 Hrs) |   |
| HOS-222 Cooperative Work Experience Hospitality (90-200 Hours) |   |
| HOS-223 Cooperative Work Experience Hospitality (135-300 Hours) |   |
| HOS-227 Internship Work Experience Hospitality (45-100 Hrs) |   |
| HOS-228 Internship Work Experience Hospitality (90-200 Hours) |   |
| HOS-229 Internship Work Experience Hospitality (135-300 Hours) |   |

Specialized Culinary Core Credits | 43-45 |

Total Credits | 63-66 |

Certificates of Achievement

Culinary Arts

A Culinary Arts and Science Certificate of Achievement
(P0420)

This Certificate of Achievement is designed to fulfill the needs of students working in the hospitality field either as preliminary training to the career or as continuing education within the industry. The
coursework provides basic skills and training in the many areas of food safety, production and management.

Culinary Arts – Certificate and Options

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
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<td>HOS-100</td>
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<td>HOS-101</td>
<td>Introduction to Food</td>
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Select one of the following options: 6

Culinary Arts

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<tr>
<td>HOS-102</td>
<td>Food Management</td>
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<tr>
<td>HOS-103</td>
<td>Food Production</td>
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Baking Arts

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<td>HOS-117</td>
<td>Introduction to Baking</td>
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<tr>
<td>HOS-121</td>
<td>Advanced Baking</td>
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World Cuisines

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<tr>
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<td>International Cuisines</td>
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<tr>
<td>HOS-126</td>
<td>American Regional Cuisine</td>
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<td>HOS-127</td>
<td>Italian Cuisine</td>
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<tr>
<td>HOS-128</td>
<td>Chinese Cuisine</td>
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<tr>
<td>HOS-129</td>
<td>Latin Cuisines</td>
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Choose six credits from these courses:

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<tbody>
<tr>
<td>HOS-121</td>
<td>Advanced Baking</td>
</tr>
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</table>


Total Credits 10

Courses

HOS-100. Serv-Safe Food Handling. 1 Credit.
LECT 1 hr
Students are introduced to the basic principles and guidelines of sanitation and food safety in a professional food service environment. Topics include foodborne illness, microbiology, food allergens and facility sanitation. This course provides the benchmark to begin work in a safe food production environment. Included in the course is the opportunity to receive one NRAEF Certificate (Serv-Safe Food Handling) towards the ManageFirst Certification.

HOS-101. Introduction to Food. 3 Credits.
LECT 2 hrs, LAB 2 hrs
The modern kitchen offers a multitude of opportunities to explore the world of food. From the equipment available to the bounty of fresh and processed foods that can be obtained and prepared by both the novice and the more experienced cook, this course presents an introduction to the culinary arts. While the topics are basic, the course is also a foundation to more advanced studies in food. Additional Fees: Course fee applies.

HOS-102. Food Management. 3 Credits.
LECT 3 hrs
The management of food and related costs in the professional environment is an underlying factor throughout the hospitality industry. This course provides the framework from which to examine any organization and understand the principles by which they operate and manage food production. Included in the course is the opportunity to receive one NRAEF certificate in Controlling Costs towards the ManageFirst Certification.

HOS-103. Food Production. 3 Credits.
LECT 2 hrs, LAB 2 hrs
The production of food in the professional environment is a demanding and time-consuming process which requires great skill. This course provides the framework from which to examine any organization and understand the principles and processes by which they prepare and manage food production. Included in the course is the opportunity to receive one NRAEF Certificate in Food Production towards the ManageFirst Certification.

Prerequisites: HOS-101 or equivalent
Corequisites: HOS-101 or equivalent
Additional Fees: Course fee applies.

HOS-105. Food Science and Nutrition. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course covers the role of nutrition in food and health and the impact nutrition has on the food service industry. Students learn basic nutrition concepts and discuss current findings and controversies. Topics include foods, labels, recipes and menus for nutritional benefits, and plan diets. In laboratory sessions, students apply their knowledge of nutritional concepts to make healthier food. Included in the course is the opportunity to receive one NRAEF Certificate (Nutrition) toward the ManageFirst Certification.

Prerequisites: HOS-101 or equivalent
Corequisites: HOS-101 or equivalent
Additional Fees: Course fee applies.

HOS-106. Success in Hospitality. 1 Credit.
LECT 1 hr
This course is designed to offer first-year students in Hospitality a comprehensive approach to success at CCM and in future career endeavors in the Hospitality Industry. An introduction to academic responsibility and personal growth will lead to thoughtful consideration of career goals. The planning, defining and organizing for success will be addressed on an individual basis in relation to the educational and career goals at CCM and in the future.

HOS-111. Conversational Spanish in Hospitality. 1 Credit.
LAB 2 hrs
Topics covered in this course focus on the importance of building a welcoming work environment and encouraging diversity with a Spanish employee. The hospitality industry includes hotels, restaurants, banquet halls, hospitals, schools, office buildings, government buildings, cruise ships and operate in both the private and public sectors. The positions found in these establishments range from top-management to entry-level. Many of the positions are filled by Spanish-speaking workers who have the skills to fulfill the job requirements; however, many do not speak English. The industry is recognizing this communication barrier among their employees, and the purpose of this class is to help the student become better acquainted with the Spanish language in the hospitality industry focusing on vocabulary and grammar.
HOS-117. Introduction to Baking. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This is an introductory course in baking. This class introduces the student to the fundamental principles within a bakeshop and pastry kitchen. The student learns the basic baking ingredients and how they are used; weights, measurements, equipment and importance of accuracy; and basic procedure common to bakery formulas. Student create and bake breads, quick breads, muffins and assorted pies.

Additional Fees: Course fee applies.

HOS-118. Introduction to the Hospitality Industry. 3 Credits.
LECT 3 hrs
A survey course of the hospitality industry which provides students with an overview of the role of management within the profession. Fundamentals of lodging management including luxury, convention, all-suite, gaming and resort hotels, and food service management, including restaurants, catering, and institutional and business food service are studied. In addition, travel and tourism, recreation and leisure management (theme parks, clubs and public parks), meeting and event sales, planning and management, senior living services and support infrastructure, and casino and gaming management, as the balance of the eight areas which comprise the main business segments of the hospitality industry, are studied. Basic concepts of ownership, franchising, management, human resources, marketing, cost control, facilities management, service and career opportunities are examined.

HOS-120. Hotel/Hospitality Management. 3 Credits.
LECT 3 hrs
This course provides Hospitality Management students and aspiring hotel management professionals within the industry strong conceptual management underpinnings while addressing the unique requirements of lodging managers. Students are taken on a department-by-department tour of a full-service hotel. The organization and operation of lodging properties are analyzed from the perspective of the front office manager. This course combines discussions of hotel departmental managerial responsibilities, roles and practices with information directly relevant to careers in lodging management. Students learn about the procedures effective managers use to ensure their hotels and, thus, their own ultimate success.

HOS-121. Advanced Baking. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course is a continuation of the baking methods and formulas presented in Introduction to Baking. Students prepare a variety of cakes and icings and learn to apply a variety of decorating styles and techniques. In addition, students create advanced yeast bread, pies, tarts, mousses and chocolates. Emphasis is also placed on dessert plating and presentation which will be covered during the combined lecture and laboratory classes.

Prerequisites: HOS-117

Additional Fees: Course fee applies.

HOS-123. International Cuisines. 3 Credits.
LECT 2 hrs, LAB 2 hrs
The study of the world of food and the cuisines of different cultures is one of the growing trends in the United States. Our modern culture brings together a multitude of different possibilities in the kitchen and is a fascinating and wide-ranging study of both practice and theory. This class will prepare menu items from around the world to delight the mind and expand the individuals cooking experience in a production kitchen.

Additional Fees: Course fee applies.

HOS-126. American Regional Cuisine. 1 Credit.
LAB 2 hrs
American Regional Cuisine celebrates the diversity, distinction and delectable essences of American cooking. Organized by region, these recipes are drawn from every part of the menu, offering a range of complete meals for each culinary style.

Additional Fees: Course fee applies.

HOS-127. Italian Cuisine. 1 Credit.
LAB 2 hrs
From savory soups to sweet desserts, students study Italian cooking in the same manner as a typical menu. Recipes are drawn from every part of the meal and offer a wide range of culinary styles. The course provides a fascinating introduction to the widely diverse cuisine of Italy.

Additional Fees: Course fee applies.

HOS-128. Chinese Cuisine. 1 Credit.
LAB 2 hrs
Chinese cooking is one of the world's oldest continuous culinary traditions, developed over the course of 4,000 years. A subject of profound importance for countless generations of Chinese philosophers, scholars, poets and ordinary people, the selection, preparation and consumption of food is much more than a matter of sustenance in Chinese tradition. This course examines several of these factors while preparing and sampling traditional Chinese dishes.

Additional Fees: Course fee applies.

HOS-129. Latin Cuisines. 1 Credit.
LAB 2 hrs
Latin Cuisines investigates the origins of modern Iberian, Caribbean, Central, and South American cooking and develops the student knowledge of these areas. The many similarities are only a starting point for the incredible diversity that is modern Latin Cuisine. The class will produce full Latin menus based on different periods and areas of the global community.

Additional Fees: Course fee applies.

HOS-201. Marketing and Event Planning. 3 Credits.
LECT 3 hrs
The field of event planning is one of the most exciting and dynamic aspects of the hospitality industry. In order to be successful, the marketing of not just the business but also the individual is of primary importance. This course offers the opportunity to experience actual event planning while also studying menu, restaurant and personal marketing in relation to the hospitality industry.
HOS-210. Dining Room Management. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Practical training in the operations and practices of a modern dining room. Students will learn the techniques needed to work and succeed as a management professional in the dining environment. The importance of customer service will culminate with the operation of a theoretical restaurant and individual catering experiences as Dining Room staff and management.
Prerequisites: HOS-102
Additional Fees: Course fee applies.
HOS-211. Human Resource Management in the Hospitality Industry. 3 Credits.
LECT 3 hrs
This course applies human resource management principles to the hotel and restaurant industry. Topics covered include recruitment, training, motivation, job descriptions and alternative personnel policies. The course emphasizes the vital role of the diversity within the industry. Students will consider human resources in the context of a complete operating business. Included in the course is the opportunity to receive one NRAEF Certificate in Human Resources towards the ManageFirst Certification.
HOS-213. Food and Beverage Purchasing and Cost Controls. 3 Credits.
LECT 3 hrs
A more advanced course dealing with the concepts of selection and procurement in the hospitality industry. Special emphasis is given to food cost, the purchasing function, procurement and inventory controls. In addition, forecasting, budgeting, cash management, and profit and loss statements also are studied. Included in the course is the opportunity to receive one NRAEF certificate (Inventory and Purchasing) towards the ManageFirst Certification.
Prerequisites: HOS-102
Corequisites: HOS-102.
HOS-215. Bar and Beverage Service Management. 3 Credits.
LECT 3 hrs
A comprehensive study of food and beverage managerial principles, with an emphasis on alcoholic beverages. The manufacture, distribution, control procedures, legal aspects, integrity issues and the responsible service of alcoholic beverages are studied. Students gain product knowledge of distilled spirits, wines and beers, including an examination of contemporary non-alcoholic beverage alternatives. The opportunity for two NRAEF certificates is included in the course (Serv-Safe Alchohol and Bar & Beverage Management).
HOS-221. Cooperative Work Experience Hospitality (45-100 Hours). 1 Credit.
COOP 1 hr
This course provides students enrolled in the Hospitality programs with job-oriented training and practical work experience in a work environment prior to permanent employment amounting to between 45 and 100 hours in duration. The course may be taken in fulfillment of a requirement or as an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: Permission of department chair
Corequisites: HOS-224.
HOS-222. Cooperative Work Experience Hospitality (90-200 Hours). 2 Credits.
COOP 2 hrs
This course provides students enrolled in the Hospitality programs with job-oriented training and practical work experience in a work environment prior to permanent employment amounting to between 90 and 200 hours in duration. The course may be taken in fulfillment of a requirement or as an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: Permission of department chair
Corequisites: HOS-224.
HOS-223. Cooperative Work Experience Hospitality (135-300 Hours). 3 Credits.
COOP 3 hrs
This course provides students enrolled in the Hospitality programs with job-oriented training and practical work experience in a work environment prior to permanent employment amounting to between 135-300 hours in duration. The course may be taken in fulfillment of a requirement or an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: Permission of department chair.
HOS-227. Internship Work Experience Hospitality (45-100 Hrs). 1 Credit.
LECT 1 hr
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in an unpaid work environment prior to permanent employment and amounting to between 45 and 100 hours in duration. The course may be taken in fulfillment of a requirement or an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: HOS-106 and permission of department chair.
HOS-228. Internship Work Experience Hospitality (90-200 Hours). 2 Credits.
LECT 2 hrs
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in an unpaid work environment prior to permanent employment and amounting to between 90 and 200 hours in duration. The course may be taken in fulfillment of a requirement or an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: HOS-106 and permission of department chair.
HOS-229. Internship Work Experience Hospitality (135-300 Hours). 3 Credits.
LECT 3 hrs
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in an unpaid work environment prior to permanent employment and amounting to between 135 and 300 hours in duration. The course may be taken in fulfillment of requirement or an elective in the Hospitality curriculum. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: HOS-106 and permission of department chair.

HOS-232. Principles of Travel and Tourism. 3 Credits.
LECT 3 hrs
Principles of travel and tourism offer Hospitality Management majors, other students, and aspiring travel and tourism professionals a comprehensive overview of the principles, practices and philosophies of this interdisciplinary segment of the hospitality industry. Major concepts, including the economics, history, career opportunities, global perspective, worldwide organizations, modes of travel and related services, providers and destination pursuits, are studied.

HOS-233. Food as Art. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces students to the art of food styling, food photography, garde manger and cake decoration. Topics covered include how to prepare, arrange, preserve food photo shoot, techniques on how to prepare pâtés, terrines and fresh cheese. This course covers the art and science of cake preparation, assembly and decoration. Students have the opportunity to create a portfolio of work.
Prerequisites: HOS-100, HOS-101, HOS-102
Additional Fees: Course fee applies.

HOS-234. Meeting and Event Sales, Planning, and Management. 3 Credits.
LECT 3 hrs
Meeting and Event Sales, Planning and Management offers Hospitality Management majors, other students and aspiring professionals in this discipline an in-depth study of generally accepted principles and practices in this segment of the hospitality industry. Career opportunities, corporate meeting planning, catering organization and administration, and other various types of meetings and events are examined.

HOS-235. Restaurant Operations. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course is the culmination of the student studies in Restaurant Management. The class will develop and market a restaurant concept that will be used to serve the CCM public during the semester. The operations and organization of the restaurant will be managed by the students as an experiential learning module of their overall studies in the course. One certificate from NRAEF (Food and Beverage Management) will be offered for certification.
Prerequisites: HOS-100 HOS-210
Additional Fees: Course fee applies.

HOS-239. Independent Study-Hospitality Industry. 3 Credits.
LECT 3 hrs
This course is an independent work/study designed for the student on a topic that is selected in accordance with academic standards and dependent upon department chair approval.
Prerequisites: Permission of department chair.

HOS-240. Hotel Operations. 3 Credits.
LECT 3 hrs
In the modern Hospitality Industry managers and hotel executives must plan for a variety of business conditions that are constantly changing and developing. This course offers students the opportunity to operate a theoretical hotel property while studying the diverse elements of an ever changing environment. This course is a capstone for the Hospitality Management Program and should be taken in the last semester of studies at CCM.

Prerequisites: HOS-120.

Dance

Associate in Fine Art Degree, Dance Option

The Associate in Fine Arts (AFA) degree focuses on developing an understanding of the specific art disciplines of dance through the intensive study of technique, history, theory and hands-on approaches in studio work and/or performance.

The AFA degree is designed to provide students with the competencies necessary to achieve seamless articulation into a Bachelor of Fine Arts program. The program focuses on intensive technical training and artistic development, with emphasis on dance.

Articulation Agreements
Students should check with the Transfer Office about articulation agreements with this program.

Degrees

AFA Dance
(P4170)

General Education Foundation

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Dance Core
DAN-137 Ballet I 2
DAN-138 Ballet II 2
DAN-211 Intermediate Ballet 3
DAN-212 Advanced Ballet 3
DAN-134 Dance History 3
DAN-135 Dance Theater Workshop 1
DAN-136 Dance Theatre Workshop II 1
DAN-220 Dance Theatre Workshop III 1
DAN-222 Dance Theatre Workshop IV 1
DAN-141 Modern Dance I 2
DAN-142 Modern Dance II 2
DAN-216 Intermediate Modern Dance 3
DAN-217 Advanced Modern Dance 3
DAN-224 Choreography I 3
DAN-226 Choreography II 3
HES-211 Kinesiology 3
HED Elective 2-3
Dance Core Elective 38-39

Total Credits 63-66

Faculty
Marielaine R. Mammon
Chairperson, Music, Dance and Performing Arts
Professor, Music
M.A., B.A., The College of New Jersey
MTC 202 973-328-5434 mammon@ccm.edu

Courses

DAN-111. Introduction to Dance. 1 Credit.
LAB 2 hrs
This course is for the student with little or no movement experience and is designed as an introduction to dance as an art form. Foundational techniques of ballet, modern and jazz dance are taught with specific attention to developing awareness of proper anatomical alignment. Dance history, terminology and injury prevention are also integrated into the coursework. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.

Additional Fees: Course fee applies.

DAN-112. Dance Appreciation. 3 Credits.
LECT 3 hrs
This course is designed for any student wishing to gain knowledge of the contemporary dance world and its relation to the other arts. Personalities, companies, productions, etc. are explored in the mediums of ballet, modern and musical theatre. Present and future trends in the dance world are emphasized through lectures, videos and live concerts. This is a non-movement lecture course; written assignments and exams are given and attendance at concerts is required.

DAN-117. Introduction to Ballet. 1 Credit.
LAB 2 hrs
This course is for the student with little or no movement experience and is designed to develop the foundational technique of classical ballet. Specific attention is given to proper execution of barre exercises, anatomical alignment and stretching, and strengthening of specific muscle groups. Formal body positions, spatial directions and classical ballet terminology are taught. Discussion of ballet companies, significant ballet personalities and injury prevention are also integrated into the coursework. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.

Additional Fees: Course fee applies.

DAN-125. Jazz I. 1 Credit.
LAB 2 hrs
This course is for the student at a beginning experience level and is designed to introduce the jazz dance genre. Specific attention is given to exploring rhythms, body isolations and stylistic movements specific to jazz dance. The techniques of ballet and modern dance are integrated into the coursework and anatomical alignment is stressed for the purpose of injury prevention. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.

Additional Fees: Course fee applies.

DAN-126. Jazz II. 1 Credit.
LAB 2 hrs
This course is for the student at an intermediate experience level and is a continuation of Jazz I. More advanced movements including greater intricacy and faster rhythms are taught. Students synthesize these movements into choreographed jazz dance sequences. Specific attention is given to the development of style and theatricality. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.

Prerequisites: DAN-125 or permission of department chair

Additional Fees: Course fee applies.

DAN-130. Tap Dance I. 1 Credit.
LAB 2 hrs
This course is for students at a beginning experience level and is designed to introduce the tap dance genre. Specific attention is given to developing the skills necessary to articulately produce rhythmic sounds with the feet as well as the specific body carriage that accommodates rhythmic footwork. Classes include basic warm-up exercises and combinations along with lecture, demonstrations and videos. Students spend additional time in the studio to satisfy course time requirements. (Students need to provide their own tap shoes.) This course is open to non-dance majors as well as dance majors.

Additional Fees: Course fee applies.

DAN-134. Dance History. 3 Credits.
LECT 3 hrs
This course follows the historical development of dance from the movement of prehistoric humans to the theatrical dancing of the 21st century. Videos and examples of dance styles are used to exemplify the different periods of dance development. Written examinations, research papers, projects and attendance at dance concerts are required.

Additional Fees: Course fee applies.
DAN-135. Dance Theater Workshop. 1 Credit.
LAB 2 hrs
Dance Majors only. This course is designed for the student interested in dance production. The course involves publicity work, costuming, design, audits, rehearsals and possible performance. Practical experience is gained by participating in concerts at County College of Morris, on stage and/or backstage. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

DAN-136. Dance Theatre Workshop II. 1 Credit.
LAB 2 hrs
This class develops the student as a performer, choreographer and/or backstage production artist. It is a continuation of Dance Theatre Workshop I and serves as a vehicle for active participation in the County College of Morris Dance Theatre. Students earn credit by contributing to the productions through publicity work, budgeting, ticketing, programming, backstage lighting work and/or performing and presenting original student works. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-135, Dance majors only
Additional Fees: Course fee applies.

DAN-137. Ballet I. 2 Credits.
LAB 4 hrs
This course is for the student at a beginning experience level and is designed to develop the technical physical skills necessary for classical ballet. Specific attention is given to proper execution of barre and center exercises, anatomical alignment, and stretching and strengthening of specific muscle groups. Pirouettes, allegro jumping, transitional steps and ports de bras are taught. Discussion of ballet companies, significant ballet personalities and injury prevention are also integrated into the coursework. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

DAN-138. Ballet II. 2 Credits.
LAB 4 hrs
This course is for the student at a low intermediate level and is a continuation of Ballet I. It is designed to more fully develop the skills necessary for classical ballet. Continued emphasis is given to pirouettes, petit and grand allegro jumping as well as utilizing transitional steps in longer enchainment. Discussion of ballet companies, significant ballet personalities and injury prevention are also integrated into the coursework. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.
Prerequisites: DAN-137 or permission of department chair
Additional Fees: Course fee applies.

DAN-141. Modern Dance I. 2 Credits.
LAB 4 hrs
This course is for the student at a beginning experience level and is designed to develop the technical physical skills necessary for modern dance. The emphasis is on developing the body as an articulate instrument for expressing contemporary art through dance. Specific attention is given to the movements of the spine, arms and legs while maintaining anatomical alignment. Stationary floor exercises, movement phrases across the floor and movement improvisation are given. Discussion of modern dance companies, significant modern dance personalities and injury prevention are also integrated into the coursework. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.
Additional Fees: Course fee applies.

DAN-142. Modern Dance II. 2 Credits.
LAB 4 hrs
This course is for the student at a low intermediate experience level and is a continuation of Modern Dance I. Emphasis is on creative explorations of movement already learned. Specific attention is given to more advanced use of the spine and development of core muscle strength. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.
Prerequisites: DAN-141 or permission of department chair
Additional Fees: Course fee applies.

DAN-146. Dance for Musical Theatre. 1 Credit.
LAB 2 hrs
This course is ideal for any student interested in Broadway theater. This course gives students a movement base for auditions, performance and choreography covering musical styles ranging from the 1920s through the millennium. Students earn credit by participating in concerts at County College of Morris, on stage and/or backstage. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.
Additional Fees: Course fee applies.

DAN-211. Intermediate Ballet. 3 Credits.
LAB 6 hrs
This course is for the student at the intermediate experience level and designed to continue the development of technical physical skills necessary for classical ballet. It builds upon the technical proficiencies achieved in Ballet I and II. Specific attention is given to more advanced footwork in allegro jumping, sustained movement in adagio exercises and more advanced pirouettes. Emphasis is given to developing style, theatrical quality and proper anatomical alignment. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-138 or permission of department chair
Additional Fees: Course fee applies.
DAN-212. Advanced Ballet. 3 Credits.
LAB 6 hrs
This course is for the student at the advanced experience level and is a continuation of Intermediate Ballet. Specific attention is given to developing performance quality and audition techniques. This course is recommended for those students wishing to transfer into a four-year degree program in dance or those seeking a career in dance performance or instruction. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-211 or permission of department chair
Additional Fees: Course fee applies.

DAN-216. Intermediate Modern Dance. 3 Credits.
LAB 6 hrs
This course is for the student at the intermediate experience level and is designed to continue the development of the technical physical skills necessary for modern dance. It builds upon the technical proficiencies achieved in Modern I and II. Emphasis is on creative movement and choreography, intricate combinations and movement for the stage. New techniques of contemporary artists are discussed and explored, with emphasis on technical mastery. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-142 or permission of department chair
Additional Fees: Course fee applies.

DAN-217. Advanced Modern Dance. 3 Credits.
LAB 6 hrs
This course is for the student at the advanced experience level and is a continuation of Intermediate Modern Dance. Specific attention is given to developing the dancing body in intricate combinations of creative movement and choreography. Emphasis is on performance quality and audition techniques. This course is recommended for those students wishing to transfer into a four-year degree program in dance or those seeking a career in dance performance or instruction. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-216 or permission of department chair
Additional Fees: Course fee applies.

DAN-220. Dance Theatre Workshop III. 1 Credit.
LAB 2 hrs
This class continues to develop the student as a performer, choreographer and/or backstage production artist. It is a continuation of Dance Theatre Workshop II and serves as a vehicle for active participation in the County College of Morris Dance Theatre. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-136 - Dance Majors Only
Additional Fees: Course fee applies.

DAN-222. Dance Theatre Workshop IV. 1 Credit.
LAB 2 hrs
This class is the culmination of the dance student's participation in the County College of Morris Dance Theatre productions and a continuation of work done in Dance Theatre Workshop III. All aspects of dance production are covered with special emphasis on stage lighting. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-220 - Dance majors only
Additional Fees: Course fee applies.

DAN-224. Choreography I. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course focuses on both individual and group creativity of new movement phrases using improvisation and other choreographic tools leading to actual compositions by the students. Movement and written assignments are given and student and professional choreography are viewed. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-141
Additional Fees: Course fee applies.

DAN-226. Choreography II. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course continues to explore elements of creative dance learned in Choreography I. Musical interpretation, narrative, prop studies, etc. are stressed. Completed movement phrases leading to actual choreographed dances are developed and considered for the stage. Costuming, lighting and preparation for actual presentation are emphasized. Movement and written assignments, with a final presentation, are required. Students spend additional time in a laboratory setting as part of the course.
Prerequisites: DAN-224
Additional Fees: Course fee applies.

DAN-230. Dance Internship. 1 Credit.
LAB 2 hrs
Dance Majors only. This course enables the student to complete on- or off-campus work/study in the dance field related to the student's goals as a dance major. Experience is gained in the dance field workforce as a dancer, choreographer, instructor or pre-approved dance program off-campus or dance administrative work on or off campus. The work experience is documented by the student and overseen by the professor. Recommendations are given to prospective employers by the faculty observer. This class should be taken in the student's final semester.
Prerequisites: Permission of department chair.

Design
Associate in Fine Art Degree, Design Option
The Associate in Fine Arts (AFA) degree focuses on developing an understanding of the specific art discipline of design through the intensive study of technique, history, theory and hands-on approaches in studio work and/or performance.

The AFA degree is designed to provide students with the competencies necessary to achieve seamless articulation into a Bachelor of Fine Arts program. The program focuses on intensive technical training and creative development in design.

Articulation Agreements
Students should check with the Transfer Office about articulation agreements with this program.

Degrees
• Architecture: (p. 90) A Track within the AFA Design Option
• Fashion Design: (p. 90) A Track within the AFA Design Option
• Fashion Merchandising: (p. 90) A Track within the AFA Design Option
• Industrial Design: (p. 91) A Track within the AFA Design Option
• Interior Design: (p. 91) A Track within the AFA Design Option

AFA Design

(P4141)

The Design program offers preparatory studies in the fields of applied design: interior design, fashion design, fashion merchandising, architecture and industrial design. Students obtain a solid foundation in the visual arts and intermediate studies that focus on developing an understanding of design principles through the study of history, design theory and hands-on studio courses.

Project work explores various media applicable to a wide range of design professions. The program awards an Associate in Fine Arts (AFA) degree and is designed to transfer to four-year colleges as the first two years of a liberal arts baccalaureate. Design graduates major in industrial design, interior design, architecture, fashion design, fashion merchandising, design education (teaching design) or other design disciplines.

Architecture

A Track within Design

General Education Foundation

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General Education Foundation Credits 23-24

Design/Architecture Core

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Design/Architecture Core Credits 40

Total Credits 63-64

Fashion Design

A Track within Design

General Education Foundation

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General Education Foundation Credits 22-23

Design/Fashion Design Core

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Design/Fashion Design Core Credits 42

Total Credits 64-65

Fashion Merchandising

A Track within Design

General Education Foundation

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Design/Architecture Core Credits 40

Total Credits 63-64
General Education Foundation Credits 22-23

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Total Credits 64-65

Industrial Design
A Track within Design

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Communication 6
ENG-111 English Composition I
ENG-112 English Composition II
Math-Science-Technology 7-8
MAT-110 College Algebra
Laboratory Science Elective
Technology
Social Science Elective 3
General Education Courses 6
ART-133 Art History I
ART-134 Art History II

General Education Foundation Credits 22-23

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Design/Industrial Design Core Credits 40

Total Credits 62-63

Faculty
Kelly Whalen
Assistant Professor, Design
Special Projects, Design
M.I.D., Pratt Institute
B.A., Caldwell College
EH 133 973-328-5416 kwhalen@ccm.edu

James Howard
Assistant Professor, Visual Arts
MFA, University of Illinois, Chicago
BFA, University of Illinois, Champaign-Urbana
EH 107 973-328-5436 jhoward@ccm.edu
Courses

DSN-110. History of Design. 3 Credits.
LECT 3 hrs
The History of Design is a survey of major developments of design as well as the methodology and cultural influences which impact particular designs. The nature, function and evolution of design are studied through innovations in the architectural, interior, industrial, decorative and fashion design realms. The development of concepts, their relationship to historical and cultural movements, and their impact on surrounding art and design communities will be explored.

DSN-115. Basic Drafting. 3 Credits.
LECT 1 hr, LAB 4 hrs
Basic Drafting is a beginner's course that provides a solid foundation for all design and engineering courses. The study of materials and techniques in this course introduces students to the many forms of graphical communication and how best to convey their ideas in a graphical form. A variety of techniques are explored from pencil on vellum to pen on Mylar with further rendering techniques offered to focus on the individual's Design discipline.

DSN-120. Design Concepts I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Design Concepts I is a detailed exploration of scale and proportion through two and three-dimensional sketch problems varying in levels of complexity and duration. Design projects explore relationships between historical and cultural systems and human proportion. Verbal and graphic communication skills are emphasized as a method of articulating the development of visual concepts and solutions to design problems. Communication tools such as perspective are explored in detail. Projects, which include architectural, interior design, fashion and industrial design are reviewed through juried presentations.

DSN-125. Design Rendering. 3 Credits.
LECT 1 hr, LAB 4 hrs
Design Rendering is an advanced-level studio course that builds on the work completed in Drawing I, II and Drawing for Designers. The course concentrates on producing virtual product, fashion, architecture and interior images through the means of controlled light. Emphasis is placed on setting up proper perspective and generating a line drawing as an underlay. Color marker techniques are stressed as well as color pencil. In addition, pen and ink techniques and pastel are explored. At the end of the course, each student has a collection of portfolio quality renderings that demonstrate a high level of competence in a chosen field of design.

DSN-135. Fashion Construction Technology I. 3 Credits.
LECT 1 hr, LAB 4 hrs
This intermediate course in fashion construction techniques concentrates on the details that set couture sewing apart from ready-to-wear and standard home sewing. The student explores hand-detailed sewing, speed techniques and embellishment while improving their skills in construction. Basic sewing knowledge is a must for this class.

DSN-145. Introduction to Fashion and Visual Merchandising. 3 Credits.
LECT 1 hr, LAB 4 hrs
This class explores the interrelationship between the consumer and the various sectors of the fashion industry. Students learn the principles and techniques that fashion merchandisers use in making key decisions on buying and product sourcing, store planning and layout. Students review actual case studies and take on projects that engage the merchandising planning and decision-making process. This course is highly recommended for design and business students with interest in fashion merchandising and store plan layout.

Prerequisites: ART-122, ART-130, ENG-111
Corequisites: DSN-120
Additional Fees: Course fee applies.

DSN-146. Fashion Merchandising II. 3 Credits.
LECT 1 hr, LAB 4 hrs
This course explores the interrelationship between the consumer and the various sectors of the fashion industry. Students learn the principles and techniques that fashion merchandisers use in making key decisions on buying and product sourcing, store planning and layout. Fashion as a retail component is also discussed. Students review actual case studies and take on product development projects designed to enhance their comprehension of the subject. Course introduces business math as an applied principle to merchandising.

Prerequisites: DSN-145
Additional Fees: Course fee applies.

DSN-155. Costume Design and Construction. 3 Credits.
LECT 1 hr, LAB 4 hrs
This is a course in advanced sewing techniques that builds on skills developed in Fashion Construction Technology I and II. With costume design, construction and creative problem-solving serving as the foundation, students learn advanced techniques in haute couture tailoring and further develop their designed fashion lines and portfolios.

Prerequisites: DSN-120, DSN-135, DSN-160
Additional Fees: Course fee applies.

DSN-160. Fashion Construction Technology II. 3 Credits.
LECT 1 hr, LAB 4 hrs
This intermediate course in fashion construction techniques concentrates on the details that set couture sewing apart from ready-to-wear and standard home sewing. The student explores hand-detailed sewing, speed techniques and embellishment while improving their skills in construction. Basic sewing knowledge is a must for this class.

Prerequisites: DSN-135 or permission of Design Advisor
Additional Fees: Course fee applies.

DSN-165. Drawing for Designers. 3 Credits.
LECT 1 hr, LAB 4 hrs
A studio course that introduces the design student to the many techniques of drawing required for a design professional. The course explores perspective, line quality and the graphic visualization process as well as method, materials and subject matter. Students learn to use rapid visualization skills in solving complex design problems.

Prerequisites: ART-122
Additional Fees: Course fee applies.
Additional Fees:
Course fee applies.

DSN-219. Advanced CAD 3D Modeling. 3 Credits.
LECT 1 hr, LAB 4 hrs
Upon completing CAD I and CAD II, students are next expected to acquire advanced skills in 3D modeling. This course expands on the lessons learned in CAD I and II and teaches the students valuable skills that are critical to the product and build environments. Working with advanced digital imaging software like Adobe Revit, students learn to generate modeled images with a critical determination.

Prerequisites: ENR-117, ENR-118, DSN-120.

DSN-220. Design Concepts II. 3 Credits.
LECT 2 hrs, LAB 1 hr
Design Concepts II is a continuation of Design Concepts I through projects focusing on the design methodology of problem solving. Projects explore design problems through sketches and three-dimensional scaled models of products and spaces. Students are expected to apply their entire design, visual and technical experience to the development and communication of visual concepts. Projects relevant to architectural, industrial design, interior design and fashion emphases are assigned. Project work will be reviewed through juried presentations. The role of CAD as a design tool is introduced.

Prerequisites: DSN-120
Additional Fees: Course fee applies.

DSN-234. Independent Study in Design. 1-3 Credits.
LECT 3 hrs
This course provides an opportunity for selected students to participate in independent work under close supervision of a Design faculty member. Interested students should make their interest known to the department chair early in the prior semester. The chair will determine criteria for selection. OR - A project designed with a faculty advisor. The student is responsible for developing a statement of goals and objectives, maintaining a weekly log and submitting a summary project.

Prerequisites: Permission of Design advisor.

DSN-255. Fashion Design Computer. 3 Credits.
LECT 1 hr, LAB 4 hrs
Fashion Design and Fashion Merchandising students learn to design fashion garments and generate fashion promotional utilizing the computer and advanced digital imaging software. Adobe Illustrator and Photoshop are utilized along with other modeling programs.

Prerequisites: DSN-120 or permission of department chair.

DSN-291. Special Topics in Design I. 3 Credits.
LECT 1 hr, LAB 4 hrs
The Special Topics in Design I course allows for the insertion of relevant but unscheduled courses into the curriculum. The course content includes specific technical or aesthetic Design topics that may be delivered in a lecture format.

Prerequisites: ENR-117, ENR-118, DSN-120.

DSN-292. Special Topics in Design II. 3 Credits.
LECT 1 hr, LAB 4 hrs
The Special Topics in Design II course allows for the insertion of relevant but unscheduled courses into the curriculum. The course content includes specific technical or aesthetic topics that have both a lecture and a laboratory (studio) component in an area of Design.

Additional Fees: Course fee applies.

DSN-293. Special Topics in Design III. 3 Credits.
LECT 3 hrs
The Special Topics in Design III course allows for the insertion of relevant but unscheduled courses into the curriculum. The course content includes specific technical or aesthetic Design topics that may be delivered in a lecture format.

Digital Media Technology

Associate in Applied Science Degree

This Associate in Applied Science degree is designed to prepare students to enter the field of multimedia technology — digital media, computer animation, game design, digital video/audio production, web design and multimedia for the web. Specialized classes using industry-standard software and hardware prepare students for careers in multimedia design, development and delivery. Technical emphasis courses afford students an opportunity to explore disciplines of interest to them such as game design, broadcasting, graphic design, journalism, music, photography, web development or mobile app design.

For more information, visit the Department of Information Technologies (http://www.ccm.edu/academics/divdep/BMET/infotech) website.

Degrees

Associate in Applied Science Degree

Technology-based courses taken by a student at least seven years prior to the time the student applies for graduation may not be applied to a degree or certificate within the Department of Information Technologies.

- AAS Digital Media Technology Track 1 - Broadcasting (p. 94)
- AAS Digital Media Technology Track 2 - Game Design (p. 94)
- AAS Digital Media Technology Track 3 - Graphic Design (p. 94)
- AAS Digital Media Technology Track 4 - Journalism (p. 94)
- AAS Digital Media Technology Track 5 - Music (p. 94)
- AAS Digital Media Technology Track 6 - Photography (p. 94)
- AAS Digital Media Technology Track 7 - Web Development (p. 94)
- AAS Digital Media Technology Track 8 - Mobile App Design (p. 94)

AAS Digital Media Technology

(P3530)

General Education Foundation

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<td>Math-Science-Technology</td>
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</table>
Broadcasting
Along with the Course List in the AAS Digital Media Technology program, students interested in this track should take the following courses.

- MED-211 Television Production I 3
- MED-212 Television Production II 3

Game Design
Along with the Course List in the AAS Digital Media Technology program, students interested in this track should take the following courses.

- CMP-108 Game Design Concepts 3
- MED-240 Advanced Animation 3

Graphic Design
Along with the Course List in the AAS Digital Media Technology program, students interested in this track should take the following courses.

- GRD-111 Introduction to Computer Graphics 3
- GRD-118 Typography I 3

Journalism
Along with the Course List in the AAS Digital Media Technology program, students interested in this track should take the following courses.

- COM-111 Introduction to Journalism 3
- COM-209 Editing and Publication Design 3

Music
Along with the Course List in the AAS Digital Media Technology program, students interested in this track should take the following courses.

- MUS-112 Introduction to Electronic Music 3
- MUS-124 Electronic Music II 3

Photography
Along with the Course List in the AAS Digital Media Technology program, students interested in this track should take the following courses.

- PHO-115 Photography I 3
- PHO-204 Digital Imaging I 3

Web Development
Along with the Course List in the AAS Digital Media Technology program, students interested in this track should take the following courses.

- CMP-128 Computer Science I 3
- CMP-249 Advanced Web Programming 3

Mobile App Design
Along with the Course List in the AAS Digital Media Technology program, students interested in this track should take the following courses.

- CMP-128 Computer Science I 3
- CMP-170 Mobile App Design 3

Certificates of Achievement

Media Technology

A Certificate of Achievement within Digital Media Technology (P0360)

The Certificate of Achievement in Media Technology is a compact collection of courses in media production skills that enables individuals to work effectively in the creative aspects of digital media. The program is flexible so students may concentrate in a particular area of interest or build a broad repertoire of basic production skills. It is intended for working professionals who wish to gain or enhance skills needed to find employment or advance their careers in media-related occupations including advertising, broadcasting, marketing, multimedia development, public relations and training.

- MED-110 Multimedia I 3
- MED-119 Digital Media Production 3
- Restricted Electives 9

Select three of the following:

- MED-113 Multimedia II 3
- MED-114 Media Aesthetics 3
- MED-210 Digital Video Editing 3

Digital Media Technology Core Credits: 39-40
Total Credits: 60-63
MED-110. Multimedia I. 3 Credits.
LECT 3 hrs
Multimedia I is a survey course designed to allow students to explore, discuss, develop and use multimedia technology. This computer-based course offers an extensive overview of the technologies of multimedia. Students engage in issues related to usability, management and distribution. Topics include multimedia development and design, media elements, and emerging hardware and software trends. A multimedia prototype project that demonstrates conceptual and technical understanding is required.

Additional Fees: Course fee applies.

MED-113. Multimedia II. 3 Credits.
LECT 3 hrs
An advanced course designed to allow students to apply the theory and basic practical knowledge presented in Multimedia I. Students apply their knowledge productions for DVD, local networks or the Internet. Students incorporate traditional media production elements such as video and audio combined with the latest features and technologies. Conceptualization, user interface design and prototyping are key course elements. A multimedia prototype project that demonstrates conceptual and technical understanding is required.

Prerequisites: MED-110

Additional Fees: Course fee applies.

MED-114. Media Aesthetics. 3 Credits.
LECT 3 hrs
Media Aesthetics looks at the importance, influence and meaning of visual images designed for use in electronic media. Through current and historical examples, students learn the principles and significance of media aesthetics including light and color, space and structure, time and motion, and sound, and how they are used to optimize effective communication. Students learn how aesthetic elements of television and multimedia have been translated into vectors - forces that push or pull users in certain directions. Operationally, students learn how to interpret, order, clarify and intensify various communications including fiction, by applying appropriate aesthetic principles. Comparisons between television and multimedia images are closely examined. Students may apply knowledge of media aesthetics by producing projects using broadcast and digital media facilities.

Additional Fees: Course fee applies.

 MED-117. Introduction to Broadcasting. 3 Credits.
LECT 3 hrs
This course offers a historical and content analysis approach to the study of broadcast and narrowcast communications. Included are the research and study of systems, regulations, program genres, social effects on audiences, and the future of the industry. This is accomplished via lectures and discussions, handouts, reading assignments and in-class viewing and listening assignments.

Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

MED-119. Digital Media Production. 3 Credits.
LECT 3 hrs
This course provides students with theory and training in the area of digital content development for digital media productions. Software and hardware training in digital video, audio, animation and graphics are introduced. In addition, the appropriate use of these areas of content in developing digital media productions and interface design are discussed.

Additional Fees: Course fee applies.

MED-210. Digital Video Editing. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Through hands-on learning, Digital Video Editing provides students with the fundamental principles of video editing with a focus on the techniques and technology used to achieve a superior final product. An in-depth exploration of non-linear editing concepts includes a deeper understanding of primary, secondary and tertiary motion, shot types, sequencing, transitions and continuity. Students learn to log and capture raw video, assemble shots on a timeline, create, add, and edit text, audio tracks, title animation, effects, transitions, continuity and video compositing. This course is ideal for students who wish to create and edit a professional video for broadcast, webcast and other motion media venues.

Prerequisites: MED-113 or MED-211

Additional Fees: Course fee applies.

MED-211. Television Production I. 3 Credits.
LECT 3 hrs
This course introduces students to the basic operation of a television studio and the production process. Students learn techniques and develop skills in various studio functions including camera, switching, sound, lighting, teleprompter, scriptwriting and directing. Collaboration and teamwork are emphasized.

Additional Fees: Course fee applies.
MED-212. Television Production II. 3 Credits.
LECT 3 hrs
Students employ skills learned in Television Production I and learn advanced production skills including studio and remote producing, remote-location video shooting, digital editing, advanced special FX generation and switching, and set design via a “live on tape” production of an actual television program.
Prerequisites: MED-211 and MED-114
Corequisites: MED-210
Additional Fees: Course fee applies.

MED-213. Multimedia Authoring and Design. 3 Credits.
LECT 3 hrs
Using industry-standard authoring software, students apply multimedia technology to assemble a real-world interactive multimedia project. Concepts and principles of user interface design, digital audio and video production, team production techniques and usability testing are employed. As members of a production team, students plan, manage and implement a complex multimedia production project to be used on DVD, a local network or the Internet for a participating business partner.
Prerequisites: MED-113
Additional Fees: Course fee applies.

MED-218. Video Magazine Production. 3 Credits.
LECT 3 hrs
Instruction and practice in news gathering and writing news stories for a video magazine, analysis of commercial video magazines and production of video magazines including graphics and post-production experience are objectives of this advanced media course.
Prerequisites: MED-211 or permission of instructor.

MED-220. Animation. 3 Credits.
LECT 3 hrs
This is an advanced production course utilizing 3D modeling and animation software to create animated imagery for video and multimedia applications. Software includes 3D Studio Max (3D animation) and Adobe Premiere and AfterEffects (digital video). Through assigned projects, students learn to combine live video and animation with compositing and bluescreening techniques.
Additional Fees: Course fee applies.

MED-224. Independent Study in Media. 3 Credits.
LECT 3 hrs
Students, in consultation with a media advisor, undertake an indepth analysis of a selected topic, problem or issue related to media or pursue additional media-related work experience. Students are responsible for developing a statement of goals, maintaining a weekly log and preparing a written and oral summary report. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MED-226. Cooperative Work Experience- Media Stud. 3 Credits.
COOP 3 hrs
Actual applications of classroom learning in a supervised on-the-job training experience takes place daily. Students pursue their career objectives in the broadcasting arts or digital media area following a training plan with the assistance of the department chair and on-the-job supervisor. Interested students should consult with the Department of Information Technologies chair. Available only to Digital Media Technology majors.
Prerequisites: MED-212 or MED-213
Corequisites: MED-228.

MED-229. Cooperative Work Experience-Media Related Class. 1 Credit.
LECT 1 hr
This course provides a variety of exercises that further develop students' technical skills, occupational adjustment and career development competencies. Exercises help to develop interpersonal and communication skills and help to ensure a positive cooperative work experience. This course is offered online. Available only Digital Media Technology majors.
Prerequisites: MED-212 or MED-213
Corequisites: MED-228.

MED-230. Media Internship. 3 Credits.
LECT 3 hrs
Practical experience in the media career field is gained working parttime in an approved, supervised media-related environment or on an approved media-related project under the supervision of a media instructor and/or on-the-job supervisor. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair.

MED-240. Advanced Animation. 3 Credits.
LECT 3 hrs
This advanced-level course is a continuation of MED-220 Animation and is designed to expose students to high-end 3-D modeling tools for digital animation, electronic post-production, digital special effects and digital multimedia. This course explores advanced applications in digital compositing, particle systems, Newtonian algorithms, kinemaion, dynamation and 3-D characters.
Prerequisites: MED-220
Additional Fees: Course fee applies.

MED-291. Special Topics in Media. 1 Credit.
LECT 3 hrs
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MED-292. Special Topics in Media. 3 Credits.
LECT 1 hr
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.
MED-293. Special Topics in Media. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

Early Childhood Education

Associate in Science Degree

The Associate in Science degree in Early Childhood Education focuses on ensuring that candidates develop theoretical and practical knowledge in such areas as humanities, mathematics and technology, social sciences, biological and physical sciences, the arts, multicultural and global perspectives, and personal health and fitness.

An Associate in Science in Early Childhood Education is appropriate for those students who may wish to transfer and earn a baccalaureate degree in Early Childhood Education. Graduates have several options upon the successful completion of this program. The program prepares students to work as early childhood professionals in a childcare setting. Students are required to maintain a 3.0 GPA or better in order to remain in the Early Childhood Education Program. If you are planning to transfer, contact the institution for admissions requirements.

For more information, visit the Early Childhood Education (http://www.ccm.edu/academics/degrees/earlychilded.aspx) website.

Degrees

AS Early Childhood Education
(P2940)

General Education Foundation

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Early Childhood Education Core

| PSY-213       | Child Psychology | 3 |

PSY-217       Educational Psychology | 3 |
ART-101       Art Start - a Creative Experience | 3 |
MUS-129       Music in Early Childhood | 3 |
ENG-118       Children's Literature | 3 |
CDC-110       Early Childhood Development | 3 |
EDU-111       Teaching in America | 3 |
EDU-211       Behavior Observation in Education | 3 |
SOC-202       Contemporary Social Issues - America As a Diverse Society | 3 |
SOC-209       The Family | 3 |
CDC-228       Cooperative Work Experience- Child Care | 3 |
CDC-229       Cooperative Work Experience-Child Care - Related Class | 1 |

Early Childhood Education Core Credits | 34 |

Total Credits | 65-67 |

Certificates

Early Childhood Development

A Certificate within Early Childhood Education
(P5134)

This program is designed to prepare students for a career in the field of child care. The Early Childhood Development Certificate is an in-depth credential for the early childhood teacher. Upon completion of 34 credits, individuals are eligible for a County College of Morris certificate.

Students are required to meet with the department advisor to review their curriculum and discuss educational and career goals. You can reach an advisor by contacting the Psychology department at 973-328-5631.

Communications | 3 |
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<td>ART-101</td>
<td>Art Start - a Creative Experience</td>
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</table>

Total Credits | 34 |
Students should consult their academic advisors when selecting these courses.

Faculty
John Williford, LPC
Chair, Psychology and Education
Associate Professor, Psychology
M.S., California Baptist University
BABL, Northeastern Bible College
DH327 973-328-5618 jwilliford@ccm.edu

Courses

CDC-110. Early Childhood Development. 3 Credits.
LECT 3 hrs
This course studies the growth and development of the child from birth through age ten. It will cover a variety of factors that influence child development such as diversity, culture, health, economic and family environment. Also it provides an overview of the major theorists in the field of human development. There will be discussion regarding these theorists' contributions to understanding how children grow and learn. Students will have the opportunity to observe and report on a variety of teaching and learning venues.

CDC-228. Cooperative Work Experience- Child Care. 3 Credits.
COOP 3 hrs
This course provides selected students in the Early Childhood programs with job-oriented training and practical experience in a work environment. Students desiring to participate in this experience should make this intention known to the Faculty Special Projects person at the beginning of their third semester.
Prerequisites: ENG-111, ENG-118, MUS-129, PSY-113, PSY-213, PSY-217, SOC-120, SOC-209, CDC-110, ART-101
Corequisites: CDC-229.

CDC-229. Cooperative Work Experience-Child Care - Related Class. 1 Credit.
LECT 1 hr
A supplement to the cooperative work experience program, this course provides a variety of experiences to further enhance students' career development and occupational development. It also develops positive points of view toward human relationships and the responsibilities of both the employee and the employer.
Prerequisites: ENG-111, ENG-118, MUS-129, PSY-113, PSY-213, PSY-217, SOC-120, SOC-209, CDC-110, ART-101
Corequisites: CDC-228.

EDU-111. Teaching in America. 3 Credits.
LECT 3 hrs
This course presents the historical and philosophical foundations of American education and how they relate to contemporary issues facing teachers in America today. The goal is to provide students with a comprehensive understanding of the development of the teaching profession including both its roots and modern-day direction. The course offers theoretical and practical learning experiences including five hours of field experiences in public schools.
Prerequisites: All basic skills/remediation in English must be completed. GPA of 3.0 or higher and permission of the department chair or advisor (via petition).
Corequisites: PSY-113.

EDU-211. Behavior Observation in Education. 3 Credits.
LECT 3 hrs
This course uses weekly seminars and 20 hours of field experience in public schools to integrate theory and classroom observations in order for prospective teachers to understand curriculum development and instructional methods. Aspiring teachers learn how to use descriptive research methods to gain insight into the instructional needs of learners by observing them in their natural classroom settings. Armed with this experiential knowledge, students will use the seminar to report and discuss their observed findings, as well as relate this practical information to the theories of curriculum development and instructional strategies.
Prerequisites: EDU-111, PSY-113 and permission of department chair or advisor (via petition). Cumulative GPA of 3.0 or higher
Corequisites: PSY-217.

Electronics Engineering Technology

Associate in Applied Science Degree

The Electronics Engineering Technology program is a two-year career-oriented curriculum that prepares students for positions in electronics industries and related electronics service. Job activities center on technical problem-solving and the practical application of engineering.

The specific educational objectives of the Electronics Engineering Technology program are to:

1. produce graduates who are employed and operate effectively in positions that lie between those of the skilled craftsperson and those of the graduate electrical engineer
2. produce graduates who can successfully transfer and complete a baccalaureate degree program in Electronics Engineering Technology

After obtaining an Associate in Applied Science degree, it is possible to continue at a four-year college and to complete a Bachelor of Science degree in Engineering Technology. No prior knowledge of electronics is necessary to enter the Electronics Engineering Technology program. Core electronics courses are sequenced along with applied mathematics and science to develop a broad background in the technology. Each electronics course contains a laboratory, which utilizes modern test instruments and applies classroom theory to practical applications.
In the second year of study, students interested in health-related fields may select the Biomedical Equipment option. Cooperative Education, a work-study program with local electronic firms, is available.

The Electronics Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET. You can find more information on the commission at the ABET (http://www.abet.org) website.

Articulation Agreements
An existing agreement with New Jersey Institute of Technology (NJIT) provides students with a local transfer opportunity. Students should check with the Transfer Office about the latest articulation agreements for this program both locally and nationally.

For more information, visit the Electronics Engineering Technology (http://www.ccm.edu/academics/degrees/elecengtech.aspx) website. (http://www.ccm.edu/academics/degrees/elecengtech.aspx)

Degrees
• AAS Electronics Engineering Technology (p. 99)
• AAS Electronics Engineering Technology - Biomedical Equipment Option (p. 99)

### AAS Electronics Engineering Technology

(P3600)

#### General Education Foundation

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##### General Education Foundation Credits
19-21

#### Electronics Core

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#### Electronics Engineering Technology Biomedical Equipment Option Core

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<td>ELT-115 Active Circuit Components</td>
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<td>ELT-110 Digital Principles</td>
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<td>ELT-209 Advanced Digital and Microprocessors</td>
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<td>ENR-124 Instrumentation and Measurements</td>
<td>2</td>
</tr>
<tr>
<td>PHY-111 Technical Physics I</td>
<td>4</td>
</tr>
</tbody>
</table>

##### Electronics Engineering Technology Biomedical Equipment Option Core Credits
44

##### Total Credits
64-65

### AAS Biomedical Equipment

#### An Electronics Engineering Technology Option

(P3601)

#### General Education Foundation

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-111</td>
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<tr>
<td>ENG-112</td>
<td>4</td>
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<tr>
<td>Math-Science-Technology</td>
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<tr>
<td>Math Elective</td>
<td>College Algebra or Higher</td>
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<td>Social Science or Humanities</td>
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<td>Math Elective</td>
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##### Laboratory Science (Restrictive) BIO/CHM

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<td>General Education Foundation Credits</td>
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</table>

#### Electronics Engineering Technology Biomedical Equipment Option Core

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ELT-201 Electricity and Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELT-115 Active Circuit Components</td>
<td>3</td>
</tr>
<tr>
<td>ELT-110 Digital Principles</td>
<td>3</td>
</tr>
<tr>
<td>ELT-209 Advanced Digital and Microprocessors</td>
<td>4</td>
</tr>
<tr>
<td>ELT-210 Electronic Fabrication</td>
<td>1</td>
</tr>
<tr>
<td>ELT-213 Active Circuit Design</td>
<td>4</td>
</tr>
<tr>
<td>ELT-215 Industrial Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELT-110 Digital Principles</td>
<td>3</td>
</tr>
<tr>
<td>ELT-227 Biomedical Clinical Experience</td>
<td>3</td>
</tr>
<tr>
<td>ELT-231 Electronic Communication Systems</td>
<td>4</td>
</tr>
<tr>
<td>ENR-117 Computer-Aided Drafting</td>
<td>2</td>
</tr>
<tr>
<td>ENR-119 Technical Computer Applications</td>
<td>1</td>
</tr>
<tr>
<td>ENR-120 Technical Computer Programming</td>
<td>2</td>
</tr>
<tr>
<td>ENR-124 Instrumentation and Measurements</td>
<td>2</td>
</tr>
<tr>
<td>PHY-111 Technical Physics I</td>
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</tr>
</tbody>
</table>

##### Electronics Engineering Technology Biomedical Equipment Option Core Credits
44

##### Total Credits
64-65

1 Students must undergo a federal and state criminal background check and purchase professional liability insurance prior to the start of their clinical experience. A student denied clinical placement due to the results of the criminal background check will not be able to complete the program.
Certificates of Achievement

- Digital Technology - A Certificate of Achievement within Electronics Engineering Technology (p. 100)
- Basic Electronics - A Certificate of Achievement within Electronics Engineering Technology (p. 100)
- Advanced Electronics - A Certificate of Achievement within Electronics Engineering Technology (p. 100)

Digital Technology
A Certificate of Achievement within Electronics Engineering Technology
(P0629)

The Digital Technology Certificate of Achievement is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides a strong foundation in digital theories and applications. It’s possible to complete the certificate within a year and the courses fully transfer to the Electronics Engineering Technology degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>ELT-110</td>
<td>Digital Principles</td>
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<tr>
<td>ELT-209</td>
<td>Advanced Digital and Microprocessors</td>
<td>4</td>
</tr>
<tr>
<td>ENR-119</td>
<td>Technical Computer Applications</td>
<td>1</td>
</tr>
<tr>
<td>ENR-120</td>
<td>Technical Computer Programming</td>
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</tr>
<tr>
<td>TEL-110</td>
<td>Routing I (CISCO)</td>
<td>3</td>
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</tbody>
</table>

Total Credits 13

Basic Electronics
A Certificate of Achievement within Electronics Engineering Technology
(P0631)

The Basic Electronics Certificate of Achievement is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides an introduction to electronic theories and applications. It’s possible to complete the certificate within a year and the courses fully transfer to the Electronics Engineering Technology degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENR-124</td>
<td>Instrumentation and Measurements</td>
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</tr>
<tr>
<td>ENR-119</td>
<td>Technical Computer Applications</td>
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</tr>
<tr>
<td>MAT-110</td>
<td>College Algebra</td>
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<tr>
<td>ELT-115</td>
<td>Active Circuit Components</td>
<td>3</td>
</tr>
<tr>
<td>ELT-201</td>
<td>Electricity and Electronics</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 13

Advanced Electronics
A Certificate of Achievement within Electronics Engineering Technology
(P0637)

The Advanced Electronics Certificate of Achievement is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides an advanced introduction to the theories and techniques used in the analysis of electronic circuits. It is possible to complete the certificate within a year and the courses fully transfer to the Electronics Engineering Technology degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELT-213</td>
<td>Active Circuit Design</td>
<td>4</td>
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<tr>
<td>ELT-215</td>
<td>Industrial Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELT-231</td>
<td>Electronic Communication Systems</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits 12

Faculty

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BSEE, New Jersey Institute of Technology
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Courses

ELT-110. Digital Principles. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course develops the fundamentals of the binary system. Circuit implementation from Boolean functions and map minimization. Course includes study of combinational logic, sequential logic circuits, flip-flops, counters and shift register. The laboratory allows the student to apply theory to practical digital circuits.

Additional Fees: Course fee applies.

ELT-115. Active Circuit Components. 3 Credits.
LECT 2 hrs, LAB 4 hrs
This course introduces the behavior of semiconductor electronic devices and develops the device characteristics. Some DC and AC circuit theory is expanded upon so that the active devices can be properly analyzed. Biasing techniques and models of amplifier configurations are stressed for the bipolar transistor and field effect devices. Diodes, rectifiers, filtering and switching circuit applications are studied. Laboratory includes the verification of device characteristics and the testing of basic amplifier and switching configurations.

Prerequisites: ELT-201
Additional Fees: Course fee applies.
ELT-121. Circuit Analysis. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course introduces the student to both DC and AC circuit theory. It includes Ohm’s and Kirchoff’s laws for analysis of series and parallel circuits. Computer circuit simulation of series-parallel, ladder and bridge networks in both DC and AC are analyzed. Resonance and frequency response are included along with some discussion of AC power and transformers. The laboratory experiments are designed to support the theory and obtain measurement skills.
Prerequisites: MAT-110 and ENR-124
Additional Fees: Course fee applies.

ELT-123. Studio Maintenance. 3 Credits.
LECT 2 hrs, LAB 2 hrs
For Music Recording majors only. This course provides students an introduction to music studio electronics. Basic skills of working with electronic components are covered, including soldering, the use of electronic measuring equipment and troubleshooting procedures. Studio cabling and infrastructure are dealt with extensively. Various wiring schemes and grounding techniques are examined to give the student an understanding of the typical music studio layout found in the professional environment. This course is for Music Recording majors only and does not serve as a technical elective for the Electronics Engineering Technology major. This course is offered in the Fall and Spring semesters.
Prerequisites: MUS-165
Additional Fees: Course fee applies.

ELT-200. Biomedical Electronics. 3 Credits.
LECT 3 hrs
This course is the study of the techniques and theory behind the instrumentation utilized in hospital and health-related laboratory work. Emphasis is placed on physiological signals derived from the body and the problems and safety issues associated with their measurement. Demonstrations are conducted in class.
Prerequisites: ELT-115 and ELT-201

ELT-201. Electricity and Electronics. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is a fundamental study of electricity and electronics for Engineering Technology majors. The principles of electrical components and circuits are studied in class and laboratory. Topics include DC, AC series and parallel circuits, transformers and power supplies, solid state amplifiers and control components. The laboratory enables the student to apply the theory discussed in class and to gain some proficiency in the use of electronic measuring equipment.
Prerequisites: MAT-110 or equivalent and ENR-124
Additional Fees: Course fee applies.

ELT-209. Advanced Digital and Microprocessors. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is an extension of digital theory into the operation and interfacing of microprocessors. Major topics include sequential logic design, memory organization, microprocessor architecture, machine level programming, A/D and D/A conversion, and serial and parallel interfacing. An associated laboratory provides for hands-on microprocessor interfacing and the use of logic analyzers.
Prerequisites: ELT-110 and ENR-120 or CMP-128
Additional Fees: Course fee applies.

ELT-210. Electronic Fabrication. 1 Credit.
LAB 3 hrs
This course provides students with an opportunity to learn about the process involved in the fabrication of electronic circuit boards. Using computer-aided drafting tools, students create an electronic component layout and necessary art work for the construction of a printed circuit board. Students are introduced to project management concepts and techniques, soldering, test specifications and printed circuit board construction. A term project or a series of smaller projects enables students to manage, build and assemble a printed circuit board and develop test specifications.
Prerequisites: ELT-115 and either ELT-121 or ELT-201
Additional Fees: Course fee applies.

ELT-213. Active Circuit Design. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course covers analysis and design of solid-state amplifiers using bipolar and field effect transistors. Topics include frequency response using Bode plots and feedback analysis as applied to operational amplifiers and oscillators. Laboratory verification includes transistor, amplifiers, power amplifiers, IC operational amplifiers and oscillators.
Prerequisites: ELT-115 and either ELT-121 or ELT-201
Additional Fees: Course fee applies.

ELT-215. Industrial Electronics. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course covers operational amplifiers in linear, non-linear and active filter applications, pulse and wave-shaping techniques, power supplies and regulators, thyristor control of power and transducers. The laboratory includes experiments in design and tests to support the above topics.
Prerequisites: ELT-209 and ELT-115
Additional Fees: Course fee applies.

ELT-227. Biomedical Clinical Experience. 3 Credits.
LECT 3 hrs
This course provides the student with a 200-hour internship at a local hospital. The student assists in the maintenance and calibration of biomedical electronic equipment. The student must abide by any rules and regulations stipulated in the affiliation agreement with the partnering hospital. As a minimum, the student is required to purchase liability insurance and agree to a criminal background check.
Prerequisites: ELT-200 and permission of department chair
Additional Fees: Course fee applies.

ELT-230. Optoelectronics. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course covers principles of light and linear optics characteristics of electro-optical light sources and detectors and their applications in industry, displays and communication (fiber optics). Lab experiments demonstrate electro-optical measurements and designs of typical applications of electro-optical devices.
Prerequisites: MAT-110
Additional Fees: Course fee applies.
ELT-231. Electronic Communication Systems. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course covers A.M., F.M., and single side-band communication systems, including an introduction to digital transmission. Designed to familiarize the student with transmitters, receivers, modems, noise analysis, information theory, pulse modulation, sampling, coding, multiplexing and other signal processing techniques used in commercial broadcasting and data transmission systems. The course includes some coverage of transmission lines, antennas, microwaves and satellites. Includes laboratory work involving communication system components and techniques using industrial grade equipment.
Prerequisites: ELT-201
Additional Fees: Course fee applies.

ELT-239. Cooperative Work Experience Electronics Engineering Technology. 3 Credits.
This course provides a field experience in the laboratory facilities of an industrial firm. The course is designed for students in the Electronics Engineering Technology programs to obtain industrial experience as a supplement to their college studies prior to career employment. Seminar evaluation visitsations are included. Students must have completed 35 credits to enroll.
Prerequisites: Permission of department chair.

ELT-291. Special Topics in Electronics Engineering Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course provides an examination of selected topics or issues in Electronics Engineering Technology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

ELT-292. Special Topics in Electronic Engineering Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course provides an examination of selected topics or issues in Electronics Engineering Technology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

ENR-103. Basic Engineering Graphics I. 1 Credit.
LAB 3 hrs
Students learn fundamentals of engineering drawing through freehand sketching. Course includes developing orthographic views including auxiliary views, dimensioning, sectioning, tolerancing, threads, fasteners, springs and assembly drawings. Course includes creation of pictorial drawings.

ENR-117. Computer-Aided Drafting I. 2 Credits.
LECT 1 hr, LAB 4 hrs
This course is an introduction to the concepts and operation of engineering drawing preparation using CAD (computer-aided drafting). The emphasis is on how CAD can reduce drawing time and improve accuracy. Students learn to use the AutoCAD software program to prepare drawings.
Additional Fees: Course fee applies.

ENR-118. Computer-Aided Drafting II. 2 Credits.
LECT 1 hr, LAB 4 hrs
This course is a continuation and enhancement of Computer-Aided Drafting I. Topics include prototype drawings, blocks, attributes, x-reference, grips, paper space and development of 3-dimensional solid modeling.
Prerequisites: ENR-117
Additional Fees: Course fee applies.

ENR-119. Technical Computer Applications. 1 Credit.
LAB 3 hrs
This course provides an introduction to the various technical tools available to help solve problems in the field of engineering technology. This is a hands-on laboratory course designed to provide students with experience in using scientific calculators, Windows Operating System, Microsoft Office and Internet search tools. Special emphasis is placed on the development of technical reports using Microsoft Office's EXCEL and Word programs.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

ENR-120. Technical Computer Programming. 2 Credits.
LECT 2 hrs, LAB 2 hrs
This course is an introduction to computer programming with application to engineering technology. Microcomputers are used to develop application programs in a programming language.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

ENR-121. Engineering Graphics. 2 Credits.
LECT 1 hr, LAB 3 hrs
This course is an introduction to computer aided design software and hardware. Covered are geometric constructions, multiview orthographic projection, dimensioning, sectioning, auxiliary view and axonometric projection and principles of descriptive geometry. A brief introduction to solid modeling is also included. This course is intended for Engineering Science students; Engineering Technology students take ENR-117.
Prerequisites: MAT-123
Additional Fees: Course fee applies.

ENR-123. Introduction to Engineering. 0 Credits.
LECT 1 hr
This course provides the entering engineering student with an overview of the engineering profession and the design process. Topics discussed include the engineering course of study, academic advisement and transfer processes, types of engineering disciplines, problem-solving techniques, typical software tools, reporting techniques, and study skills.

ENR-124. Instrumentation and Measurements. 2 Credits.
LECT 1 hr, LAB 3 hrs
This course is an introductory study in the concepts involving physical measurements utilizing hands-on electrical and mechanical measurement applications. Use of basic instruments and transducers, accuracy and precision, units and standards of measurements, accounting and presentation of errors in measurements.
Prerequisites: MAT-007 or equivalent
Corequisites: ENR-119
Additional Fees: Course fee applies.
ENR-125. Computer Programming for Engineers. 3 Credits.
LECT 2 hrs, LAB 2 hrs
A course in structured and object-oriented programming, emphasizing engineering applications and numerical methods in assignments. Program assignments are coded and are implemented on personal computers.
Prerequisites: MAT-123
Additional Fees: Course fee applies.

ENR-126. Computer Aided Design and Applications. 2 Credits.
LECT 1 hr, LAB 4 hrs
An introductory course in computer aided design using parametric solid modeling software. Creation of solid models of parts, generation of orthographic views, sectional views and auxiliary views are covered. Dimensioning and tolerancing of parts is emphasized along with development of appropriate files to make the parts for product development using rapid prototyping (3-D printing) and to manufacture parts using computerized numerical control machines.
Prerequisites: ENR-117
Additional Fees: Course fee applies.

ENR-220. Hydraulics and Fluid Power. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course is an exploration into the relationship between pressure, density and temperature as they relate to hydraulic and pneumatic systems. Topics include hydraulic pumps, motors and air compressors. The course emphasizes use of engineering standards and specifications for circuit design and component selection. Electrical controls and application to systems are covered. Lab sessions further expand upon lectures by providing students with physical evidence to support theories and ideas acquired in class.
Prerequisites: MAT-110
Additional Fees: Course fee applies.

ENR-222. Mechanics of Solids. 3 Credits.
LECT 3 hrs
Principles of strength of materials are derived for uniaxial stresses and strains, direct shear, torsion bending and combined stresses and column buckling. Also covered are axial force, shear moment and torque in structural members and in statically indeterminate systems. Elementary failure theory of structures and mechanical components is discussed.
Prerequisites: ENR-223.

ENR-223. Engineering Mechanics I (Statics). 3 Credits.
LECT 3 hrs
This course is a vector approach to statics in a plane and in three dimensions, equilibrium of rigid objects and rigid bodies. Equivalent force systems, structural analysis, centroids and moments of inertia. Virtual work and applied engineering problems are incorporated.
Prerequisites: MAT-131 and PHY-130.

ENR-224. Engineering Mechanics II (Dynamics). 3 Credits.
LECT 3 hrs
This course is a calculus-based course in dynamics. Kinematics and kinetics of particles and rigid bodies, Newton's laws, work, energy, impulse and momentum are covered. Practical engineering problems are incorporated.
Prerequisites: ENR-223.

ENR-230. Engineering Strength of Materials. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Principles of strength of materials are derived for uniaxial stresses and strains, direct shear, torsion bending, and combined stresses and column buckling. Elementary failure theory of structures and mechanical components is discussed. Laboratory covers a variety of tensile stress-strain, impact and hardness tests, as well as shear stress-strain and the techniques of report writing.
Prerequisites: ENR-223
Additional Fees: Course fee applies.

ENR-232. Materials Science. 3 Credits.
LECT 3 hrs
This course covers the properties and structure of materials: atomic bonding, molecular, crystalline, noncrystalline structures and crystalline imperfections. It also covers metallic phases, equilibrium and nonequilibrium reactions, processing and properties of ferrous and non-ferrous metals, polymers, ceramics and composites. In addition, corrosion phenomenon is discussed.
Prerequisites: CHM-125 and CHM-126 and PHY-130.

ENR-234. Independent Study in Technology. 3 Credits.
LECT 3 hrs
This course is for students in Engineering Technologies. The student selects an area of interest and proposes a plan of study to a sponsoring faculty member who supervises and evaluates the student's progress.
Prerequisites: Permission of department chair.

ENR-235. Engineering Circuit Analysis I. 3 Credits.
LECT 3 hrs
This first course in engineering circuit analysis covers DC circuit analysis including source transformations, mesh, nodal, superposition, Thevenin and Norton theorems, and the maximum power transfer theorem. Dependent as well as independent sources are included. Transient response of RC, RL and RLC circuits is introduced. Steady-state analysis of single and three phase AC systems is studied using phasor diagrams and the network theorems mentioned above. Real, reactive, apparent power and power factors are included. Use of the computer as a problem-solving tool is included in the course.
Prerequisites: MAT-132.

ENR-236. Engineering Circuit Analysis Laboratory I. 1 Credit.
LAB 3 hrs
This laboratory course includes experiments in DC, AC and transients to accompany the course work in Engineering Circuit Analysis I.
Corequisites: ENR-235
Additional Fees: Course fee applies.

ENR-237. Engineering Circuit Analysis II. 3 Credits.
LECT 3 hrs
This is a second course in engineering circuit analysis. Natural and step response of RL, RC and RLC circuits, mutual inductance, ideal transformers, series and parallel resonance are studied. Laplace transform theory is covered and includes step and impulse response in the S-domain. Bode diagrams of simple and quadratic factors are plotted and the computer is used for actual frequency and phase plots. Fourier Series are studied using both trigonometric and exponential forms.
Prerequisites: ENR-235
Corequisites: MAT-232.
ENR-238. Engineering Circuit Analysis Laboratory II. 1 Credit.
LAB 3 hrs
This laboratory course includes experiments on transformers, series and parallel resonance, filters and frequency/phase response plots, and two-port hybrid models to accompany the course work in Engineering Circuit Analysis II.
Prerequisites: ENR-236
Corequisites: ENR-237
Additional Fees: Course fee applies.

ENR-240. Engineering Technology Project. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course covers the design of products and processes considering functional requirements, manufacturing feasibility and economy, and the use of technical literature and catalogs. Includes design layout and working drawings and group and individual projects.
Prerequisites: ENR-117 and MEC-110 and MEC-141
Additional Fees: Course fee applies.

ENR-241. Instrumentation and Control. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is an introduction to the study of measuring systems and components, digital and analog signals and their characteristics. Mechanical and electromechanical transducer elements are used to measure pressure, temperature, displacement, velocity and acceleration. Static and dynamic performance of instruments, statistical analysis of experimental data are explored. A brief study of process controllers, programmable logic controllers and final control elements are also explored.
Prerequisites: ELT-201
Additional Fees: Course fee applies.

ENR-290. Special Topics in Technology. 1 Credit.
LECT 1 hr
This course is for students in Engineering Technologies. The student selects an area of interest and proposes a plan of study to a sponsoring faculty member who supervises and evaluates the student's progress when used for independent study. The course is also used to cover either current or future topics of interest in technology. Topics discussed will have relevance to either electronics technology, mechanical technology or both, and may vary each semester.
Prerequisites: Permission of department chair.

ENR-291. Special Topics in Engineering. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in engineering. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

Engineering Science
Associate in Science Degree
The Engineering Science program challenges students to an academically rigorous preparation for transfer into baccalaureate programs offered by major engineering institutions. It emphasizes high-quality core courses in mathematics, science and engineering. An array of general education courses exposes students to the styles and interests of professionals in a variety of academic disciplines.

Articulation Agreements
Students should check with the Transfer Office about articulation agreements with this program.

For more information, visit the Engineering Science (http://www.ccm.edu/academics/degrees/engineersci.aspx) website.

Degrees
AS Engineering Science
(P2180)

General Education Foundation
Communication 6
ENG-111 English Composition I
ENG-112 English Composition II

Math-Science-Technology 11
MAT-131 Analytic Geometry and Calculus I
MAT-232 Differential Equations
CHM-125 General Chemistry I - Lecture
CHM-126 General Chemistry I - Laboratory

Social Science 6
ECO-211 Principles of Economics I Macroeconomics
ECO-212 Principles of Economics II Microeconomics

Humanities 3
Choose from General Education course list

General Education 4
CHM-127 General Chemistry II - Lecture
CHM-128 General Chemistry II - Laboratory

General Education Foundation Credits 30

Engineering Science Core
MAT-132 Analytic Geometry and Calculus II 4
MAT-230 Calculus III 4
ENR-121 Engineering Graphics 2
ENR-123 Introduction to Engineering N1
ENR-125 Computer Programming for Engineers 3
ENR-222 Mechanics of Solids 3
ENR-223 Engineering Mechanics I (Statics) 3
ENR-224 Engineering Mechanics II (Dynamics) 3
ENR-235 Engineering Circuit Analysis I 3
ENR-236 Engineering Circuit Analysis Laboratory I 1
PHY-130 Engineering Physics I 4
PHY-133 Engineering Physics II 4
PHY-134 Laboratory for Engineering Physics II 1
PHY-232 Engineering Physics III 3
PHY-233 Laboratory for Engineering Physics III 1
Engineering Science Core Credits 39
Total Credits 69

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B.S., Michigan State University
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Courses

ENR-103. Basic Engineering Graphics I. 1 Credit.
LAB 3 hrs
Students learn fundamentals of engineering drawing through freehand sketching. Course includes developing orthographic views including auxiliary views, dimensioning, sectioning, tolerancing, threads, fasteners, springs and assembly drawings. Course includes creation of pictorial drawings.

ENR-117. Computer-Aided Drafting I. 2 Credits.
LECT 1 hr, LAB 4 hrs
This course is an introduction to the concepts and operation of engineering drawing preparation using CAD (computer-aided drafting). The emphasis is on how CAD can reduce drawing time and improve accuracy. Students learn to use the AutoCAD software program to prepare drawings.
Additional Fees: Course fee applies.

ENR-118. Computer-Aided Drafting II. 2 Credits.
LECT 1 hr, LAB 4 hrs
This course is a continuation and enhancement of Computer-Aided Drafting I. Topics include prototype drawings, blocks, attributes, x-reference, grips, paper space and development of 3-dimensional solid modeling.
Prerequisites: ENR-117
Additional Fees: Course fee applies.

ENR-119. Technical Computer Applications. 1 Credit.
LAB 3 hrs
This course provides an introduction to the various technical tools available to help solve problems in the field of engineering technology. This is a hands-on laboratory course designed to provide students with experience in using scientific calculators, Windows Operating System, Microsoft Office and Internet search tools. Special emphasis is placed on the development of technical reports using Microsoft Office's EXCEL and Word programs.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

ENR-120. Technical Computer Programming. 2 Credits.
LECT 2 hrs, LAB 2 hrs
This course is an introduction to computer programming with application to engineering technology. Microcomputers are used to develop application programs in a programming language.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

ENR-121. Engineering Graphics. 2 Credits.
LECT 1 hr, LAB 3 hrs
This course is an introduction to computer aided design software and hardware. Covered are geometric constructions, multiview orthographic projection, dimensioning, sectioning, auxiliary view and axonometric projection and principles of descriptive geometry. A brief introduction to solid modeling is also included. This course is intended for Engineering Science students; Engineering Technology students take ENR-117.
Prerequisites: MAT-123
Additional Fees: Course fee applies.

ENR-122. Instrumentation and Measurements. 2 Credits.
LECT 1 hr, LAB 3 hrs
This course is an introductory study in the concepts involving physical measurements utilizing hands-on electrical and mechanical measurement applications. Use of basic instruments and transducers, accuracy and precision, units and standards of measurements, accounting and presentation of errors in measurements.
Prerequisites: MAT-007 or equivalent
Corequisites: ENR-119
Additional Fees: Course fee applies.

ENR-123. Introduction to Engineering. 0 Credits.
LECT 1 hr
This course provides the entering engineering student with an overview of the engineering profession and the design process. Topics discussed include the engineering course of study, academic advisement and transfer processes, types of engineering disciplines, problem-solving techniques, typical software tools, reporting techniques, and study skills.

ENR-124. Instrumentation and Measurements. 2 Credits.
LECT 1 hr, LAB 3 hrs
This course is an introductory study in the concepts involving physical measurements utilizing hands-on electrical and mechanical measurement applications. Use of basic instruments and transducers, accuracy and precision, units and standards of measurements, accounting and presentation of errors in measurements.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

ENR-125. Computer Programming for Engineers. 3 Credits.
LECT 2 hrs, LAB 2 hrs
A course in structured and object-oriented programming, emphasizing engineering applications and numerical methods in assignments. Program assignments are coded and are implemented on personal computers.
Prerequisites: MAT-123
Additional Fees: Course fee applies.
ENR-126. Computer Aided Design and Applications. 2 Credits.
LECT 1 hr, LAB 4 hrs
An introductory course in computer aided design using parametric solid modeling software. Creation of solid models of parts, generation of orthographic views, sectional views and auxiliary views are covered. Dimensioning and tolerancing of parts is emphasized along with development of appropriate files to make the parts for product development using rapid prototyping (3-D printing) and to manufacture parts using computerized numerical control machines.
Prerequisites: ENR-117
Additional Fees: Course fee applies.

ENR-220. Hydraulics and Fluid Power. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course is an exploration into the relationship between pressure, density and temperature as they relate to hydraulic and pneumatic systems. Topics include hydraulic pumps, motors and air compressors. The course emphasizes use of engineering standards and specifications for circuit design and component selection. Electrical controls and application to systems are covered. Lab sessions further expand upon lectures by providing students with physical evidence to support theories and ideas acquired in class.
Prerequisites: MAT-110
Additional Fees: Course fee applies.

ENR-222. Mechanics of Solids. 3 Credits.
LECT 3 hrs
Principles of strength of materials are derived for uniaxial stresses and strains, direct shear, torsion bending and combined stresses and column buckling. Also covered are axial force, shear moment and torque in structural members and in statically indeterminate systems. Elementary failure theory of structures and mechanical components is discussed.
Prerequisites: ENR-223.

ENR-223. Engineering Mechanics I (Statics). 3 Credits.
LECT 3 hrs
This course is a vector approach to statics in a plane and in three dimensions, equilibrium of particles and rigid bodies. Equivalent force systems, structural analysis, centroids and moments of inertia. Virtual work and applied engineering problems are incorporated.
Prerequisites: MAT-131 and PHY-130.

ENR-224. Engineering Mechanics II (Dynamics). 3 Credits.
LECT 3 hrs
This course is a calculus-based course in dynamics. Kinematics and kinetics of particles and rigid bodies. Newton’s laws, work, energy, impulse and momentum are covered. Practical engineering problems are incorporated.
Prerequisites: ENR-223.

ENR-230. Engineering Strength of Materials. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Principles of strength of materials are derived for uniaxial stresses and strains, direct shear, torsion bending, and combined stresses and column buckling. Elementary failure theory of structures and mechanical components is discussed. Laboratory covers a variety of tensile stress-strain, impact and hardness tests, as well as shear stress-strain and the techniques of report writing.
Prerequisites: ENR-223
Additional Fees: Course fee applies.

ENR-232. Materials Science. 3 Credits.
LECT 3 hrs
This course covers the properties and structure of materials: atomic bonding, molecular, crystalline, noncrystalline structures and crystalline imperfections. It also covers metallic phases, equilibrium and nonequilibrium reactions, processing and properties of ferrous and non-ferrous metals, polymers, ceramics and composites. In addition, corrosion phenomenon is discussed.
Prerequisites: CHM-125 and CHM-126 and PHY-130.

ENR-234. Independent Study in Technology. 3 Credits.
LECT 3 hrs
This course is for students in Engineering Technologies. The student selects an area of interest and proposes a plan of study to a sponsoring faculty member who supervises and evaluates the student’s progress.
Prerequisites: Permission of department chair.

ENR-235. Engineering Circuit Analysis I. 3 Credits.
LECT 3 hrs
This first course in engineering circuit analysis covers DC circuit analysis including source transformations, mesh, nodal, superposition, Thevenin and Norton theorems, and the maximum power transfer theorem. Dependent as well as independent sources are included. Transient response of RC, RL and RLC circuits is introduced. Steady-state analysis of single and three phase AC systems is studied using phasor diagrams and the network theorems mentioned above. Real, reactive, apparent power and power factors are included. Use of the computer as a problem-solving tool is included in the course.
Prerequisites: MAT-132.

ENR-236. Engineering Circuit Analysis Laboratory I. 1 Credit.
LAB 3 hrs
This laboratory course includes experiments in DC, AC and transients to accompany the course work in Engineering Circuit Analysis I.
Corequisites: ENR-235
Additional Fees: Course fee applies.

ENR-237. Engineering Circuit Analysis II. 3 Credits.
LECT 3 hrs
This is a second course in engineering circuit analysis. Natural and step response of RL, RC and RLC circuits, mutual inductance, ideal transformers, series and parallel resonance are studied. Laplace transform theory is covered and includes step and impulse response in the S-domain. Bode diagrams of simple and quadratic factors are plotted and the computer is used for actual frequency and phase plots. Fourier Series are studied using both trigonometric and exponential forms.
Prerequisites: ENR-235
Corequisites: MAT-232.

ENR-238. Engineering Circuit Analysis Laboratory II. 1 Credit.
LAB 3 hrs
This laboratory course includes experiments on transformers, series and parallel resonance, filters and frequency/phase response plots, and two-port hybrid models to accompany the course work in Engineering Circuit Analysis II.
Prerequisites: ENR-236
Corequisites: ENR-237
Additional Fees: Course fee applies.
ENR-240. Engineering Technology Project. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course covers the design of products and processes considering functional requirements, manufacturing feasibility and economy, and the use of technical literature and catalogs. Includes design layout and working drawings and group and individual projects.
Prerequisites: ENR-117 and MEC-110 and MEC-141
Additional Fees: Course fee applies.

ENR-241. Instrumentation and Control. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is an introduction to the study of measuring systems and components, digital and analog signals and their characteristics. Mechanical and electromechanical transducer elements are used to measure pressure, temperature, displacement, velocity and acceleration. Static and dynamic performance of instruments, statistical analysis of experimental data are explored. A brief study of process controllers, programmable logic controllers and final control elements are also explored.
Prerequisites: ELT-201
Additional Fees: Course fee applies.

ENR-290. Special Topics in Technology. 1 Credit.
LECT 1 hr
This course is for students in Engineering Technologies. The student selects an area of interest and proposes a plan of study to a sponsoring faculty member who supervises and evaluates the student’s progress when used for independent study. The course is also used to cover either current or future topics of interest in technology. Topics discussed will have relevance to either electronics technology, mechanical technology or both, and may vary each semester.
Prerequisites: Permission of department chair.

ENR-291. Special Topics in Engineering. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in engineering. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

ENR-292. Special Topics in Engineering. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in engineering. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

English for Speakers of Other Languages (ESL)
(P0961)
This program of study is designed for students whose native language is not English but who already have some fundamental knowledge of the language as determined by a placement examination. The curriculum provides students with the academic English skills and cultural knowledge needed for college studies. Upon successful completion of the program, students go into the appropriate course in the English department to fulfill the Communication requirement of their major. Students are not permitted to enroll in other courses in their major until they successfully complete Level II. For more details, consult the chart below, or visit the Languages and ESL Department (http://www.ccm.edu/academics/divdep/liberalarts/lanquages) website.

<table>
<thead>
<tr>
<th>Level</th>
<th>Course</th>
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<tbody>
<tr>
<td>Level I</td>
<td>ESL-010</td>
<td>N4</td>
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<td>ESL-017</td>
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<td>ESL-021</td>
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<tr>
<td>Level II</td>
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<tr>
<td>Level III</td>
<td>ESL-033</td>
<td>N6</td>
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<tr>
<td></td>
<td>ESL-040</td>
<td>N1</td>
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Note: ESL-040 ESL Writing Review is a brief restricted course that is scheduled three times a year upon the conclusion of the current semester. Students are placed in this course according to the final score they receive in ESL-033 Writing III

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Graduate Diploma, La Trobe University
B.A., The Savannah College of Art and Design
Courses

ESL-010. ESL Reading I. 0 Credits.
LECT 4 hrs
This course introduces ESL students to the basic reading skills and academic vocabulary needed to manage college-level texts. The texts examine aspects of American culture with an emphasis on the college experience. Students are expected to respond to texts with discussions and writing.
Prerequisites: Appropriate placement test scores.

ESL-017. ESL Writing I. 0 Credits.
LECT 8 hrs
This course introduces students to basic grammar, sentence structure, vocabulary and American English writing conventions with an emphasis on the paragraph. Listening comprehension, speaking, reading and writing are reinforced and practiced.
Prerequisites: Appropriate placement test scores.

ESL-019. ESL Reading II. 0 Credits.
LECT 4 hrs
This course furthers the reading skills introduced in ESL Reading I. The course texts enhance cultural awareness and prepare ESL students to comprehend college-level texts in English. Students also continue to develop their academic vocabulary.
Prerequisites: ESL-010 or appropriate placement test scores.

ESL-020. ESL Writing II. 0 Credits.
LECT 8 hrs
This course expands the grammatical and writing skills introduced in Writing I. It presents narrative and descriptive short compositions and more complex sentence structure and grammar. Grammar topics include major tenses, gerunds, infinitives, passives, relative clauses, modals and noun clauses.
Prerequisites: ESL-017 or appropriate placement test scores.

ESL-021. Conversational English. 0 Credits.
LECT 3 hrs
This course provides ESL students with the basis for effective verbal communication in the academic setting. Students learn American English pronunciation, basic presentation skills and idiomatic expressions to prepare for participation in the college classroom.
Prerequisites: Appropriate placement test scores.

ESL-022. Advanced Conversational English. 0 Credits.
LECT 3 hrs
This course furthers the skills introduced in Conversational English. Students learn grammar, idioms which focus on classroom communication, and American English pronunciation to advance their presentation skills.
Prerequisites: ESL-021 or appropriate placement test scores.

ESL-033. Writing III. 0 Credits.
LECT 6 hrs
This course advances students' academic writing skills in English by refining essay structure for narrative and descriptive essays and improving knowledge and use of standard English grammar rules, mechanics and punctuation. Topics include major tenses, gerunds, infinitives, passives, articles, sentence structure, parallelism, subject-verb agreement, commas and apostrophes. Students who pass ESL-033 exit the ESL program.
Prerequisites: ESL-020 or appropriate placement test score.

ESL-040. ESL Writing Review. 0 Credits.
LECT 1 hr
This is an intensive review course for ESL-033 students who need to strengthen their academic English skills before exiting the ESL program. The course focuses on problematic areas of English language usage and helps students to remedy deficiencies in these areas. Students are placed in this course according to the final score they receive in ESL-033.
Prerequisites: ESL-033.

Exercise Science

Associate in Science Degree

This program prepares students to transfer to baccalaureate programs in Exercise Science, Exercise Physiology, Adult Fitness, Personal Training, Physical Therapy, Cardiac Rehabilitation, Kinesiology, Athletic Training, Physical Education and similar curricula. Graduates of such baccalaureate programs find employment in health and wellness management, health center and fitness center program management, corporate health and wellness programs, health and physical education teaching, exercise physiology teaching and research, medical exercise rehabilitation programs, adult fitness programs and related fields. The curriculum includes general education requirements, a basic science and math foundation and a broad base in discipline-related courses such as exercise physiology, nutrition, kinesiology and exercise measurement and prescription.

If you are considering a career in Health/Physical Education teaching, please read about the County College of Morris Teacher Education Specialization in Health/Physical Education (p. 217).

For more information, visit the Exercise Science (http://www.ccm.edu/academics/degrees/exercisesci.aspx) website.

Degrees

AS Exercise Science

(P2960)

General Education Foundation

<table>
<thead>
<tr>
<th>Category</th>
<th>Credits</th>
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<tr>
<td>Communication</td>
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<tr>
<td>ENG-111 English Composition I</td>
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<tr>
<td>ENG-112 English Composition II</td>
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<tr>
<td>Math-Science-Technology</td>
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<tr>
<td>Mathematics Restricted Elective</td>
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<tr>
<td>CMP-135 Computer Concepts with Applications</td>
<td></td>
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<tr>
<td>Laboratory Science Restricted Elective</td>
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Social Science 3

Exercise Science
**PSY-113**  General Psychology
Humanities 3
Choose from General Education course list
**General Education Electives**  9
**COM-109**  Speech Fundamentals

**Electives**

**General Education Foundation Credits** 31

**Exercise Science Core**
**HES-111**  Introduction to Exercise Science 3
**BIO-101**  Anatomy and Physiology I 4
**BIO-102**  Anatomy and Physiology II 4
**HES-211**  Kinesiology 3
**HED-295**  First Aid and Emergency Care 3
**HED-283**  Cardiopulmonary Resuscitation 1
**HES-212**  Exercise Physiology 3
**HED-115**  Personal and Family Nutrition 3
**HED-286**  Personal Health and Wellness 3
**HED-213**  Exercise Measurement and Prescription 3
**Exercise Science Restricted Electives** 2
**Exercise Science Core Credits** 32

Total Credits 63

**Courses**

**HED-112. Drugs, Society and Human Behavior. 3 Credits.**
LECT 3 hrs
This course examines the effects drugs have on the individual and society, taking a critical look at the most recent scientific data drawn from medical, sociological and student research. Topics include, but are not limited to, neurophysiology, pharmacology and the demographics of drug use, legal issues, and treatment and prevention programs. Different types of drugs are examined.

**Additional Fees:** Course fee applies.

**HED-115. Personal and Family Nutrition. 3 Credits.**
LECT 3 hrs
In this course, students study the relationships of nutrition and eating patterns to one's health, nutritive value and composition of foods, metabolism, functions and requirements of nutrients throughout life, and essentials of an adequate diet. Emphasis is placed on the practical application of nutrition concepts in everyday life.

**Additional Fees:** Course fee applies.

**HED-128. Lifetime Wellness. 2 Credits.**
LECT 1 hr, LAB 2 hrs
This course is designed to provide students with the knowledge and skills necessary to make intelligent decisions about health and wellness. Topics include nutrition and weight management, substance abuse, stress management, fitness, cardiovascular disease and sexually transmitted diseases. Students engage in personally selected programs to improve wellness.

**Additional Fees:** Course fee applies.

**HED-130. Mind-Body Health. 3 Credits.**
LECT 3 hrs
This course explores the relationship between the mind and the body. Emphasis is placed on relaxation, meditation, and yoga to enable students to reach a state of peace, calmness and self-awareness. Students explore the integration of the entire self in order to achieve an understanding and an awareness of their own selves and take control of their wellness.

**Additional Fees:** Course fee applies.

**HED-132. Stress Management. 1 Credit.**
LECT 1 hr
This course provides students with an understanding of the basic principles of the stress response, the General Adaptation Syndrome, stressors and stress management. Students participate in physical and cognitive exercises designed to reduce stress.

**Additional Fees:** Course fee applies.

**HED-133. Weight Management. 1 Credit.**
LECT 1 hr
This course covers information about lifetime weight management. The role of diet, exercise, behavior modification and stress management and their relationship to weight management are emphasized. Students analyze diets, set goals and apply a weight management program to themselves throughout the course.

**Faculty**

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HED-283. Cardiopulmonary Resuscitation. 1 Credit.
LAB 2 hrs
This course is taught according to American Heart Association (AHA) guidelines. Students learn about heart disease prevention, early recognition of heart attack and stroke, early access to Emergency Medical Services, and recognition and treatment for respiratory arrest, cardiac arrest and obstructed airway emergencies. Students who successfully complete the requirements will receive an AHA CPR card (BLS for Healthcare Provider CPR). This course is available through the Division of Corporate and Community Programs. Students enrolled in the majors of Nursing, Radiography, Respiratory Therapy, Exercise Science, and Early Childhood Education may request that they receive 1 credit toward their HED/HES requirement. Students must present a valid American Heart Association CPR card (BLS for Healthcare Provider CPR) to the Office of Records and Registration to receive credit. Course fees do not represent income to the AHA or any of its components.
Additional Fees: Course fee applies.

HED-286. Personal Health and Wellness. 3 Credits.
LECT 3 hrs
This course examines current health and wellness topics that have an impact on the individual in today’s society. Emphasis is on a wellness approach, examining the physical, emotional, intellectual, social and spiritual dimensions of health. Students engage in evaluations of their own wellness behaviors and investigate in detail at least one health issue of personal significance. (There is no substitution for this course in programs that require it for degree completion.)
Additional Fees: Course fee applies.

HED-293. Special Topics in Health Education. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Health Education. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: A three-credit introductory course in Health Education.

HED-294. Special Topics in Health Education. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Health Education. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: A three-credit introductory course in Health Education.

HED-295. First Aid and Emergency Care. 3 Credits.
LECT 3 hrs
A basic course in first aid which acquaints students with information about prevention of accident and injury and about emergency assessment, recognition and treatment of trauma and sudden illnesses. Upon successful completion of the requirements, the student will receive First Aid certification.
Additional Fees: Course fee applies.

HES-104. Foundations of Personal Training. 3 Credits.
LECT 3 hrs
This comprehensive class is ideal for anyone preparing for the ACSM, NASM or ACE Personal Trainer exam and those who want to pursue a career in personal training. Course content includes anatomy, applied exercise science, kinesiology, professional roles and responsibilities. ACSM course curriculum is followed. Open to Personal Trainer Certificate of Achievement (Curriculum 0950) students only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

HES-106. Personal Trainer Field Experience. 1 Credit.
COOP 1 hr
This course provides Personal Trainer Certificate of Achievement students with the opportunity to work with clients in the field. Students are linked with professionals in health clubs and commercial and corporate fitness centers who mentor their progress. Arrangements for this field experience must be coordinated through the field experience instructor. Students must accomplish a minimum of 45 hours in one semester in their field experience and write a report of the experience.
Prerequisites: HES-104, open to Personal Trainer Certificate of Achievement students only.

HES-107. Program Design and Implementation. 3 Credits.
LECT 3 hrs
This course provides students with the practical application of current testing procedures and instrumentation used in exercise testing. Students learn to perform and interpret the basic measurement protocols for cardiorespiratory endurance, muscular strength and endurance, flexibility, body composition, and blood pressure. Students learn the principles related to exercise prescription, develop the necessary skills to design and implement training programs as they relate to the components of fitness. Safeguards and effectiveness for all fitness levels are addressed.
Prerequisites: HES-104, open to Personal Trainer Certificate of Achievement students only
Additional Fees: Course fee applies.

HES-111. Introduction to Exercise Science. 3 Credits.
LECT 3 hrs
This course is recommended in the first semester. This is an introductory course to acquaint students with the development and structure of the field of exercise science. The current scientific development of the field is stressed, with emphasis on basic exercise physiology, health and fitness. Open to Exercise Science majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

HES-125. Stretching and Strengthening. 1 Credit.
LAB 2 hrs
This course provides a thorough presentation of exercises for improving strength and flexibility without the need for special equipment. Emphasis is on exercising safely and learning the importance of strength and flexibility in conditioning, injury prevention and rehabilitation. It is designed to give students the tools with which to create a personal exercise program. Students need to supply their own exercise mats.
Additional Fees: Course fee applies.
HES-126. Personal Fitness. 1 Credit.
LAB 2 hrs
Students design and practice an exercise program that develops selected components of physical fitness. Each student undertakes assessments of various components of fitness.
**Additional Fees:** Course fee applies.

HES-127. Weight Training. 1 Credit.
LAB 2 hrs
Basic principles of resistance (weight) training are taught, emphasizing training for general conditioning. Training programs for major muscle groups are developed and practiced. Equipment used includes free weights and some machines.
**Additional Fees:** Course fee applies.

HES-128. Yoga. 1 Credit.
LAB 2 hrs
This is an introductory course in yoga covering basic hatha yoga postures and exercises. Breathing techniques, flexibility and muscular endurance are enhanced. The course helps relieve stress and develop a sense of peacefulness and tranquility while improving fitness. Students need to supply their own exercise mats.
**Additional Fees:** Course fee applies.

HES-129. Self-Defense. 1 Credit.
LAB 2 hrs
This course provides students with the knowledge and skills to judge potential threats and react swiftly to defend themselves. Social and psychological effects of violence are discussed, along with legal issues of self defense. The basic techniques of Tae Kwon-Do, Jui-Jitsu and Aikido are introduced for everyday usage. A martial arts attitude is developed.
**Additional Fees:** Course fee applies.

HES-130. Tai Chi. 1 Credit.
LAB 2 hrs
Tai Chi is a low-impact form of oriental exercise that increases energy, balance and overall health. Total mind-body interaction is emphasized. This course is a gentle means to contribute to overall health and fitness.
**Additional Fees:** Course fee applies.

HES-131. Pilates. 1 Credit.
LAB 2 hrs
Pilates is a form of exercise that conditions the muscles through specific strength exercises without creating bulk. Based on the system introduced by Joseph Pilates over 70 years ago, exercises are done on both the mat and machines. Emphasis is on the core strength and flexibility of the abdomen and back, as well as other major body areas. Pilates is an exercise system that also concentrates on mind-body connection and correct postural alignment to gain optimal health and fitness. Students need to supply their own exercise mats.
**Additional Fees:** Course fee applies.

HES-132. Cardio Conditioning. 1 Credit.
LAB 2 hrs
This course provides the student with the underlying principles of cardiovascular fitness and the opportunity to participate in activities designed to improve cardiovascular fitness, firm muscles, reduce fat and cope with stress.
**Additional Fees:** Course fee applies.

HES-141. Personal Challenge I. 1 Credit.
LAB 2 hrs
This activity course focuses on the importance of reaching beyond the individual and utilizing group resources to solve problems through trust, teamwork, communications, self-esteem building, group problem-solving skills, decision making and fun. Students execute safely a series of adventure activities involving wall climbing, rope hanging, game playing and cable walking in order to enable the group to cross real and imaginary boundaries. All activities are individualized so that any student may successfully participate. Taught off-campus.
**Additional Fees:** Course fee applies.

HES-162. Basic Swimming. 1 Credit.
LAB 2 hrs
This course is designed for the non-swimmer or beginner swimmer who has had little or no instructional experience and who may feel uncomfortable in the water. Through this course, one gains basic swimming and diving skills progressing from shallow to deepwater swimming. The National American Red Cross Swimming Levels I-III is covered.
**Additional Fees:** Course fee applies.

HES-182. Golf I. 1 Credit.
LAB 2 hrs
A beginner's study and practice of the fundamental skills and basic rules of the game of golf. Topics include the make-up of the course, the grip, swing and stance, the equipment, and the rules. A portion of the course is held off campus at local golf facilities.

HES-186. Badminton. 1 Credit.
LAB 2 hrs
A beginning course which introduces the student to the basic strokes, rules and fundamental strategies of the game of badminton. Emphasis is placed on the utilization of newly acquired skills in game situations.
**Additional Fees:** Course fee applies.

HES-187. Volleyball. 1 Credit.
LAB 2 hrs
This course develops techniques, skills and strategies of volleyball. Emphasis is on the development of the basic skills essential for success and enjoyment.

HES-211. Kinesiology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course emphasizes the analysis of the principles of movement through human anatomical design. Major joints of the body, their actions and the muscles that do those actions are stressed. Application to physical exercise is stressed in lab work on strength, endurance and potential motion of major joints.
**Prerequisites:** BIO-101
**Additional Fees:** Course fee applies.
HES-212. Exercise Physiology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course includes the study of human responses and adaptations to exercise of varying levels of stress and intensity. Major topics include bioenergetics, the physiology of the circulatory, respiratory, muscular and nervous systems as they apply to exercise, and the underlying physiological basis of fitness. Laboratory experiences illustrate practical application of theoretical content with hands-on experiences to measure and apply what is learned in the lecture component of the course.
Prerequisites: BIO-101, BIO-102 and HES-111, open to Exercise Science majors only
Additional Fees: Course fee applies.

HES-213. Exercise Measurement and Prescription. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course stresses the appropriate measurement of various aspects of human exercise. Measurement of body composition, cardiovascular efficiency, muscular strength and endurance and other physiological parameters are taught and practiced. Students learn how to develop individualized and properly designed exercise prescriptions for adults, including special populations.
Prerequisites: HES-212 (minimum grade of C) Open to Exercise Science majors only
Additional Fees: Course fee applies.

HES-291. Special Topics in Exercise Science. 1 Credit.
LAB 2 hrs
An examination of selected topics or issues in Exercise Science. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Exercise Science.

HES-292. Special Topics in Exercise Science. 1 Credit.
LAB 2 hrs
An examination of selected topics or issues in Exercise Science. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: HES-111.

Fire Science Technology

Associate in Applied Science Degree

This program is for individuals interested in such public sector careers as municipal firefighters, fire inspectors, fire investigators, fire technicians and fire protection engineers. Opportunities in the private sector include industrial firefighters, fire protection specialists, fire protection engineers, fire investigators and loss control consultants. Potential employers for graduates of this program would be governmental agencies, private industry, fire equipment manufacturers and vendors, and the insurance industry.

Graduates are expected to:

• Have a working understanding of the field of Fire Science
• Understand fire safety codes, code enforcement and effective inspection
• Identify fire pattern, cause, origins and arson
• Understand and evaluate the organization and management of fire service systems

• Develop skills in using the most advanced fire science technology

This is a joint offering with Passaic County Community College (PCCC). The technical core\(^1\) of the Fire Science curriculum is offered by PCCC to County College of Morris (CCM) students as online courses or live classes offered via the college’s Interactive Television (ITV) system. CCM students enrolled in the ITV courses may choose to travel to PCCC’s state-of-the-art facility in Passaic County Public Safety Academy in Wayne to sit in the live classroom. The remaining courses are offered through CCM.

For more information, visit the Fire Science [website](http://www.ccm.edu/academics/degrees/firesci.aspx) 1 Courses with FST designation.

Degrees

AAS Fire Science Technology
(P3460)

General Education Foundation

Communication 6
ENG-111 English Composition I
ENG-112 English Composition II
Math-Science-Technology 3-4
Mathematics Elective
Social Science 3
PSY-113 General Psychology
General Education 9
SOC-120 Principles of Sociology
Diversity Elective
Technology Elective
General Education Foundation Credits 21-22

Fire Science Technology Core

FST-101 Introduction to Fire Science 3
FST-102 Fire Prevention and Related Codes 3
FST-201 Fire Service Management 3
FST-202 Hazardous Materials 3
FST-204 Fire Protection, Building Construction 3
FST-210 Current Issues in Fire Science/ Capstone Experience 3
Fire Science Electives 15-16
BIO-127 Biology of Environmental Concerns 4
or PHY-118 Meteorology
Health and Wellness 2
Fire Science Technology Core Credits 39-40

Total Credits 60-62
**Faculty**

Venancio L. Fuentes, P.E.
Chairperson, Engineering Technologies/Engineering Science
Professor, Engineering Technologies
MEE, Stevens Institute of Technology
BEE, Stony Brook University
SH 303 973-328-5766 vluentes@ccm.edu

Dr. William Solomons
Assistant Chair, Assistant Professor, Criminal Justice
Ph.D., Capella University
M.A., Seton Hall University
B.A., CUNY John Jay College of Criminal Justice
SH 203 973-328-5648 wsoolomons@ccm.edu

**Courses**

**FST-101. Introduction to Fire Science. 3 Credits.**
LECT 3 hrs
This course is considered to be the foundation course for all students of Fire Science Technology. Students are introduced to the concept of the systems approach to fire protection by presenting the components of modern fire department responsibility including emergency incident management, public education, training, resource management and customer service. Students who have completed their Fire Fighter 1 will receive credit for this course.

**FST-102. Fire Prevention and Related Codes. 3 Credits.**
LECT 3 hrs
This course provides students with basic knowledge of federal, state and local codes related to building construction, fire and life safety requirements, and other codes. Includes New Jersey state fire safety regulations and related state requirements. National Fire Protection Association (NFPA) and other standards related to fire protection and life safety are examined. Students who have completed their Fire Fighter 1 will receive credit for this course.

**FST-103. Fire Fighting Tactics and Strategy. 3 Credits.**
LECT 3 hrs
Analysis of the basic rules of fire fighting strategy, defining engine company responsibilities, defining ladder company functions, correlating mutual aid fires and general fire problems. Studies the effective management of suppression forces at various fire situations. Includes consideration of pre-fire planning, problem identification and solution implementation.

**FST-104. Fire Protection, Building Construction. 3 Credits.**
LECT 3 hrs
A study of the nature of public and private fire protection with an emphasis on analysis of systems of fire detection, fire alarm, fire communications, water distribution networks, fire service, hydraulics and fire suppression.
**Prerequisites:** Permission of department chair.

**FST-105. Fire Investigation. 3 Credits.**
LECT 3 hrs
An in-depth course that defines successful methods for conducting fire investigations. Specific topics include basic chemistry of fire, point of origin, fire cause (both accidental and incendiary), motivation of the fire setter, fire scene investigations, evidence collection, photography, follow-up investigation and court testimony.

**FST-106. Fire Hydraulics. 3 Credits.**
LECT 3 hrs
This course is a concentrated study in the application of mathematics and physics to the properties of water as used in fire suppression operations. Classic hydraulics formulas are used to solve problems for flow velocity, nozzle reaction, friction loss, water distribution systems, fire flow testing, fire service pumps and fire ground hose evolutions.
**Prerequisites:** MAT-007 or passing score on the algebra section of the placement test.

**FST-107. Fire Apparatus Specifications, Inspections and Maintenance. 3 Credits.**
LECT 3 hrs
This course covers the principles of care, maintenance and operation of fire apparatus and pumps. Includes pump construction and accessories, pumping techniques, power development and transmission. Also includes driving, troubleshooting and producing effective fire streams.

**FST-201. Fire Service Management. 3 Credits.**
LECT 3 hrs
This course introduces the student to the principles of personnel management through the use of effective leadership techniques. Topics include overview of the fire service as an organization and the officer's role in it, interpersonal communications, personality typing, skill development, leadership techniques, group dynamics and principles of fire company management.
**Prerequisites:** FST-101 or equivalent.

**FST-202. Hazardous Materials. 3 Credits.**
LECT 3 hrs
A comprehensive study of the physical, chemical and toxicological characteristics of hazardous materials. This course includes basic methods of recognition and identification based upon the chemical and physical properties of hazardous materials, basic safety procedures when utilizing specific types of protective clothing and equipment, and basic tactical information relating to scene management.
**Prerequisites:** MAT-007 or passing score on the algebra section of the placement test.

**FST-203. Fire Protection, Building Construction. 3 Credits.**
LECT 3 hrs
This course introduces basic construction principles and the special characteristics of wood and ordinary construction as they concern the fire service. Primary emphasis is on improving the fire officer's ability to ensure firefighter safety by recognizing common causes and indicators of failure and other hazards relating to building construction. Course material enables the fire officer to better predict the overall reaction of a building to fire conditions.

**FST-204. Fire Protection, Building Construction. 3 Credits.**
LECT 3 hrs
This course introduces basic construction principles and the special characteristics of wood and ordinary construction as they concern the fire service. Primary emphasis is on improving the fire officer's ability to ensure firefighter safety by recognizing common causes and indicators of failure and other hazards relating to building construction. Course material enables the fire officer to better predict the overall reaction of a building to fire conditions.

**FST-205. Fire Investigation. 3 Credits.**
LECT 3 hrs
This course introduces basic construction principles and the special characteristics of wood and ordinary construction as they concern the fire service. Primary emphasis is on improving the fire officer's ability to ensure firefighter safety by recognizing common causes and indicators of failure and other hazards relating to building construction. Course material enables the fire officer to better predict the overall reaction of a building to fire conditions.

**FST-206. Fire Hydraulics. 3 Credits.**
LECT 3 hrs
This course is a concentrated study in the application of mathematics and physics to the properties of water as used in fire suppression operations. Classic hydraulics formulas are used to solve problems for flow velocity, nozzle reaction, friction loss, water distribution systems, fire flow testing, fire service pumps and fire ground hose evolutions.
**Prerequisites:** MAT-007 or passing score on the algebra section of the placement test.
FST-207. Emergency Medical Technician. 6 Credits.
LECT 4 hrs, LAB 4 hrs
This course is designed to prepare the basic Emergency Medical Technician in accordance with the United States Department of Transportation curriculum and the New Jersey Department of Health guidelines. This course covers an introductory survey of emergency medical services including medical, legal/ethical aspects, role of the Emergency Medical Technician, patient assessment, care of wounds and fractures, airway maintenance, medical and environmental emergencies, patient transportation, emergency childbirth and basic extrication. After completion of this course, the student will be eligible to take the National Registry Examination for certification as an Emergency Medical Technician-Basic. Students who are already registered EMT-Basic in New Jersey will be given credit for this course.

FST-210. Current Issues in Fire Science/ Capstone Experience. 3 Credits.
LECT 3 hrs
A review of the current problems affecting the fire service with particular emphasis on resource allocation, planning and fiscal constraints. The capstone experience requires the student to author and present a scholarly research paper on a topic covered in this course. Students must have completed 40 credit hours in the Fire Science Curriculum or have permission of department chair.
Prerequisites: Permission of department chair.

Graphic Design

Associate in Applied Science Degree

The Graphic Design program prepares students for entry-level positions as graphic designers, production artists, junior art directors, web production artists, website designers and other entry-level interactive media positions.

Majors can also graduate and transfer to a four-year college, university or art school with a portfolio that makes a difference. Students get a personal portfolio review at least twice before graduation. Graphic design courses include constantly advancing technology. Students learn creative problem solving, critical thinking, presentation skills, computer skills and get a real-world experience. Students take foundation courses in art and graphic design and select electives in advertising, magazine production, web-page design, animation, video, television graphics, digital photography, illustration, interior design and more.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

For more information, visit the Graphic Design (http://www.ccm.edu/academics/degrees/graphicdesign.aspx) website.

Degrees

AAS Graphic Design
(P3560)

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<tbody>
<tr>
<td>Communication</td>
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ENG-111 English Composition I
ENG-112 English Composition II
Math-Science-Technology 7-9
Choose from General Education course list
Mathematics (3/4 CR)
Laboratory Science (4 CR for transfer students)
Science (3 CR for transfer students)
Technology (0/1 CR)
Social Science or Humanities 3
Choose from General Education course list
General Education Electives 6
ART-133 Art History I
ART-134 Art History II
General Education Foundation Credits 22-24
Visual Arts Core
GRD-110 History of Graphic Design (Required) 3
ART-122 Drawing I 3
ART-130 Two Dimensional Design 3
PHO-115 Photography I 3
GRD-120 Graphic Design I 3
GRD-220 Graphic Design II 3
GRD-111 Introduction to Computer Graphics 3
GRD-116 Electronic Prepress 3
GRD-118 Typography I 3
GRD-218 Typography II 3
GRD-227 Portfolio Project 3
GRD-250 Brochure and Magazine Design 3
Graphic Design Electives 3
GRD-262 Branding for the Web and Other Media 3
Visual Arts Core Credits 42
Total Credits 64-66

Faculty

Stephen H. Longo
Professor, Graphic Design
Special Projects, Graphic Design
M.S., Pratt Institute
BFA, New York Institute of Technology
EH 111 973-328-5438 slongo@ccm.edu

Yvonne Bandy
Associate Professor, Visual Arts
M.A., Nyack Alliance Theological Seminary
M.S., Pratt Institute
BFA, Kent State University
EH 108 973-328-5442 ybandy@ccm.edu
Courses

GRD-110. History of Graphic Design. 3 Credits.
LECT 3 hrs
This is a lecture course that provides an overview of major graphic design movements and design styles. The focus is on important graphic design innovations and breakthrough technologies. The student is introduced to graphic design masters and masterpieces and is familiarized with major design studios and advertising agencies. A classic foundational textbook is recommended reading which is supported by slide presentations, videos, websites and trade articles.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

GRD-111. Introduction to Computer Graphics. 3 Credits.
LECT 2 hrs, LAB 1 hr
Instruction focuses on the use of the computer as a visual tool and the emphasis is on creative visual output. An overview of various graphic design programs such as illustration, scanning and page layout supports the creation of two-dimensional design as it applies to printed material.
Prerequisites: ART-130, ART-122 or MED-114 and Placement Basis or ENG-025 or ENG-022 or ENG-007 equivalent
Additional Fees: Course fee applies.

GRD-116. Electronic Prepress. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course provides the student with the basic vocabulary and fundamental understanding of the techniques and processes involved in both traditional mechanical layout and the contemporary counterpart of electronic prepress preparation for printed material. Students manipulate the elements of typography, photography, illustration and text to create camera-ready art and electronically ready art and finished traditional and electronic mechanicals. Field trips to a printing facility and/or service bureau may be included.
Prerequisites: ART-122, ART-130, GRD-111, GRD-118, GRD-120
Additional Fees: Course fee applies.

GRD-118. Typography I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Emphasis is based on developing a typographic vocabulary, identifying and recognizing type fonts and exploring type as design elements. Students engage in the skills of hand lettering and compositional layout while addressing letter proportion, anatomy, structure and typographic space. Communication problems emphasize typography as the primary design focus.
Prerequisites: ART-130, ART-122 or MED-114 and Placement Basis or ENG-025 or ENG-022 or ENG-007 equivalent
Additional Fees: Course fee applies.

GRD-120. Graphic Design I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course introduces professional creative problem solving in graphic design. Emphasis is based on the fundamentals of critical thinking, the critique process and effectively integrating concepts with the principles of design. Students engage in visual research, thumbnail sketching and refining rough process sketches by hand. The use of art and design to meet the communication needs of business and industry are explored.
Prerequisites: ART-122, ART-130 or MED-114 and Placement Basis or ENG-025 or ENG-022 or ENG-007 equivalent
Additional Fees: Course fee applies.

GRD-215. Commercial Illustration. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course combines studio approaches and illustration techniques with an emphasis on communication, visual interpretation and the integration of illustration with typography. Students execute product renderings, editorial illustrations and illustrations for newspapers, magazines and books. Proper use of reference material is emphasized and the development of the working sketch is explored as the foundation of the finished illustration. Emphasis is on conceptual thought, non-verbal communication and drawing techniques for reproduction.
Prerequisites: ART-122, ART-130
Additional Fees: Course fee applies.

GRD-218. Typography II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A continuation of Typography I with a concentration on creating type design solutions using the computer. Emphasis is on applying the rules of typography, using graphic software effectively, exploring visual hierarchy and engaging in interpretive typography to develop the typographic message.
Prerequisites: GRD-111, GRD-118, GRD-120
Additional Fees: Course fee applies.

GRD-220. Graphic Design II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A continuation of Graphic Design I with an exploration of more advanced design problem solving and the development of design aesthetics. Emphasis is placed on developing comprehensive layouts that meet the needs of industry standards. Projects may include branding, corporate ID, posters, packaging and select visual communication designs. Field trips to art departments, studios and agencies may be included.
Prerequisites: GRD-111, GRD-118, GRD-120
Additional Fees: Course fee applies.

GRD-227. Portfolio Project. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is an examination and application of a variety of methods for assembling and presenting graphic art and design in a professional manner. This course focuses on portfolio preparation, presentation and interview procedures. Formal and informal critiques assist the student in defining strengths and career goals.
Prerequisites: Scheduled during the final semester and permission of designated Graphic Design faculty.

GRD-229. Cooperative Work Experience-Related Class. 1 Credit.
LECT 1 hr
A related class designed to supplement work experience. Weekly meetings include readings, discussions, written assignments and critical analysis of the work experience.
Prerequisites: GRD-111, GRD-116, GRD-118, GRD-120, GRD-220 or GRD-225 and Portfolio Review with permission of department chair
Corequisites: GRD-232.
GRD-230. Computer Assisted Illustration. 3 Credits.  
LECT 2 hrs, LAB 3 hrs  
A continuation of the study of commercial illustration techniques with the integration of typography. Students explore computer color illustration and image manipulation, and work with scanned photography, digitized illustrations, laser and inkjet prints. Students execute product and editorial illustrations with an emphasis on combining fine art and graphic art processes to create sophisticated portfolio projects.  
Prerequisites: GRD-111, GRD-118, GRD-120  
Additional Fees: Course fee applies.

GRD-232. Graphic Design Internship/Cooperative Work Experience. 3 Credits.  
LECT 3 hrs  
Practical work experience within the realm of graphic design and advertising. Students perform work for cooperating employers in advertising agencies, graphic design studios or corporate art departments. Practical work experience may include design assignments at printing facilities or other communication-based businesses.  
Prerequisites: GRD-111, GRD-116, GRD-118, GRD-120, GRD-220, GRD-250, GRD-255. A minimum 2.5 GPA and portfolio review with permission by designated Graphic Design faculty is required  
Corequisites: GRD-229.

GRD-240. Computer Assisted Page and Cover Design. 3 Credits.  
LECT 2 hrs, LAB 3 hrs  
This is an intermediate lecture/studio course designed to further develop skills in publication design with the goal of designing the Promethean Literary and Arts magazine. In the professional environment of a publication design studio format, students work as a creative team of editors, designers and proofreaders to develop the Promethean from concept to final product, under a specialist’s supervision. Lecture topics include organizational planning, purpose, content, typeface selection, illustration/photography, paper stock, bindings, covers and management skills. Utilizing current industry software, students have the opportunity to design and produce a finished professional in-house publication for the College and for their portfolios. Graphic design issues, historical, cultural and technical, are addressed in the design of the Publication.  
Prerequisites: Approval of the Graphic Design Special Projects Leader  
Additional Fees: Course fee applies.

GRD-250. Brochure and Magazine Design. 3 Credits.  
LECT 1 hr, LAB 4 hrs  
This course trains the person familiar with traditional layout procedures. It stresses transferring manual board skills to the electronic screen. Brochures, magazines, web pages, newspaper pages and a variety of other print materials are practiced. This course examines theory, styles, trends and the mechanics of cover and page design to create portfolio projects.  
Prerequisites: GRD-111, GRD-118, GRD-120  
Additional Fees: Course fee applies.

GRD-255. Advertising Design. 3 Credits.  
LECT 1 hr, LAB 4 hrs  
This course is designed to further develop hands-on skills in concept and design with the goal of creating an advertising campaign. In the professional environment of an ad agency format, students work as a creative team of art director and writer to research and develop the ad, radio and TV commercial from concept to final production, under a specialist’s supervision. Lecture topics include organizational planning, purpose, content, casting production techniques, illustration/photography supervision, as well as management skills, all stressed while the creative execution of the advertising takes place. Assignments consist of print ads, TV commercials, sales promotion, packaging, posters, billboards and web design. Utilizing current standard industry principles, students have the opportunity to design and produce a finished professional product for their portfolio. Advertising issues, historical, cultural and technical, are addressed. A tour of a Manhattan ad agency might be included.  
Prerequisites: permission of department chair  
Additional Fees: Course fee applies.

GRD-262. Branding for the Web and Other Media. 3 Credits.  
LECT 1 hr, LAB 4 hrs  
The course will be approached from a graphic design page layout perspective. Students will apply the principles learned in Graphic Design to arrive at a well-designed brand identity and presence that works within the overall semiotic branding experience for the Web and other media. Students will need the full use of a current Macintosh computer.  
Prerequisites: ART-122, ART-130, GRD-111, GRD-118 and GRD-120.

GRD-291. Special Topics in Graphic Design. 3 Credits.  
LECT 2 hrs, LAB 3 hrs  
An examination of selected topics or issues in Graphic Design. Topics may differ each time the course is offered. Students should consult designated Graphic Design faculty for further information.  
Prerequisites: A selected course in Graphic Design  
Additional Fees: Course fee applies.

GRD-292. Special Topics in Graphic Design. 3 Credits.  
LECT 3 hrs  
An examination of selected topics or issues in Graphic Design. Topics may differ each time the course is offered. Students should consult designated Graphic Design faculty for further information.  
Prerequisites: A selected course in Graphic Design  
Additional Fees: Course fee applies.

GRD-293. Special Topics in Graphic Design. 1 Credit.  
LECT 1 hr  
An examination of selected topics or issues in Graphic Design. Topics may differ each time the course is offered. Students should consult designated Graphic Design faculty for further information.  
Prerequisites: Permission of special projects leader and department chair.

Honors Study

County College of Morris offers both full- and part-time students the opportunity to take Honors courses and/or earn an Honors degree in their major or program of study. Honors courses are offered in the more general academic areas that are requirements for most majors. They are designed to help superior students develop their special talents, interact with other individuals of similar abilities, and
enjoy an intensive and stimulating learning atmosphere. Those who qualify may take as many Honors courses as desired.

An Honors degree provides exceptional students with unique study and learning opportunities to prepare them for highly specialized fields of work or transfer to the best colleges and universities in the United States. To earn an Honors degree, students enrolled in Associate in Applied Science programs must complete 16 credits of Honors courses. Students enrolled in Associate in Arts, Associate in Fine Arts, and Associate in Science programs must complete 18 credits.

Both Honors degree candidates and those students who decide to take various Honors courses meet regularly with the Honors adviser, become part of a small community of scholars engaged in sophisticated levels of inquiry, and can apply for Honors scholarships set aside for academic excellence. Special recognition of Honors study is indicated on student transcripts and on the diplomas of those who attain the degree.

Students can apply to take Honors courses or seek an Honors degree directly from high school or while enrolled at the college. Admission from high school requires an SAT score of at least 1240 or ACT equivalent. Any student who does not fulfill these requirements but still wishes to take honors courses should speak with the honors adviser.

For complete details about an Honors degree, the courses of study, application and scholarship information, please contact the Honors adviser.

Courses

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<tr>
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<th>Course Title</th>
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<td>BIO-180</td>
<td>General Biology I - Honors</td>
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<td>BIO-181</td>
<td>General Biology II - Honors</td>
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<td>ENG-123</td>
<td>Introduction to Linguistics - Honors</td>
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<td>English Composition I Honors</td>
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<td>English Composition II Honors</td>
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<td>ENG-283</td>
<td>World Literary Traditions: Beginnings - 1650- Honors</td>
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<td>ENG-284</td>
<td>World Literary Traditions: 1650 to Present: Honors</td>
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<td>HIS-181</td>
<td>The Middle Ages-Honors</td>
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<tr>
<td>HIS-183</td>
<td>Modern Social Thought - Honors</td>
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<tr>
<td>HIS-184</td>
<td>Early Modern Europe - Honors</td>
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<td>HIS-185</td>
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<td>PHL-180</td>
<td>Introduction to Philosophy-Honor</td>
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<td>PHL-280</td>
<td>Ancient Philosophy-Honors</td>
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<tr>
<td>PSY-180</td>
<td>General Psychology - Honors</td>
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<td>PSY-292</td>
<td>Honors Abnormal Psychology</td>
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<tr>
<td>SOC-180</td>
<td>Principles of Sociology - Honors</td>
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</table>

Hospitality Management

Associate in Applied Science Degree

The hospitality industry encompasses the hotel, restaurant, travel, tourism and leisure management industries as well as other fields. This degree focuses on the areas of lodging such as luxury, convention, all-suite, casino and resort hotels. Students may also elect to study travel and tourism, meeting and event planning and management, bar and beverage management, and hospitality marketing. The Hospitality Management program provides academic and practical training for those students interested in future management positions. Transfer opportunities are available for those who wish to complete a bachelor's degree in this field. Students may also participate in a paid cooperative work experience which delivers valuable practical management and technical training.

For more information, visit the Hospitality Management website.

Please visit the Culinary Arts and Science catalog page for information on that program.

Degrees

AAS Hospitality Management (p. )

AAS Restaurant and Culinary Management (p. )

AAS Hospitality Management (P3420)

General Education Foundation

Communication 6

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<td>ENG-112</td>
<td>English Composition II</td>
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Math-Science-Technology 6-8

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<td>Laboratory Science/Technology Elective</td>
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Choose from General Education course list

General Education Electives 6

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<tr>
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<td>Elements of Economics</td>
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<tr>
<td>ECO-211</td>
<td>Principles of Economics I Macroeconomics</td>
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Choose from General Education course list

General Education Elective

General Education Foundation Credits 21-23

Hospitality/Business Core

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<td>Serv-Safe Food Handling</td>
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<tr>
<td>HOS-101</td>
<td>Introduction to Food</td>
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<tr>
<td>HOS-102</td>
<td>Food Management</td>
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<td>HOS-106</td>
<td>Success in Hospitality</td>
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<tr>
<td>HOS-118</td>
<td>Introduction to the Hospitality Industry</td>
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<tr>
<td>HOS-120</td>
<td>Hotel/Hospitality Management</td>
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<tr>
<td>HOS-211</td>
<td>Human Resource Management in the Hospitality Industry</td>
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<table>
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<td>PSY-292</td>
<td>Honors Abnormal Psychology</td>
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<td>SOC-180</td>
<td>Principles of Sociology - Honors</td>
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<td>HOS-213</td>
<td>Food and Beverage Purchasing and Cost Controls</td>
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<tr>
<td>HOS-240</td>
<td>Hotel Operations</td>
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<tr>
<td>Co-op/Internship Work Experience</td>
<td>1-3</td>
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<td>ACC-108</td>
<td>Accounting for Hospitality</td>
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<tr>
<td>BUS-112</td>
<td>Introduction to Business</td>
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<td>BUS-213</td>
<td>Business Law I</td>
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<td>Hospitality/Business Core Credits</td>
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**Two courses in the below concentrations:** 6

**Hotel**

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<tbody>
<tr>
<td>HOS-234</td>
<td>Meeting and Event Sales, Planning, and Management</td>
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<td>HOS-235</td>
<td>Restaurant Operations</td>
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**Restaurant**

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<td>World Cuisines</td>
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<td>Principles of Travel and Tourism</td>
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**Hospitality**

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<td>Introduction to Food</td>
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<td>HOS-102</td>
<td>Food Management</td>
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<td>HOS-103</td>
<td>Food Production</td>
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<td>HOS-106</td>
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<td>HOS-118</td>
<td>Introduction to the Hospitality Industry</td>
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<td>HOS-210</td>
<td>Dining Room Management</td>
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<td>or HOS-223</td>
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<td>HOS-211</td>
<td>Human Resource Management in the Hospitality Industry</td>
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<td>Food and Beverage Purchasing and Cost Controls</td>
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<td>Accounting for Hospitality</td>
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<td>BUS-112</td>
<td>Introduction to Business</td>
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**AAS Restaurant and Culinary Management**

**(NRAEF Certification)**

**A Hospitality Management Option**

**(P3434)**

The hospitality industry is constantly changing which opens a multitude of opportunities for careers in this field. This option, within the Hospitality Management program, provides students with a focused approach to the largest segment of the hospitality industry. It also allows individual interest to drive the field of study. In this program, students have the opportunity to elect 6 credits towards exploring different areas of the hospitality industry. These may include restaurant management, culinary arts management, banquet planning, world travel and international cuisines. Upon completing this program, students enter the restaurant and culinary fields with an understanding of the work required to be successful and enthusiastic about their chosen field. Selected courses are recognized as National Restaurant Association ManageFirst Certificate courses.

**General Education Foundation**

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<thead>
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<tr>
<td>ENG-112</td>
<td>English Composition II</td>
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**Certificates of Achievement**

**Restaurant Management and Event Planning**

**A Hospitality Management Certificate of Achievement**

**(P0421)**

This Certificate of Achievement provides a concise and accelerated approach to restaurant management, the largest segment of the hospitality industry. It is offered primarily to current and future industry professionals seeking national certification from the NRAEF ManageFirst program. In addition, this combination of skills provides the perfect basis for individuals interested in the field of event planning. Event planning brings imagination and creativity to business and social events in an entrepreneurial setting.

<table>
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<td>HOS-211</td>
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HOS-213 Food and Beverage Purchasing and Cost Controls 3
For Event Planning
HOS-201 Marketing and Event Planning 3
HOS-234 Meeting and Event Sales, Planning, and Management 3
For Restaurant Management
HOS-102 Food Management 3
HOS-235 Restaurant Operations 3
Total Credits 16

**Faculty**

Mark Cosgrove, CHE  
Chairperson, Hospitality Management and Culinary Arts  
Associate Professor, Hospitality Management  
MALS, Monmouth University  
B.S., LaSalle College  
A.O.S., Culinary Institute of America  
SCC241A 973-328-5652 mcosgrove@ccm.edu

**Courses**

**HOS-100. Serv-Safe Food Handling. 1 Credit.**  
LECT 1 hr  
Students are introduced to the basic principles and guidelines of sanitation and food safety in a professional food service environment. Topics include foodborne illness, microbiology, food allergens and facility sanitation. This course provides the benchmark to begin work in a safe food production environment. Included in the course is the opportunity to receive one NRAEF Certificate (Serv-Safe Food Handling) towards the ManageFirst Certification.

**HOS-101. Introduction to Food. 3 Credits.**  
LECT 2 hrs, LAB 2 hrs  
The modern kitchen offers a multitude of opportunities to explore the world of food. From the equipment available to the bounty of fresh and processed foods that can be obtained and prepared by both the novice and the more experienced cook, this course presents an introduction to the culinary arts. While the topics are basic, the course is also a foundation to more advanced studies in food.  
Additional Fees: Course fee applies.

**HOS-102. Food Management. 3 Credits.**  
LECT 3 hrs  
The management of food and related costs in the professional environment is an underlying factor throughout the hospitality industry. This course provides the framework from which to examine any organization and understand the principles by which they operate and manage food production. Included in the course is the opportunity to receive one NRAEF certificate in Controlling Costs towards the ManageFirst Certification.

**HOS-103. Food Production. 3 Credits.**  
LECT 2 hrs, LAB 2 hrs  
The production of food in the professional environment is a demanding and time-consuming process which requires great skill. This course provides the framework from which to examine any organization and understand the principles and processes by which they prepare and manage food production. Included in the course is the opportunity to receive one NRAEF Certificate in Food Production towards the ManageFirst Certification.  
Prerequisites: HOS-101 or equivalent  
Corequisites: HOS-101 or equivalent  
Additional Fees: Course fee applies.

**HOS-105. Food Science and Nutrition. 3 Credits.**  
LECT 2 hrs, LAB 2 hrs  
This course covers the role of nutrition in food and health and the impact nutrition has on the food service industry. Students learn basic nutrition concepts and discuss current findings and controversies. Topics include foods, labels, recipes and menus for nutritional benefits, and plan diets. In laboratory sessions, students apply their knowledge of nutritional concepts to make healthier food. Included in the course is the opportunity to receive one NRAEF Certificate (Nutrition) toward the ManageFirst Certification.  
Prerequisites: HOS-100  
Corequisites: HOS-100  
Additional Fees: Course fee applies.

**HOS-106. Success in Hospitality. 1 Credit.**  
LECT 1 hr  
This course is designed to offer first-year students in Hospitality a comprehensive approach to success at CCM and in future career endeavors in the Hospitality Industry. An introduction to academic responsibility and personal growth will lead to thoughtful consideration of career goals. The planning, defining and organizing for success will be addressed on an individual basis in relation to the educational and career goals at CCM and in the future.

**HOS-111. Conversational Spanish in Hospitality. 1 Credit.**  
LAB 2 hrs  
Topics covered in this course focus on the importance of building a welcoming work environment and encouraging diversity with a Spanish employee. The hospitality industry includes hotels, restaurants, banquet halls, hospitals, schools, office buildings, government buildings, cruise ships and operate in both the private and public sectors. The positions found in these establishments range from top-management to entry-level. Many of the positions are filled by Spanish-speaking workers who have the skills to fulfill the job requirements; however, many do not speak English. The industry is recognizing this communication barrier among their employees, and the purpose of this class is to help the student become better acquainted with the Spanish language in the hospitality industry focusing on vocabulary and grammar.

**HOS-117. Introduction to Baking. 3 Credits.**  
LECT 2 hrs, LAB 2 hrs  
This is an introductory course in baking. This class introduces the student to the fundamental principles within a bakeshop and pastry kitchen. The student learns the basic baking ingredients and how they are used; weights, measurements, equipment and importance of accuracy; and basic procedure common to bakery formulas. Student create and bake breads, quick breads, muffins and assorted pies.  
Additional Fees: Course fee applies.
HOS-118. Introduction to the Hospitality Industry. 3 Credits.
LECT 3 hrs
A survey course of the hospitality industry which provides students with an overview of the role of management within the profession. Fundamentals of lodging management including luxury, convention, all-suite, gaming and resort hotels, and food service management, including restaurants, catering, and institutional and business food service are studied. In addition, travel and tourism, recreation and leisure management (theme parks, clubs and public parks), meeting and event sales, planning and management, senior living services and support infrastructure, and casino and gaming management, as the balance of the eight areas which comprise the main business segments of the hospitality industry, are studied. Basic concepts of ownership, franchising, management, human resources, marketing, cost control, facilities management, service and career opportunities are examined.

HOS-120. Hotel/Hospitality Management. 3 Credits.
LECT 3 hrs
This course provides Hospitality Management students and aspiring hotel management professionals within the industry strong conceptual management underpinnings while addressing the unique requirements of lodging managers. Students are taken on a department-by-department tour of a full-service hotel. The organization and operation of lodging properties are analyzed from the perspective of the front office manager. This course combines discussions of hotel departmental managerial responsibilities, roles and practices with information directly relevant to careers in lodging management. Students learn about the procedures effective managers use to ensure their hotels and, thus, their own ultimate success.

HOS-121. Advanced Baking. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course is a continuation of the baking methods and formulas presented in Introduction to Baking. Students prepare a variety of cakes and icings and learn to apply a variety of decorating styles and techniques. In addition, students create advanced yeast bread, pies, tarts, mousses and chocolates. Emphasis is also placed on dessert plating and presentation which will be covered during the combined lecture and laboratory classes.
Prerequisites: HOS-117
Additional Fees: Course fee applies.

HOS-123. International Cuisines. 3 Credits.
LECT 2 hrs, LAB 2 hrs
The study of the world of food and the cuisines of different cultures is one of the growing trends in the United States. Our modern culture brings together a multitude of different possibilities in the kitchen and is a fascinating and wide-ranging study of both practice and theory. This class will prepare menu items from around the world to delight the mind and expand the individuals cooking experience in a production kitchen.
Prerequisites: HOS-102
Additional Fees: Course fee applies.

HOS-126. American Regional Cuisine. 1 Credit.
LAB 2 hrs
American Regional Cuisine celebrates the diversity, distinction and delectable essences of American cooking. Organized by region, these recipes are drawn from every part of the menu, offering a range of complete meals for each culinary style.
Additional Fees: Course fee applies.

HOS-127. Italian Cuisine. 1 Credit.
LAB 2 hrs
From savory soups to sweet desserts, students study Italian cooking in the same manner as a typical menu. Recipes are drawn from every part of the meal and offer a wide range of culinary styles. The course provides a fascinating introduction to the widely diverse cuisine of Italy.
Additional Fees: Course fee applies.

HOS-128. Chinese Cuisine. 1 Credit.
LAB 2 hrs
Chinese cooking is one of the world's oldest continuous culinary traditions, developed over the course of 4,000 years. A subject of profound importance for countless generations of Chinese philosophers, scholars, poets and ordinary people, the selection, preparation and consumption of food is much more than a matter of sustenance in Chinese tradition. This course examines several of these factors while preparing and sampling traditional Chinese dishes.
Additional Fees: Course fee applies.

HOS-129. Latin Cuisines. 1 Credit.
LAB 2 hrs
Latin Cuisines investigates the origins of modern Iberian, Caribbean, Central, and South American cooking and develops the student knowledge of these areas. The many similarities are only a starting point for the incredible diversity that is modern Latin Cuisine. The class will produce full Latin menus based on different periods and areas of the global community.
Additional Fees: Course fee applies.

HOS-201. Marketing and Event Planning. 3 Credits.
LECT 3 hrs
The field of event planning is one of the most exciting and dynamic aspects of the hospitality industry. In order to be successful, the marketing of not just the business but also the individual is of primary importance. This course offers the opportunity to experience actual event planning while also studying menu, restaurant and personal marketing in relation to the hospitality industry.

HOS-210. Dining Room Management. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Practical training in the operations and practices of a modern dining room. Students will learn the techniques needed to work and succeed as a management professional in the dining environment. The importance of customer service will culminate with the operation of a theoretical restaurant and individual catering experiences as Dining Room staff and management.
Prerequisites: HOS-102
Additional Fees: Course fee applies.

HOS-211. Human Resource Management in the Hospitality Industry. 3 Credits.
LECT 3 hrs
This course applies human resource management principles to the hotel and restaurant industry. Topics covered include recruitment, training, motivation, job descriptions and alternative personnel policies. The course emphasizes the vital role of the diversity within the industry. Students will consider human resources in the context of a complete operating business. Included in the course is the opportunity to receive one NRAEF Certificate in Human Resources towards the ManageFirst Certification.
HOS-213. Food and Beverage Purchasing and Cost Controls. 3 Credits.
LECT 3 hrs
A more advanced course dealing with the concepts of selection and procurement in the hospitality industry. Special emphasis is given to food cost, the purchasing function, procurement and inventory controls. In addition, forecasting, budgeting, cash management, and profit and loss statements also are studied. Included in the course is the opportunity to receive one NRAEF certificate (Inventory and Purchasing) towards the ManageFirst Certification.
Prerequisites: HOS-102
Corequisites: HOS-224.

HOS-215. Bar and Beverage Service Management. 3 Credits.
LECT 3 hrs
A comprehensive study of food and beverage managerial principles, with an emphasis on alcoholic beverages. The manufacture, distribution, control procedures, legal aspects, integrity issues and the responsible service of alcoholic beverages are studied. Students gain product knowledge of distilled spirits, wines and beers, including an examination of contemporary non-alcoholic beverage alternatives. The opportunity for two NRAEF certificates is included in the course (Serv-Safe Alchohol and Bar & Beverage Management).

HOS-221. Cooperative Work Experience Hospitality (45-100 Hours). 1 Credit.
COOP 1 hr
This course provides students enrolled in the Hospitality programs with job-oriented training and practical work experience in a work environment prior to permanent employment amounting to between 45 and 100 hours in duration. The course may be taken in fulfillment of a requirement or as an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: Permission of department chair
Corequisites: HOS-224.

HOS-222. Cooperative Work Experience Hospitality (90-200 Hours). 2 Credits.
COOP 2 hrs
This course provides students enrolled in the Hospitality programs with job-oriented training and practical work experience in a work environment prior to permanent employment amounting to between 90 and 200 hours in duration. The course may be taken in fulfillment of a requirement or as an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: Permission of department chair
Corequisites: HOS-224.

HOS-223. Cooperative Work Experience Hospitality (135-300 Hours). 3 Credits.
COOP 3 hrs
This course provides students enrolled in the Hospitality programs with job-oriented training and practical work experience in a work environment prior to permanent employment amounting to between 135-300 hours in duration. The course may be taken in fulfillment of a requirement or an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: Permission of department chair.

HOS-227. Internship Work Experience Hospitality (45-100 Hrs). 1 Credit.
LECT 1 hr
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in an unpaid work environment prior to permanent employment and amounting to between 45 and 100 hours in duration. The course may be taken in fulfillment of a requirement or an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: HOS-106 and permission of department chair.

HOS-228. Internship Work Experience Hospitality (90-200 Hours). 2 Credits.
LECT 2 hrs
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in an unpaid work environment prior to permanent employment and amounting to between 90 and 200 hours in duration. The course may be taken in fulfillment of a requirement or an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: HOS-106 and permission of department chair.

HOS-229. Internship Work Experience Hospitality (135-300 Hours). 3 Credits.
LECT 3 hrs
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in an unpaid work environment prior to permanent employment and amounting to between 135 and 300 hours in duration. The course may be taken in fulfillment of a requirement or an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: HOS-106 and permission of department chair.
HOS-232. Principles of Travel and Tourism. 3 Credits.
LECT 3 hrs
Principles of travel and tourism offer Hospitality Management majors, other students, and aspiring travel and tourism professionals a comprehensive overview of the principles, practices and philosophies of this interdisciplinary segment of the hospitality industry. Major concepts, including the economics, history, career opportunities, global perspective, worldwide organizations, modes of travel and related services, providers and destination pursuits, are studied.

HOS-233. Food as Art. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces students to the art of food styling, food photography, garde manger and cake decoration. Topics covered include how to prepare, arrange, preserve food photo shoot, techniques on how to prepare pâté's, terrines and fresh cheese. This course covers the art and science of cake preparation, assembly and decoration. Students have the opportunity to create a portfolio of work.
Prerequisites: HOS-100, HOS-101, HOS-102
Additional Fees: Course fee applies.

HOS-234. Meeting and Event Sales, Planning, and Management. 3 Credits.
LECT 3 hrs
Meeting and Event Sales, Planning and Management offers Hospitality Management majors, other students and aspiring professionals in this discipline an in-depth study of generally accepted principles and practices in this segment of the hospitality industry. Career opportunities, corporate meeting planning, catering organization and administration, and other various types of meetings and events are examined.

HOS-235. Restaurant Operations. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course is the culmination of the student studies in Restaurant Management. The class will develop and market a restaurant concept that will be used to serve the CCM public during the semester. The operations and organization of the restaurant will be managed by the students as an experiential learning module of their overall studies in the course. One certificate from NRAEF (Food and Beverage Management) will be offered for certification
Prerequisites: HOS-100 HOS-210
Additional Fees: Course fee applies.

HOS-239. Independent Study-Hospitality Industry. 3 Credits.
LECT 3 hrs
This course is an independent work/study designed for the student on a topic that is selected in accordance with academic standards and dependent upon department chair approval.
Prerequisites: Permission of department chair.

HOS-240. Hotel Operations. 3 Credits.
LECT 3 hrs
In the modern Hospitality Industry managers and hotel executives must plan for a variety of business conditions that are constantly changing and developing. This course offers students the opportunity to operate a theoretical hotel property while studying the diverse elements of an ever changing environment. This course is a capstone for the Hospitality Management Program and should be taken in the last semester of studies at CCM.
Prerequisites: HOS-120.

Human Services - Liberal Arts and Sciences

Associate in Arts Degree
These university-parallel curricula are designed to meet the basic requirements of the first two years of college programs for students who plan to graduate and transfer to a four-year college or university to study for the baccalaureate degree. The curricula offer a wide range of flexibility in terms of a student’s ultimate educational goals and provide adequate preparation for further study leading to professional competence in specialized fields.

These programs also accommodate individuals seeking two years of a liberal higher education.

The program offers options in Human Services, Humanities/International Studies, Humanities/Music, and Humanities/Social Science.

Degrees
AA Human Services
An Option within Liberal Arts and Sciences
(P1134)
Historically the system of Human Services responded primarily to the needs of the poor. Today the system is quite diverse and responds to many human needs. A limited list of areas of need would include drug and alcohol rehabilitation, community mental health, school social services, domestic violence, hospitals and corrections. Services can be provided through several techniques, such as case work, group work and community organization.

The Human Services option allows the student a specialization in various areas of social welfare. The course material provides an understanding of the values and principles of professional practice, a study of how policies are formed and implemented, and a realization of the various human needs which develop in modern societies and how they are responded to by human service agencies and providers. In addition, opportunities exist for students to do volunteer work with local agencies. Students are advised by faculty in the Sociology, Economics and Anthropology Department.

Articulation Agreements
Students should check with the Transfer Office about articulation agreements with this program.

General Education Foundation

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<td>or MAT-133</td>
<td>Probability and Statistics</td>
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Mathematics Elective
Laboratory Science Electives

Technology
Select one of the following:

Social Science 6
SOC-120 Principles of Sociology
PSY-113 General Psychology

Humanities 9
Choose from General Education course list

History 6
HIS-204 History of the African-American Experience
HIS-209 History of American Women

Diversity 3
SOC-202 Contemporary Social Issues - America As a Diverse Society

General Education Credits 45

Human Services Core

HMS-215 Introduction to Social Welfare and Human Services 3
HMS-216 Human Needs and Social Services 3
PSY-229 Community Mental Health 3
SOC-209 The Family 3
ECO-211 Principles of Economics I Macroeconomics 3
HIS-203 History of Minorities in U.S. 3

Human Services Core Credits 18

Total Credits 63

Faculty
Dr. Jill Schennum
Chairperson, Sociology, Economics and Anthropology
Professor, Sociology
Ph.D., Graduate Center, CUNY
M.Ed., Rutgers University
M.A., Boston University
B.A., Carleton College
DH 317  973-328-5610  jschennum@ccm.edu

Courses

HMS-215. Introduction to Social Welfare and Human Services. 3 Credits.
LECT 3 hrs
An introduction to the goals, values and philosophy of social work as a profession. Examines the relationship between attitudes and values, economic, political and cultural conditions, and the evolution of social welfare services focusing attention on the historical developments of social services in the United States. Provides understanding of the basic elements of the client-worker relationship.

HMS-216. Human Needs and Social Services. 3 Credits.
LECT 3 hrs
This course presents a conceptual framework through which human behavior is systematically understood. It explores the needs of people as determined by their biological and psycho/social growth and development, and by their special relationship to society and its problems. The means by which these needs can be met by the social welfare system also are presented.

Humanities/Social Science - Liberal Arts and Sciences

Associate in Arts Degree

This degree program is designed to meet the basic requirements of the first two years of college programs for students who plan to graduate and transfer to a four-year college or university. The program offers a wide range of flexibility in terms of a student’s ultimate educational goals and provides adequate preparation for further study leading to professional competence in specialized fields, especially in the humanities or the social sciences.

These programs also accommodate individuals seeking two years of a liberal arts higher education.

The program offers options in Human Services, Humanities/International Studies, Humanities/Broadcasting Arts and Technology, Humanities/Media Studies - Journalism, Humanities/Music, Humanities/Musical Theatre and Humanities/Social Science.

Degrees

AA Humanities/Social Science
An Option within Liberal Arts and Sciences
(P1130)

• Liberal Arts and Sciences – American History Track (p. )
• Liberal Arts and Sciences - Literature Track (p. 125)
• Liberal Arts and Sciences – Philosophy Track (p. 125)
• Liberal Arts and Sciences - Psychology Track (p. 126)
• Liberal Arts and Sciences – Western Civilization Track (p. )
• Liberal Arts and Sciences – Women and Gender Studies Track (p. 125)
• Liberal Arts and Sciences – Writing Track (p. 125)

The Liberal Arts Humanities/Social Science program is an ideal foundation for transfer to four-year colleges and universities in a wide variety of majors including English, History, Languages, Economics, Psychology, Sociology, Communication, Global Studies, Political Science and many other fields. It is considered a starting point for careers in law, education, science, government and human services or for those whose academic interests are in the specialized areas of the social sciences or humanities. After receiving the associate’s degree, students in this program generally transfer to earn a bachelor’s degree. The program especially accommodates students who wish to focus on general education classes or who want to take college-level courses for their own enrichment. Students uncertain of their career goals are offered an opportunity for exploration within this program.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.
If you are considering a career in teaching, please read about the County College of Morris Teacher Education Specializations in English, History, Psychology, Sociology and Spanish.

**General Education Foundation**

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</tr>
<tr>
<td>Literature Survey or Language Sequence</td>
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<tr>
<td>Restricted Elective</td>
<td>12</td>
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<tr>
<td>Liberal Arts Core Credits</td>
<td>18</td>
</tr>
<tr>
<td>Total Credits</td>
<td>63</td>
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</tbody>
</table>

**TRACKS WITHIN CURRICULUM 1130 - LIBERAL ARTS AND SCIENCES**

Within the Liberal Arts Curriculum are tracks which afford students an opportunity to concentrate in a particular area of liberal studies: English, History, Philosophy, Psychology, and Sociology. These tracks are distinct from the Education Specializations. All General Education requirements apply to these tracks.

In English, there are two tracks, Literature and Writing. There are two tracks in History as well, one in American History and the other in Western Civilization. The Sociology track is in Women and Gender Studies. There are Liberal Arts and Sciences tracks in Philosophy and Psychology as well.

**Liberal Arts and Sciences - American History Track**

**General Education Foundation**

<table>
<thead>
<tr>
<th>Category</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COMMUNICATION</td>
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<tr>
<td>ENG-111 English Composition I</td>
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<td>ENG-112 English Composition II</td>
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<tr>
<td>COM-109 Speech Fundamentals</td>
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<tr>
<td>MATH/SCIENCE/TECHNOLOGY</td>
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<tr>
<td>Mathematics (3-8 CR)</td>
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<tr>
<td>PSY-113 General Psychology</td>
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</tr>
<tr>
<td>SOC-120 Principles of Sociology</td>
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</tr>
<tr>
<td>HUMANITIES</td>
<td>9</td>
</tr>
<tr>
<td>ART-116 American Art</td>
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</tr>
<tr>
<td>HIS-209 History of American Women</td>
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<tr>
<td>Elective 3 CR (Refer to Humanities General Education List)</td>
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<tr>
<td>HISTORY</td>
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<tr>
<td>HIS-166 Emergence of America - U.S. History I</td>
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<td>HIS-167 Twentieth Century American History - U.S. History II</td>
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<tr>
<td>HIS-204 History of the African-American Experience</td>
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<td>ENG-249 American Literature From the Colonial to The Civil War</td>
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<tr>
<td>ENG-250 American Literature From the Civil War To the Twentieth Century</td>
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<tr>
<td>POL-111 American Government</td>
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<td>Restricted Elective (9 CR) - See Curriculum Checksheet</td>
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<td>Liberal Arts Core Credits</td>
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**Liberal Arts and Sciences - Western Civilization Track**

**General Education Foundation**

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<tr>
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<tr>
<td>Technology (0-4 CR)</td>
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<tr>
<td>SOCIAL SCIENCE</td>
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<tr>
<td>PSY-113 General Psychology</td>
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<tr>
<td>SOC-120 Principles of Sociology</td>
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<tr>
<td>HUMANITIES</td>
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<tr>
<td>HIS-113 Early Modern Europe</td>
<td></td>
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<tr>
<td>HIS-114 Modern Europe</td>
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<tr>
<td>PHL-111 Introduction to Philosophy</td>
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<td>HISTORY</td>
<td>6</td>
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<tr>
<td>HIS-117 The Ancient World-Greece and Rome</td>
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<tr>
<td>HIS-118 The Middle Ages</td>
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<td>DIVERSITY</td>
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<tr>
<td>ART-133 Art History I</td>
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<tr>
<td>or ART-134 Art History II</td>
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<tr>
<td>General Education Foundation Credits</td>
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### Liberal Arts and Sciences - Writing Track

**General Education Foundation**
- **Communication**
  - ENG-111 English Composition I
  - ENG-112 English Composition II
  - COM-109 Speech Fundamentals
- **Math/Science/Technology**
  - Choose from General Education Course List
  - Mathematics (3-8 CR)
  - Laboratory Science (4-8 CR)
  - Technology (0-4 CR)
- **Social Science**
  - PSY-113 General Psychology
  - SOC-120 Principles of Sociology
- **Humanities**
  - HUMANITIES (See Curriculum Checksheet)
  - HISTORY (See Curriculum Checksheet)
  - DIVERSITY (See Curriculum Checksheet)
  - GENERAL EDUCATION FOUNDATION Credits: 45

**Liberal Arts Core**
- Literature Survey or Language Sequence (See Curriculum Checksheet)
- Restricted Elective (See Curriculum Checksheet)
- LIBERAL ARTS CORE Credits: 18

**Total Credits:** 63

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### Liberal Arts and Sciences - Literature Track

**General Education Foundation**
- **Communication**
  - ENG-111 English Composition I
  - ENG-112 English Composition II
  - COM-109 Speech Fundamentals
- **Math/Science/Technology**
  - Choose from General Education course list
  - Mathematics (3-8 CR)
  - Laboratory Science (4-8 CR)
  - Technology (0-4 CR)
- **Social Science**
  - PSY-113 General Psychology
  - SOC-120 Principles of Sociology
- **Humanities**
  - HUMANITIES (see Curriculum Checksheet)
  - HISTORY (See Curriculum Checksheet)
  - DIVERSITY (See Curriculum Checksheet)
  - GENERAL EDUCATION FOUNDATION Credits: 45

**Liberal Arts Core**
- English Classics From Beowulf to Paradise Lost: a Survey of Drama, Romances and Epics
- English Classics From Beowulf to Paradise Lost: a Survey of Drama, Romances and Epics
- Restricted Elective (See Curriculum Checksheet)
- LIBERAL ARTS CORE Credits: 18

**Total Credits:** 63

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### Liberal Arts and Sciences - Women and Gender Studies Track

**General Education Foundation**
- **Communication**
  - ENG-111 English Composition I
  - ENG-112 English Composition II
  - COM-109 Speech Fundamentals
- **Math/Science/Technology**
  - Choose from General Education course list
  - Mathematics (3-8 CR)
  - Laboratory Science (4-8 CR)
  - Technology (0-4 CR)
- **Social Science**
  - PSY-113 General Psychology
  - SOC-120 Principles of Sociology
- **Humanities**
  - HUMANITIES (see Curriculum Checksheet)
  - HISTORY (See Curriculum Checksheet)
  - DIVERSITY (See Curriculum Checksheet)
  - GENERAL EDUCATION FOUNDATION Credits: 45

**Liberal Arts Core**
- Introduction to Philosophy
- Ethics
- Logic

**Total Credits:** 63
### Liberal Arts and Sciences - Psychology Track

**General Education Foundation**

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<td>SOC-120</td>
<td>Principles of Sociology</td>
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**HUMANITIES**

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<tr>
<td>HISTORY</td>
<td>History of American Women</td>
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<td>DIVERSITY</td>
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<td>SOC-221</td>
<td>Sociology of Gender</td>
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**LIBERAL ARTS CORE**

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<td>Literature Survey/Language Sequence</td>
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<td>Restricted Elective</td>
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<td>(Recommend Women in Film ENG 214)</td>
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**PSYCHOLOGY COURSES**

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<tr>
<td>PSY-219</td>
<td>Developmental Psychology - the Human Lifespan</td>
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<tr>
<td>PSY-213</td>
<td>Child Psychology</td>
</tr>
<tr>
<td>PSY-214</td>
<td>Adolescent Psychology</td>
</tr>
<tr>
<td>PSY-221</td>
<td>Psychology of Personality</td>
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**RESTRICTED ELECTIVE**

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<tbody>
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</tbody>
</table>

**Total Credits**

### Faculty

Dr. Bruce Dutra  
Division Dean, Liberal Arts  
Ph.D., M.A., Purdue University  
B.A., University of Delaware  
CH253 973-328-5400  bdutra@ccm.edu

### Courses

**ART-101. Art Start - a Creative Experience. 3 Credits.**  
LECT 1 hr, LAB 3 hrs  
Art Start is designed to introduce the novice, the absolute beginning student, to a basic history of art, the tools and techniques used to make art, and the simple pleasures and experience of working with a variety of materials to create expressive art objects. No talent or prior experience is required. Instruction emphasizes process over product and hands-on experience as an avenue to understanding art theory and philosophy. Art Start experiences include collage, assemblage, drawing, watercolor painting, acrylic painting, printmaking and clay sculpture. This course is aerobic for the brain and soul food for the creative artist hiding within every person.

**Additional Fees:** Course fee applies.

**ART-114. Contemporary Art. 3 Credits.**  
LECT 3 hrs  
Contemporary Art launches with a review of 19th and 20th century art and then brings students to the here and now, the art and the artists of today. In lectures, multimedia presentations and field experiences, students are exposed to the pluralism of the new global art world.

**ART-116. American Art. 3 Credits.**  
LECT 3 hrs  
A survey and overview of the development of visual art traditions in America beginning with the colonization of the Americas and continuing through the Modern and Post-Modern periods. Arts, crafts and architecture are examined as well as Native American, African American, Hispanic and other cultural influences contributing to the development of a uniquely American experience and vision.

**ART-122. Drawing I. 3 Credits.**  
LECT 2 hrs, LAB 3 hrs  
In Drawing I, beginning art students learn the methods, materials and visual information needed to draw what we see. In small steps, students are led through a series of simple exercises designed to build competence and confidence. The diversity and complexity of the subjects drawn gradually grows along with students' drawing and visual skills. Students create a sketch book and a portfolio including still life drawings, landscape drawings, perspective drawings and portraiture. Materials used include pencil, charcoal, conte crayon and ink.

**Additional Fees:** Course fee applies.
ART-123. Drawing II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Drawing II is an intermediate-level drawing course designed for students who wish to build upon the skills and knowledge acquired in ART-122 Drawing I. Students explore a wide range of tools, mediums and surfaces. Larger scale drawings, the introduction of color in drawing and experimentation with subjects and visual space are encouraged. Drawing II also includes a study of basic anatomy for artists and an introduction to drawing from live nude models, both male and female. By semester end, successful students will have created a sketch book and diverse portfolio of competent and expressive drawings that complement student portfolios begun in ART-122 Drawing I.
Prerequisites: ART-122
Additional Fees: Course fee applies.

ART-124. Figure Drawing. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Figure Drawing, student artists draw from live nude models, both male and female, study in-depth anatomy for artists and explore a variety of methods and materials to create expressive drawings of the human figure. By the end of the semester, successful students will have created a wide selection of figure drawings to support the drawing portfolio begun in Drawing I and continued in Drawing II.
Prerequisites: ART-122, ART-123
Additional Fees: Course fee applies.

ART-130. Two Dimensional Design. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Two Dimensional Design, students learn, through lectures, multimedia presentations, and simple drawing, painting and collage projects, how to control and compose visual elements on a two-dimensional plane. These visual elements include line, shape, light, texture, scale and a brief introduction to color applied on two-dimensional surfaces such as paper, board and canvas-board. Student artists who successfully complete this course will have a solid initial portfolio and the fundamental knowledge and basic skills needed to create better, more effective photographs, drawings, paintings, prints, illustrations, designs and graphic designs.
Additional Fees: Course fee applies.

ART-131. Color Theory. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Color Theory students learn, through lectures, multimedia presentations and assigned projects using a variety of art mediums, how color affects the human eye, mind, body and spirit. Students who successfully complete this course will add a strong body of artwork that exhibits a working knowledge of color theory and its application in the visual arts, adding to the initial portfolio of artwork created in Drawing I and Two Dimensional Design.
Prerequisites: ART-122, ART-130
Additional Fees: Course fee applies.

ART-132. Three Dimensional Design. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Three Dimensional Design, students, through lectures, multimedia presentations and assigned projects using a variety of materials and the basic aspects of planning, sketching and modeling, learn to understand and control the visual and physical forces inherent in the creation of three-dimensional objects. Students who successfully complete this course will add a body of three-dimensional art work to their portfolios. Student artists will also possess the fundamental knowledge and basic skills needed to pursue further studies in sculpture, ceramics, design (product, industrial, interior, fashion) and architecture.
Prerequisites: ART-122, ART-130
Additional Fees: Course fee applies.

ART-133. Art History I. 3 Credits.
LECT 3 hrs
Art History I is a global survey of the major developments in painting, sculpture and architecture from the cave art of prehistory through the art of Africa, the Near East, South and South East Asia, Korea, China, Japan, Egypt, Greece and Rome, through the Gothic in Europe. Students explore, through lectures, multimedia presentations and a field experience at major art museums, the social, technological and spiritual changes that influenced the evolution of subjects, styles and ideas expressed in early art.

ART-134. Art History II. 3 Credits.
LECT 3 hrs
Art History II explores the significant developments in painting, sculpture and architecture from the High Renaissance to the art of the late 20th century, and the art of Africa and the Americas. Political, religious, scientific, industrial and technological revolutions are mirrored in the powerful and dramatic changes that take place in the art world. Through lecture, visual presentations and a field experience, students discover important stylistic movements of the last half-millennium from around the world.

ART-219. Painting I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Painting I introduces students to the technical, formal and creative aspects of painting in either oil or acrylic paint. Student artists work with diverse subject matter and explore a variety of methods, tools and materials.
Prerequisites: ART-122, ART-130, ART-131
Additional Fees: Course fee applies.

ART-220. Painting II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Painting II advances students in the technical, formal and creative aspects of painting in either oil or acrylic paint. Student artists work with diverse subject matter and explore a variety of methods, tools and materials.
Prerequisites: ART-219
Additional Fees: Course fee applies.

ART-223. Printmaking I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Printmaking I introduces students to the historical, technical, formal and creative aspects of printmaking. Student artists work with new nontoxic water-based materials in an exploration of printing methods such as monotypes, relief prints, silk-screens and etching.
Prerequisites: ART-122, ART-130.
ART-224. Printmaking II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Printmaking II is a continuation of Printmaking I with greater emphasis on color, originality, personal style and self-expression. Student artists are challenged to create a connected body of prints or an artist's book. 
Prerequisites: ART-122, ART-130, ART-131, ART-223.

ART-228. Sculpture I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Sculpture I, students explore space and form, and three-dimensional media in the creation of expressive sculptural objects. Students model, carve and construct in a variety of media such as clay, plaster, stone, wood, metal and paper.
Prerequisites: ART-122, ART-130, ART-131, ART-132
Additional Fees: Course fee applies.

ART-229. Sculpture II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Sculpture II builds on the basic skills acquired in prerequisite courses and Sculpture I. Sculpture II is an extension of Sculpture I with a greater emphasis on originality and personal style and self-expression. Student artists continue to develop their understanding of the human figure, form and of the media and techniques by which to represent them.
Prerequisites: ART-228
Additional Fees: Course fee applies.

ART-230. Portfolio and Presentation. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Portfolio and Presentation guides students in the selection of artworks appropriate to include in final portfolios. Students improve, restore, repair or complete any work necessary to the portfolio. Students assemble, collate and document all work in physical and digital forms in preparation for submission to targeted transfer institutions, galleries, museums or prospective employers or clients. Students create written documents including resumes, cover letters and biographies to support professional activities. A final art exhibition and formal presentation of the portfolio and supporting materials are required.
Prerequisites: ART-122, ART-130, ART-131 and ART-132
Additional Fees: Course fee applies.

ART-233. Independent Study I. 1 Credit.
LECT 1 hr
Course study designed with a faculty advisor. The student is responsible for developing a statement of goals and objectives and submitting proposed projects.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

ART-234. Independent Study II. 2 Credits.
LECT 2 hrs
A project designed with a faculty advisor. The student is responsible for developing a statement of goals and objectives, maintaining a weekly log and submitting a summary project.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

ART-237. Watercolor Painting. 3 Credits.
LECT 1 hr, LAB 4 hrs
In this course, students learn, through demonstration and experience, how to paint using the expressive medium of watercolor. Students create still life, landscape, figurative and abstract paintings. Students who successfully complete this course will have a portfolio of watercolor paintings and the fundamental knowledge and basic skills needed to effectively use the medium.

ART-238. Independent Study III. 3 Credits.
LECT 3 hrs
A project designed with a faculty advisor. The student is responsible for developing a statement of goals and objectives, maintaining a weekly log and submitting a summary project. 
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

ART-241. Ceramics I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
The study and practice of ceramics - the preparation of clay, hand building, wheel-throwing and glazing. Emphasis is placed on contemporary American techniques.
Additional Fees: Course fee applies.

ART-242. Ceramics II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
The study and practice of ceramics. Emphasis is placed on producing finished ceramic artworks.
Prerequisites: ART-241
Additional Fees: Course fee applies.

ART-291. Special Topics in Art. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Studio work in selected topics or issues in art. 
Additional Fees: Course fee applies.

ART-292. Special Topics in Art. 3 Credits.
LECT 1 hr, LAB 4 hrs
Studio work in selected topics or issues in art.
Additional Fees: Course fee applies.

ECO-113. Elements of Economics. 3 Credits.
LECT 3 hrs
This is a one semester course that combines abstract principles, simple geometric approaches, applied problems and their analysis for those students seeking an understanding of some fundamental economic principles and laws. This understanding is enhanced by exploring the mechanics, operations and usefulness of economics to consumer, businesses, governments, both nationally and internationally.

ECO-120. Economics and Economic Issues. 3 Credits.
LECT 3 hrs
This course combines economic principles with applications to contemporary problems. Emphasis is placed on using economic concepts to analyze and understand social, political, philosophical and diversity issues. This course is a social science elective.

ECO-211. Principles of Economics I Macroeconomics. 3 Credits.
LECT 3 hrs
Macroeconomics is the study of aggregate economic behavior. National income, employment, price stability and economic growth are analyzed. Fiscal and monetary policies to alleviate inflation and unemployment are also studied.
Prerequisites: MAT-016 or equivalent.
Prerequisites: the short essay in preparation for English Composition I. Comprehension, and supplemental structure and grammar. Lead to paragraph development, the topic sentence, transitional techniques, and the first half of the 6-credit English Communications requirement emphasizes the fundamentals of written communications including expository prose, reading comprehension and interpretation, and rhetorical modes.

Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

ECO-212. Principles of Economics II Microeconomics. 3 Credits.
LECT 3 hrs
Microeconomics is the study of prices and markets. Product and resource markets under competitive and non-competitive conditions are analyzed. Behavior of the firm in the determination of price, output and employment of the factors of production is examined. This course includes an introduction to international economics.
Prerequisites: ECO-211.

ECO-217. Economics of Labor. 3 Credits.
LECT 3 hrs
Labor economics analyzes the structure and performance of the market for labor and public policy as it affects the employment and remunerations of labor. Among the many multifaceted issues that may be explored are: demand for labor, supply of labor, employment and unemployment, inflation and wages, effects of unions on wages and employment, wage differentials, discrimination in the labor market, human capital theory, migration, job search, and the effects of international trade on domestic output, employment and wages.
Prerequisites: ECO-211
Co-requisites: ECO-212.

ECO-291. Special Topics in Economics. 3 Credits.
LECT 3 hrs
This course examines selected topics or issues in economics. Topics may differ each time the course is offered. Students should consult the department chairperson for further information. This course is not offered every semester.

ECO-292. Special Topics in Economics. 3 Credits.
LECT 3 hrs
This course examines selected topics or issues in economics. Topics may differ each time the course is offered. Students should consult the department chairperson for further information. This course is not offered every semester.
Prerequisites: Permission of department chair.

ENG-007. Writing Skills Review. 0 Credits.
LECT 2 hr
An intense mini-course focused on the remediation of an individual’s writing deficiencies as evidenced on the college’s placement test. Students could be placed in this course as a pre-requisite to ENG-111.
Prerequisites: Enrollment from college’s placement test.

ENG-022. Elements of Writing. 0 Credits.
LECT 1.5 hrs
An abbreviated version of ENG-025 Writing Skills, this class is for students who exhibit a level of skills on the English Placement Test that preempts their placement in a full semester non-credit course.
Prerequisites: Enrollment from college’s placement test.

ENG-025. Writing Skills. 0 Credits.
LECT 3 hrs
Designed to increase the student’s proficiency in writing skills, paragraph development, the topic sentence, transitional techniques, comprehension, and supplemental structure and grammar. Lead to the short essay in preparation for English Composition I.
Prerequisites: Enrollment from college’s placement test.

ENG-111. English Composition I. 3 Credits.
LECT 3 hrs
The first half of the 6-credit English Communications requirement emphasizes the fundamentals of written communications including expository prose, reading comprehension and interpretation, and rhetorical modes.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

ENG-112. English Composition II. 3 Credits.
LECT 3 hrs
The second half of the English Communications requirement continues emphasis on expository prose and critical writing through the use of literary genres. Methods of literary research and a research paper are required.
Prerequisites: ENG-111 or ENG-131.

ENG-113. Creative Writing. 3 Credits.
LECT 3 hrs
A workshop course designed to encourage and develop talent in the writing of poetry, short fiction and/or drama. Class discussions center on manuscripts submitted by the students.
Co-requisites: ENG-111 or ENG-131.

ENG-114. Advanced Creative Writing. 3 Credits.
LECT 3 hrs
A writer’s workshop designed for students who have successfully completed Creative Writing and who wish to improve their work through discussion of class submissions and the works of established writers.
Prerequisites: ENG-113.

ENG-115. The Short Story. 3 Credits.
LECT 3 hrs
A study of the short story as a specialized art form, involving the study of writing techniques and styles, films and critical analysis of selected stories.
Prerequisites: ENG-111 or ENG-131.

ENG-116. The Novel. 3 Credits.
LECT 3 hrs
A survey of novels both classic and contemporary, with particular attention to the methods by which such novels are created. Included may be novelists as varied as Dickens, Camus, Flaubert, Vonnegut, Dostoyevsky, Bellow, Joyce and Hesse.
Prerequisites: ENG-111 or ENG-131.

ENG-117. Children's Literature. 3 Credits.
LECT 3 hrs
A survey of children’s literature including poetry, picture books, fairy tales and folklore, myths and epics, realistic fiction, and fantasy, with a special emphasis on multicultural and ethnic works.
Prerequisites: ENG-111 or ENG-131.

ENG-119. Introduction to Poetry. 3 Credits.
LECT 3 hrs
Designed for the beginner to develop skill and confidence in reading, understanding, evaluating and appreciating poetry. Includes a wide variety of material but emphasizes short lyrics by major British and American authors. Students are not required to write original poetry.
Prerequisites: ENG-111 or ENG-131.
ENG-123. Introduction to Linguistics - Honors. 3 Credits.
LECT 3 hrs
The course examines the fundamental concepts of language structure and dynamics, including language development, variation and change. Students are required to apply and expand basic theory through independent research and projects that are presented to the class.
Prerequisites: ENG-111 or ENG-131 and permission of department chair or honors advisor.

ENG-131. English Composition I Honors. 3 Credits.
LECT 3 hrs
An advanced course in rhetoric and expository writing for students selected on the basis of academic record, testing or writing samples. Enriches the reading materials and assignments of English Composition I with supplementary materials designed to challenge the advanced student.
Prerequisites: Permission of honors advisor.

ENG-132. English Composition II Honors. 3 Credits.
LECT 3 hrs
A continuation of English Composition I-Honors designed to challenge the advanced student. The course emphasizes expository prose and introduces students to short story, poetry and drama and is a continuation of expository writing techniques introduced in English Composition I-Honors. This course is designed to give the advanced student experience in analyzing perceptively and writing critically about three literary genres: short story, poetry and drama.
Prerequisites: ENG-111 or ENG-131 and permission of department chair or honors advisor.

ENG-210. Fantasy Novels. 3 Credits.
LECT 3 hrs
This course will explore fantasy literature as a reaction to the rationalism and realism that dominate post-industrial literature and will explore fantasy's ability to capture imaginations, offer alternative visions, and serve as an analysis of human nature and contemporary society. Authors may include J.R.R. Tolkien, Ursula Le Guin, George R.R. Martin, J.K. Rowling, Neil Gaiman, and Patrick Rothfuss.
Prerequisites: ENG-111, ENG-112 or ENG-131 ENG-132.

ENG-214. Women in Film. 3 Credits.
LECT 3 hrs
Films from c. 1913 to the present are examined for the diverse images of women which they convey. Issues of class, race, ethnicity, global perspective and sexual preference are considered. Films by women directors and writers are emphasized, but coverage also includes works by significant male filmmakers. Genres range from classical Hollywood narrative fiction to documentary, animation and avant-garde.
Prerequisites: ENG-111 and ENG-112 or ENG-131 and ENG-132 or permission of department chair.

ENG-224. Women in Literature. 3 Credits.
LECT 3 hrs
Classic and contemporary literary works are examined for the images of women which they convey. Discussion focuses on relationships between such images and the realities of women's lives, past and present, in the United States and abroad. Issues of class, race, ethnicity, global perspective and sexual preference are considered in relationship to gender. Both male and female authors may be studied. Some film adaptations may be examined for comparisons with written works.
Prerequisites: ENG-111 and ENG-112 or ENG-131 and ENG-132 or permission of department chair.

ENG-233. History of the Theatre I. 3 Credits.
LECT 3 hrs
This course presents a historical survey of the major developments in the theatre from ancient Egypt, Greece and Rome through the time of Shakespeare. Students will become aware of the major developments in all areas of the theatre: acting, directing, design and theatre architecture.
Corequisites: ENG-112 or ENG-132.

ENG-234. History of the Theatre II. 3 Credits.
LECT 3 hrs
This course presents a historical survey of the major developments in the theatre from the time of Shakespeare to the present day. Each historical period includes study of the major dramatists and their works.
Prerequisites: ENG-112 or ENG-132 and ENG-233.

ENG-243. World Literary Traditions: Beginnings to 1650. 3 Credits.
LECT 3 hrs
A comprehensive survey of Western and non-Western literature from the ancient world to 1650. Among genres emphasized are epic, lyric and drama. Representative works from Europe, China, India, Japan and Africa are included.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132.

ENG-244. World Literary Traditions: 1650 to Present. 3 Credits.
LECT 3 hrs
A comprehensive survey of Western and non-Western literature from 1650 to the present. Representative works from Europe, China, India, Japan and Africa are included. Major authors may include Moliere, Flaubert, Dostoevsky, Tolstoy, Tagore and Achebe.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132.

ENG-246. English Classics From Beowulf to Paradise Lost: a Survey of Drama, Romances and Epics. 3 Credits.
LECT 3 hrs
A chronological overview of England's early literary works by selected writers such as Chaucer, Spencer, Shakespeare, Marlowe and Milton.
Prerequisites: ENG-111 and ENG-112 or ENG-131 and ENG-132.

ENG-247. Romantics, Victorians and Moderns- Major British Writers of the 19th and 20th Centuries. 3 Credits.
LECT 3 hrs
A survey of the Romantic, Victorian and Modern periods of British literature, and a study of the growth of the novel. Major writers may include Blake, Wordsworth, Coleridge, Keats, E. Bronte, Browning, Arnold, Tennyson, Hardy, Lawrence, Yeats, Eliot and Joyce.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132.
ENG-249. American Literature From the Colonial to The Civil War. 3 Credits.
LECT 3 hrs
A survey of American literature from colonial beginnings to the Civil War, including but not restricted to Franklin, Cooper, Poe, Hawthorne, Melville, Emerson, Thoreau and Whitman. The influence of women, Native Americans, African Americans and others who contributed to the development of American culture may be examined as well as concepts such as Calvinism, Neo-classicism and Romanticism.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132.

ENG-250. American Literature From The Civil War To The Twentieth Century. 3 Credits.
LECT 3 hrs
A survey of literature written in America since 1865, including but not restricted to such writers as Dickinson, Twain, James, Wharton, Crane, Chopin, Eliot, Frost, Cather, Hemingway, Fitzgerald and Faulkner. The influence of women, African Americans, immigrants and others may be discussed along with cultural concepts such as Realism and Naturalism.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132.

ENG-283. World Literary Traditions: Beginnings - 1650 - Honors. 3 Credits.
LECT 3 hrs
This course is the first part of a survey of world literature that focuses on classics from various cultures including Greek, Roman, Hebrew, Babylonian, Chinese, Persian, Japanese and European. Readings are intended to stimulate class discussions and thoughtful written assignments.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132 and permission of department chair or honors advisor.

ENG-284. World Literary Traditions: 1650 to Present: Honors. 3 Credits.
LECT 3 hrs
This course is the second part of a survey of world literature that considers the major literary periods as reflected in classics of Western culture as well as African, Asian and Middle Eastern traditions. Attention is also given to racial issues. Readings are intended to stimulate both oral and written responses.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132 and permission of department chair or honors advisor.

HIS-113. Early Modern Europe. 3 Credits.
LECT 3 hrs
This course examines the transition from Medieval to Early Modern Europe. Included in the investigation are the Protestant Reformation and ensuing Catholic Counter-Reformation, and the causes and the consequences of the rise of the modern nation-state and the Enlightenment. It also traces the events precipitating the French Revolution and its aftermath.

HIS-114. Modern Europe. 3 Credits.
LECT 3 hrs
This course surveys Europe since the French Revolution, including the nationalist, liberal and socialist revolutions of the 19th and 20th Centuries. It investigates imperialism and the power struggles among Europe’s established and newly emerged states culminating in World War I. It also examines the Paris Conference, Europe between the two wars, and the rise of European fascism, communism, World War II and its aftermath.

HIS-117. The Ancient World-Greece and Rome. 3 Credits.
LECT 3 hrs
This course familiarizes the student with the cultural heritage of the ancient civilizations of the Mediterranean world, including Egypt, Greece and Rome. By the end of this course, the student should be able to demonstrate an understanding of the most important political, social, economic and cultural developments of the Mediterranean world. This course includes politics, economics, culture and religion.

HIS-118. The Middle Ages. 3 Credits.
LECT 3 hrs
This course investigates European development from the fall of the Roman Empire to the collapse of the Byzantium in 1453. The course includes the analysis of key political, social, intellectual and economic experiences in Western Europe.

HIS-122. History of Russia. 3 Credits.
LECT 3 hrs
The history of Russia from the Tsars to the present. Major emphasis is on the unique development of Russian culture during the Tsarist period through the collapse of the Soviet Union and post-Soviet period. Documents that reflect important developments are included.

HIS-123. History of Modern Africa. 3 Credits.
LECT 3 hrs
This course deals with the history, politics, economics and culture of Africa from the mid-1880s to the present. It provides an analysis of colonialism, nationalism and transfer of power, nation building and economic development and the international relations of African states.

HIS-147. History of Modern East Asia. 3 Credits.
LECT 3 hrs
A survey of modern East Asia including the impact of the West, the modernization of Japan, the origin and growth of the Chinese Communist Party and the Vietnam War.

HIS-148. Modern Middle East. 3 Credits.
LECT 3 hrs
An examination of the historical development of the Middle East with emphasis on the 20th century. Topics covered include the development of nationalism, Pan-Arab movements and the Arab-Israeli conflicts.

HIS-149. History of New Jersey. 3 Credits.
LECT 3 hrs
This course covers the history of the state from colonial times to the present. It emphasizes the lives of ordinary people as well as significant events and uses local history as a way of learning more about American history.

HIS-151. Latin American History. 3 Credits.
LECT 3 hrs
A survey of the historical development of Latin America focusing on its African multicultural and multi-ethnic populations and its emergence as a force in the 20th century. Students examine original documents in order to analyze the structure of social, economic and cultural relationships. Special attention is paid to the development of Argentina, Mexico and the Caribbean nations and their relationship to the United States.
HIS-160. History of Colonial and Revolutionary America. 3 Credits.
LECT 3 hrs
This course surveys the origin and development of the English colonies in America, from the earliest settlements through the Constitutional Convention of 1787. Major topics explored include population growth, territorial expansion, secularization of religious identity, colonial ideas and institutions, the development of English imperial policy and America's break with England.

HIS-164. Civil War and Reconstruction. 3 Credits.
LECT 3 hrs
This course examines slavery and the other issues and events leading to the Civil War. Attention is focused on the political, economic, social and cultural developments of the era as well as on the war and the Reconstruction period.

HIS-166. Emergence of America - U.S. History I. 3 Credits.
LECT 3 hrs
This course examines the first half of American history from the earliest settlements to the end of the 19th century with an emphasis on American expansion and settlement of the Continent and America's frontier heritage.

HIS-167. Twentieth Century American History - U.S. History II. 3 Credits.
LECT 3 hrs
This course surveys the domestic history and foreign policy of the United States in the 20th century. The nation's immigrant experience, political development, urbanization, economic progress and emergence as a superpower are among the topics explored.

HIS-181. The Middle Ages-Honors. 3 Credits.
LECT 3 hrs
This course allows students to investigate major events, as well as significant economic, social and political developments in both Western Europe and non-Western countries. Participants have the opportunity to read and examine primary sources in translation and scholarly monographs. 
Prerequisites: Permission of department chair or honors advisor.

HIS-183. Modern Social Thought - Honors. 3 Credits.
LECT 3 hrs
Covers selected topics in the period from the 17th century through contemporary time. Readings of representative social science thinkers are related to their historical context so that students gain an appreciation of the causal reciprocity which exists among theory, practice and culture.
Prerequisites: Permission of department chair.

HIS-184. Early Modern Europe - Honors. 3 Credits.
LECT 3 hrs
This course allows students to investigate major events, as well as analyze significant economic, social, cultural and political ideas and themes through the investigation of primary documents in translation. The course covers European history during the period from 1350 to 1789.
Prerequisites: Permission of department chair or honors advisor.

HIS-185. Modern Europe - Honors. 3 Credits.
LECT 3 hrs
This course allows students to investigate major events, as well as analyze significant economic, social, cultural and political ideas and themes through the investigation of primary documents in translation. This course covers European history during the period from 1789 to the present era.
Prerequisites: Permission of department chair or honors advisor.

HIS-187. Twentieth Century American History - U.S. History II. 3 Credits.
LECT 3 hrs
This course surveys the domestic history and foreign policy of the United States in the 20th century. The nation's immigrant experience, political development, urbanization, economic progress and emergence as a superpower are among the topics explored.

HIS-160. History of Colonial and Revolutionary America. 3 Credits.
LECT 3 hrs
This course surveys the origin and development of the English colonies in America, from the earliest settlements through the Constitutional Convention of 1787. Major topics explored include population growth, territorial expansion, secularization of religious identity, colonial ideas and institutions, the development of English imperial policy and America's break with England.

HIS-164. Civil War and Reconstruction. 3 Credits.
LECT 3 hrs
This course examines slavery and the other issues and events leading to the Civil War. Attention is focused on the political, economic, social and cultural developments of the era as well as on the war and the Reconstruction period.

HIS-166. Emergence of America - U.S. History I. 3 Credits.
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Prerequisites: Permission of department chair.

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LECT 3 hrs
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Prerequisites: Permission of department chair or honors advisor.

HIS-185. Modern Europe - Honors. 3 Credits.
LECT 3 hrs
This course allows students to investigate major events, as well as analyze significant economic, social, cultural and political ideas and themes through the investigation of primary documents in translation. This course covers European history during the period from 1789 to the present era.
Prerequisites: Permission of department chair or honors advisor.

HIS-203. History of Minorities in U.S.. 3 Credits.
LECT 3 hrs
An historical survey of ethnic and racial minorities in the United States and the development of cultural pluralism. Emphasis is on the period since the Civil War, with attention to the role played by the various minorities in the nation's economic, political and cultural development and the status of these minority groups.

HIS-204. History of the African-American Experience. 3 Credits.
LECT 3 hrs
A survey of African-Americans from their African origins to the present. Emphasis is on the historical importance of the slavery experience, the black experience in the Civil War and Reconstruction era, and the development of segregation. Special attention is given to 20th century black contributions to American life and thought, black leadership issues and movements relevant to the black experience.

HIS-209. History of American Women. 3 Credits.
LECT 3 hrs
This course examines American women's experience from the colonial era through the contemporary feminist movement, including study of such key topics as the first women's movement, the suffrage and birth control movements, and concludes with understanding the conflicts and accomplishments inherent in women's status today.

HIS-247. History of the American City and Suburb. 3 Credits.
LECT 3 hrs
A survey of the development of the American city from colonial times to the present, with concentration on the period since the Civil War. The problems facing urban America today and the exodus to the suburbs also are emphasized.

HIS-291. Special Topics in History. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in history. Topics differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in History.

HIS-292. Special Topics in History. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in history. Topics differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in History.
PHL-111. Introduction to Philosophy. 3 Credits.
LECT 3 hrs
An introduction to major themes of Western and Asian philosophical thought designed to give the student a grasp of the fundamental option which reflective persons face between opposing views of the world. The way in which this option was formed is traced, and the manner is shown in which this choice influences one's thinking about topics such as the nature of the self, truth, religion, morality and government.
Prerequisites: Placement basis or ENG-025 or ENG-007 or ENG-022.

PHL-114. Ethics. 3 Credits.
LECT 3 hrs
A survey of the most influential efforts of philosophers from diverse traditions to bring reason into the process of making appropriate and adequate choices in matters basic to the flourishing of human beings. Contemporary problems analyzed include end-of-life, reproductive, genetic engineering, punishment, business and environmental issues.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

PHL-115. Logic. 3 Credits.
LECT 3 hrs
Logic is the study of reasoning, good and bad. Good reasoning moves from credible statements to others that are well supported by them. Bad reasoning obscures this process. This course examines features that make reasoning good or bad, develops critical skills in recognizing formal and informal patterns of reasoning, and deepens one's talent in constructing arguments that exemplify good reasoning.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025.

PHL-180. Introduction to Philosophy-Honor. 3 Credits.
LECT 3 hrs
This seminar follows, conceptually and historically, dominant lines of philosophical thinking on themes widely taken to be fundamental in Western and Asian culture. The course also compares and contrasts classical with contemporary perspectives.
Prerequisites: Permission of department chair or honors advisor.

PHL-210. American Philosophy. 3 Credits.
LECT 3 hrs
This course surveys important ideas, perspectives, and theories in the writings of prominent 19th and 20th century American philosophers, focusing on the classical pragmatism of Peirce, James, Dewey, and Mead. We will examine the larger intellectual and cultural context of American thought, referencing pivotal historical, legal, and intellectual events and traditions, especially the Civil War, Transcendentalism, and Darwinian evolutionary biology. This course aims to provide an understanding of the classical American pragmatist tradition and the relation of American philosophy to the history of philosophy and to American culture. Of central importance is the pragmatist connection between theory and action, that is, the effort not merely to make thought practical, but to make our practices, and our lives, intelligent.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025.

PHL-211. Philosophy of the Person. 3 Credits.
LECT 3 hrs
A lecture-discussion course of classical readings from religious and humanist authors centering on related notions of human nature, person, self, self-actualization and freedom. An effort is made to assess some social policies by reference to an adequate notion of the person.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

PHL-212. Philosophy and Religion. 3 Credits.
LECT 3 hrs
This course surveys the development and interaction of world religions, such as Judaism, Christianity, Islam, African religions, Hinduism, Buddhism, Confucianism, Taoism and Shintoism. It examines major figures, stories, rituals and beliefs of the religions, and shows how they shape the lives of believers. Finally, it analyzes philosophical concepts such as God and gods, faith and reason, immortality, good and evil, karma, love, meditation, mysticism and nirvana.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

PHL-221. Philosophy of Plato. 3 Credits.
LECT 3 hrs
Concentrated readings and in-depth discussion of several of the great dialogues of Plato, chosen from the following: Meno, Republic, Laws, Phaedo, Symposium, Phaedrus, Apology and Crito.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

PHL-220. Ancient Philosophy-Honors. 3 Credits.
LECT 3 hrs
This seminar critically examines the central ideas of Plato and Aristotle on knowledge, mind, body, freedom, nature, ethics, politics and religion. The course also contrasts their ideas with those of other ancient philosophers, such as Pythagoras, Heraclitus, Parmenides, Zeno, Epicurus, Epictetus, Cicero and Aurelius. Students develop the ability to formulate their own views on philosophic issues.
Prerequisites: Permission of department chair or honors advisor.

POL-111. American Government. 3 Credits.
LECT 3 hrs
A study of the myths and realities of the American political system. The course focuses on the constitutional development of the American system of government, the political, policymaking and implementing structures of American government, and the problem of representative government in the United States. Consideration is given to contemporary domestic and foreign policy issues.

POL-222. Constitutional Law. 3 Credits.
LECT 3 hrs
This is a survey course which examines the constitutional development of the U.S., the growth of American constitutional doctrine and law, and the judicial process within which judicial decisions are formulated and given the force of law. The constitutional basis for the government's powers and the liberties of the individual are examined within this framework. Emphasis is given to landmark U.S. Supreme Court decisions.
Prerequisites: POL-111.
POL-231. State and Local Government. 3 Credits.
LECT 3 hrs
A survey of the governing structures, politics and policies of local and state governments, with special emphasis on New Jersey. Students become acquainted with many of the major challenges and state issues facing local government today.

POL-240. International Politics. 3 Credits.
LECT 3 hrs
An introduction to the nature and problems of international politics. Analysis and consideration is given to the development and contemporary status of nation-states, their relationships and the elements of power politics. Emphasis is given to problems of war and peace, the nature of conflict and the various approaches to world peace.

POL-245. Comparative Government. 3 Credits.
LECT 3 hrs
An examination of the variety of governmental systems, both western and non-western, whose importance is reflected in the increasing interdependent nature of the world community. The political systems of the traditional European powers (Great Britain, Germany and Russia) and strategically important non-western nation-states (Japan, China, India and Mexico) are reviewed. Trends in government in the developing countries are studied as well.

POL-270. Civil Liberties-Basic Rights and Freedom. 3 Credits.
LECT 3 hrs
An analysis and examination of individual rights within a democratic society. Focus is on such major issues as freedom of expression and religion, political and racial equality, privacy rights, and the Bill of Rights and its applicability to the states. The role of the judiciary, particularly the U.S. Supreme Court, is analyzed.

POL-291. Special Topics in Political Science. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in political science. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Political Science.

POL-292. Special Topics in Political Science. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in political science. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Political Science.

PSY-112. Career Development. 3 Credits.
LECT 3 hrs
An in-depth exploration of the role of societal norms and educational and psychological factors upon individual career choices. Students establish, change or confirm career goals and learn skills necessary for ongoing career and life planning.

PSY-113. General Psychology. 3 Credits.
LECT 3 hrs
An introductory survey of the scientific studies of human behavior on the following topics: human development, physiology, learning, individual differences, motivation, perception, personality, abnormal and social behavior. The course is designed to prepare the student for further study of the broad spectrum of psychology.

PSY-116. Psychology and Education of the Disabled. 3 Credits.
LECT 3 hrs
A study of the social, emotional, physical and learning characteristics of individuals with disabilities. Methods of diagnosis and differentiation, curriculum, teaching techniques, resources and integration into the community are examined.
Prerequisites: PSY-113.

PSY-117. Health Psychology. 3 Credits.
LECT 3 hrs
This course examines the effects of the physical, mental, cultural and environmental stressors on one's mental and physical health. Modern and ancient beliefs regarding the interaction of the mind and body are presented.
Prerequisites: PSY-113.

PSY-180. General Psychology - Honors. 3 Credits.
LECT 3 hrs
This honors course is a more advanced General Psychology course which includes, but is not restricted to, a more advanced text, emphasis on research methodology, and lectures which explore subject matter in greater depth. The course introduces students to the scientific study of behavior with emphasis on critical thinking skills. Students improve their abilities to analyze data objectively both in written and oral presentations. The General Psychology Honors section can be used to fulfill the Honors Social Science elective. Admission to the course is based on the recommendation of the honors program advisor only.
Prerequisites: Permission of department chair or honors advisor.

PSY-213. Child Psychology. 3 Credits.
LECT 3 hrs
The course consists of the interplay of biological, psychological and cultural forces that shape the growing child from prenatal development through adolescence. Students learn to interpret relevant research using a critical-thinking approach.
Prerequisites: PSY-113.

PSY-214. Adolescent Psychology. 3 Credits.
LECT 3 hrs
An examination of adolescence, the transitional period between childhood and adulthood. Issues covered include the adolescent in the context of family, school and work environments, emotional and cognitive changes and the maladapted adolescent.
Prerequisites: PSY-113.

PSY-217. Educational Psychology. 3 Credits.
LECT 3 hrs
This course introduces the student to psychological theory as it applies to teaching and learning. Topics include learning theory, motivation, tests and measurements, classroom management and teaching students with special needs. Educational Psychology is strongly recommended for students pursuing a career in teaching.
Prerequisites: PSY-113.

PSY-218. Cross-Cultural Psychology. 3 Credits.
LECT 3 hrs
The student is exposed to the psychological experiences and individual differences in cognitive, emotional and behavioral development of individuals who represent diverse populations within the United States and learn how one's self-perception and the perception of others affect well-being.
Prerequisites: PSY-113.
PSY-219. Developmental Psychology - the Human Lifespan. 3 Credits.
LECT 3 hrs
The course considers the developing person from conception through death in terms of biosocial, cognitive and psychological development and discusses how these three domains interact. Additionally, it considers how contextual issues such as age, gender, culture, socioeconomic status and ethnicity broaden our understanding of human development.
Prerequisites: PSY-113.

PSY-221. Psychology of Personality. 3 Credits.
LECT 3 hrs
An in-depth discussion of major personality theories and relevant research. There is a focus on application to case studies and life experiences.
Prerequisites: PSY-113.

PSY-224. Abnormal Psychology. 3 Credits.
LECT 3 hrs
This course considers the tools involved in distinguishing abnormal from normal behavior. It surveys the range of mental disorders included in the American Psychiatric Association's Diagnostic and Statistical Manual including anxiety disorders, depression, addictions, problems of children and the elderly, deviance and schizophrenia, and covers modern treatment interventions.
Prerequisites: PSY-113.

PSY-229. Community Mental Health. 3 Credits.
LECT 3 hrs
A survey of institutional and community-based mental health programs of prevention and treatment, sources of environmental stress, identification of high risk groups, and the role of professionals and volunteers in the field.
Prerequisites: PSY-113 or an introductory course in Sociology.

PSY-290. Independent Study in Psychology. 3 Credits.
LECT 3 hrs
The design, development and implementation of individual research from formulation of hypothesis to analysis of results in the field of psychology.
Prerequisites: PSY-113 and additional 3 credit Psychology course and permission of department chair.

PSY-291. Special Topics in Psychology. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Psychology. Topics differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: PSY-113.

PSY-292. Honors Abnormal Psychology. 3 Credits.
LECT 3 hrs
This honors course is an in-depth coverage of the assessment, diagnosis and treatment of psychological disorders as categorized by the American Psychiatric Association's Diagnostic and Statistical Manual. Students are required to complete a research project using the American Psychological Association format.
Prerequisites: PSY-113 or PSY-180 and permission of Honors Advisor.

SOC-108. Cultural Geography. 3 Credits.
LECT 3 hrs
The study of the interaction of contemporary cultures and their physical environment. This course examines processes of globalization and their impact on national and local level social processes. Emphasis is placed on the global capitalist economy and its relation to national economies, political systems, populations, environments and religions.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

SOC-110. Sociology of Health and Illness. 3 Credits.
LECT 3 hrs
An analysis of the structure and function of health institutions in society with emphasis on the social psychology of illness behavior, the practitioners of medicine, the social organization of the hospital, managed care and future trends in medical care.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

SOC-120. Principles of Sociology. 3 Credits.
LECT 3 hrs
A comprehensive introduction to the discipline of sociology, examining the basic concepts, e.g., role, status, social structure, research methods, culture, socialization, stratification, norms, values, groups, associations, institutions, community, deviance and society, as well as exploring its foundations and history, and techniques of seeing and understanding the world from a sociological perspective.

SOC-180. Principles of Sociology - Honors. 3 Credits.
LECT 3 hrs
A systematic introduction to basic sociological concepts, culture, norms, status, role, groups, character structure, association, institutions, community, deviance and society.
Prerequisites: Permission of department chair or honors advisor.

SOC-202. Contemporary Social Issues - America As a Diverse Society. 3 Credits.
LECT 3 hrs
Investigates issues that challenge citizens in post-modern America. Scientific analysis of topics such as global, political and economic trends, inequality, group conflicts, pluralism, urbanism, alienation and bureaucracy, family disorganization, mass communications, addictive behaviors and social movements. Special attention is given to field research which develops student competence in understanding contemporary social issues.
Prerequisites: SOC-120.

SOC-206. Religion and Human Experience. 3 Credits.
LECT 3 hrs
An interdisciplinary course with sociological, psychological and anthropological perspectives on religion. Topics include interactions between the individual, society and religion, ritual and religious experience, religious organization and secularization. Comparisons are made between western and non-western religious systems. The rise of fundamentalism and new religious consciousness are also considered.
Prerequisites: An introductory course in Anthropology, Psychology or Sociology.
SOC-209. The Family. 3 Credits.
LECT 3 hrs
Analysis of marriage and family in various cultures with in-depth study of the contemporary United States including historical development and future trends. Topics covered are romantic love, courtship, marital interaction, divorce, gender roles and the feminist movement. Special attention is given to the post-modern family and cross-cultural comparisons are made
Prerequisites: SOC-120.

SOC-214. Cultural Diversity in America - the Sociology of Ethnic and Minority Groups. 3 Credits.
LECT 3 hrs
A study of diversity in American life with an emphasis on the cultural, political and interactional patterns of ethnic and minority groups. Topics covered include assimilation, intergroup cooperation and conflict, cross-cultural communication, and theories of prejudice and discrimination. Attention is also given to national and global demographic trends.
Prerequisites: SOC-120 or permission of department chair.

SOC-215. Physical Anthropology. 3 Credits.
LECT 3 hrs
The study of humankind emphasizing human evolution with the integration of recent research in the areas of paleontology, primatology, human genetics and ethology. Objectives of the course are to provide a knowledge of humankind's biological and physical heritage with emphasis on origins and variations.

SOC-216. Cultural Anthropology. 3 Credits.
LECT 3 hrs
An introduction to the analysis of non-western cultures and anthropological theory and methods. Emphasis is placed on the comparison of western and non-western cultures, including cross-cultural comparisons of political, economic, social and cognitive systems.

SOC-217. Archaeology. 3 Credits.
LECT 3 hrs
Introduction to the general principles of archaeological research and theory. An overview of human history and prehistory as evidenced through material remains, including the rise of state-level societies in the old and new worlds.

SOC-221. Sociology of Gender. 3 Credits.
LECT 3 hrs
An in-depth introduction to social science theory and research in the field of gender studies. The new scholarship on women's issues, feminism and gender relations is examined and critiqued.
Prerequisites: SOC-120.

SOC-222. Deviant Behavior. 3 Credits.
LECT 3 hrs
A review of deviant behavior by various deviant, outsider or disvalued members of a society, with emphasis on the environmental (socio-cultural) causes, the rewards and punishments of conforming or not conforming to group norms, the identification of deviants, the process of becoming prejudiced, why people conform, why people like each other, and the dynamics of groups. Topics are examined in a cross-cultural and historical perspective.
Prerequisites: SOC-120.

SOC-224. Social Psychology. 3 Credits.
LECT 3 hrs
A study of group behavior and the influence of groups on the perception, thinking and behavior of the individual. Topics are chosen from the following: social influences on the development of personality and attitudes, the causes of human aggression, the nature of prejudice, why people conform, why people like each other, and the dynamics of groups. Topics are examined in a cross-cultural and historical perspective.
Prerequisites: PSY-113 or SOC-120.

SOC-230. Sociology of Globalization. 3 Credits.
LECT 3 hrs
Is the current era of globalization a unique historical period or is it simply a variation of previous ones? This course examines recent social, economic and political trends, assesses the state of the world, and identifies the forces that are shaping it.
Prerequisites: SOC-120.

SOC-291. Special Topics in Sociology. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in sociology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Sociology.

SOC-292. Special Topics in Sociology. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in sociology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Sociology.

### Information Technology

**Associate in Applied Science Degree**

The CCM Associate of Applied Science in Information Technology provides curriculum that prepares students for entry level positions in the field of Information Technology. Core courses include operating systems, database systems, networking, information security, programming and web development. In addition, the AAS in Information Technology offers students five separate tracks of specialization to choose from as part of the degree program: Web Development, Mobile Application Development, Digital Forensics, Security and Networking. This curriculum provides students with the knowledge and skills required for A+, Security+ and Network+ certification.

**Degrees**

**AAS Information Technology**

(P3525)

The CCM Associate of Applied Science in Information Technology provides curriculum that prepares students for entry level positions in the field of Information Technology. Core courses include operating systems, database systems, networking, information security, programming, and web development. In addition, the AAS in Information Technology will offer the student five separate tracks of specialization to choose from as part of the degree program: Web Development, Mobile Application Development, Digital Forensics, Security and Networking. This will allow the student to specialize.
in currently popular areas of study while still focusing on a core skill set that will maintain its value for years to come even when the requirements of business/commerce change as the result of changing technology.

**GENERAL EDUCATION FOUNDATION**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG-111</td>
<td>English Composition I</td>
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<td>ENG-112</td>
<td>English Composition II</td>
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<tr>
<td>CMP-128</td>
<td>Computer Science I</td>
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<td>Social Science</td>
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<td>MAT-130</td>
<td>Probability and Statistics</td>
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**GENERAL EDUCATION FOUNDATION Credits** 20

**INFORMATION TECHNOLOGIES CORE**

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<td>CMP-130</td>
<td>Introduction to Information Technology</td>
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<td>TEL-107</td>
<td>Computers and Data Networks</td>
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<td>TEL-110</td>
<td>Routing I (CISCO)</td>
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<tr>
<td>CMP-123</td>
<td>Systems Analysis and Design</td>
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<tr>
<td>CMP-124</td>
<td>Network Security</td>
<td>3</td>
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<td>CMP-200</td>
<td>Computer Operating Systems and Utilities</td>
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<td>CMP-209</td>
<td>Introduction to UNIX</td>
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<td>CMP-235</td>
<td>Advanced UNIX</td>
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<tr>
<td>CMP-237</td>
<td>Visual Basic (VB.Net)</td>
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<td>CMP-239</td>
<td>The Internet and Web Page Design</td>
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<td>CMP-241</td>
<td>Database Programming (Oracle)</td>
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<td>IT Track Electives (below)</td>
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**INFORMATION TECHNOLOGIES CORE Credits** 42

**Web Development Track**

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<td>CMP-245</td>
<td>Web Design Tools</td>
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<tr>
<td>CMP-249</td>
<td>Advanced Web Programming</td>
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**Web Development Track Credits** 9

**Mobile Applications Development**

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<td>CMP-170</td>
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<td>CMP-271</td>
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**Mobile Applications Development Credits** 9

**Digital Forensics**

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<td>CMP-261</td>
<td>Digital Forensics II</td>
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<td>CJS-215</td>
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**Digital Forensics Credits** 9

**Security**

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<td>CMP-120</td>
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<td>CMP-125</td>
<td>Information Security Management</td>
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<tr>
<td>CMP-243</td>
<td>Ethical Hacking and Systems Defense</td>
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**Security Credits** 9

**Networking**

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<td>TEL-120</td>
<td>Routing II (CISCO)</td>
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<tr>
<td>TEL-220</td>
<td>Routing III (CISCO CCNA3 &amp; CCNA4)</td>
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<tr>
<td>TEL-233</td>
<td>Network Operating Systems</td>
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</table>

**Networking Credits** 10

**Faculty**

Nancy Binowski  
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B.S., Jersey City State College  
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Courses

CMP-101. Computer Information Literacy. 1 Credit.
LAB 2 hrs
This general education course provides students with an introduction to basic computer concepts that include learning the fundamentals of Windows, accessing the Internet and using Microsoft Word. Not for Computer Information Systems majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-101, CMP-110, CMP-126, CMP-203 or BUS-119.
Additional Fees: Course fee applies.

CMP-108. Game Design Concepts. 3 Credits.
LECT 3 hrs
This course provides the student with an introduction to fundamental game design concepts. The range of topics includes game worlds and settings, character creation, storytelling, game audio, game art and animation, gameplay and user interface design. In addition, the history of the game industry, social impact and the future of gaming are discussed. Students analyze various games and genres and create their own game design document.
Additional Fees: Course fee applies.

CMP-120. Foundations of Information Security. 3 Credits.
LECT 3 hrs
This course provides a principled introduction to the field of information security. History, characteristics and models of information and computer security are explored. Topics such as risk management, logical and physical security, continuity, cryptography, and architecture are discussed. The National Centers of Academic Excellence in Cyber Defense Education Knowledge Units and the CISSP CBK domains are incorporated into the course content affording the student reinforcement and mastery of information security terminology and concepts.
Additional Fees: Course fee applies.

CMP-123. Systems Analysis and Design. 3 Credits.
LECT 3 hrs
Techniques of object-oriented and structured systems analysis and design are examined in the context of the software development life cycle. Topics include project management, Unified Modeling Language (UML), data flow diagrams, system flow charts, application and user-interface design. Class projects provide students with practice in using CASE tools in the analysis and design of application systems. Students participate in a semester-long team project to design an application.
Prerequisites: CMP-128 and one of the following: CMP-129, CMP-150, CMP-237, CMP-239
Additional Fees: Course fee applies.

CMP-124. Network Security. 3 Credits.
LECT 3 hrs
This course provides an in-depth study of network attack techniques and methods to defend against them. Areas of study include communication security, infrastructure security, cryptography, and operational and organizational security as it relates to network hardware, software and data. Topics include authentication, attacks, virtual private networks, email protection, web security, wireless, firewalls, intrusion detection, cryptography, disaster recovery and computer forensics regarding networked systems. Using a hands-on approach, powerful tools to diagnose and correct security breaches are investigated and manipulated. This course is mapped to the National Centers of Academic Excellence in Cyber Defense Education Knowledge Units and vendor-neutral certification exam.
Additional Fees: Course fee applies.

CMP-125. Information Security Management. 3 Credits.
LECT 3 hrs
This course entails identifying an organization's information assets and the development, documentation and implementation of policies, standards, procedures and guidelines that ensure confidentiality, integrity and availability of those assets. This course, which is mapped to the National Centers of Academic Excellence in Cyber Defense Education Knowledge Units, prepares students to understand the planning, organization and roles of individuals involved in security, to develop security policies, and to utilize management tools to identify threats, classify assets and rate vulnerabilities. A detailed, real-world security plan is developed using customized strategies.
Additional Fees: Course fee applies.

CMP-126. Computer Technology and Applications. 4 Credits.
LECT 3 hrs, LAB 2 hrs
This general education course teaches: (1) basic computer-use concepts such as hardware and peripherals, file organization and management, and operating system use; (2) Internet use, browsers and search engines; (3) software applications including word processing, spreadsheet, electronic slideshow presentations, database use and calendaring; (4) netiquette, ethics and copyright policies; (5) downloading and installing software and plug-ins; (6) communications technologies including email, blogs and Web technologies; (7) personal computer and information security; and (8) career exploration, job search strategies and portfolio development. Students are required to complete a series of laboratory assignments that illustrate skills and use technologies in the areas listed including a cross-applications/technologies project. Students will not receive credit towards graduation for more than one of the following courses: CMP-101, CMP-110, CMP-126, CMP-203 or BUS-119.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007
Additional Fees: Course fee applies.
CMP-128. Computer Science I. 3 Credits.
LECT 2 hrs, LAB 2 hrs
In this introductory course, students obtain fundamental computer science knowledge and develop programming skills using an object-oriented approach, incorporating security awareness, human-computer interactions and social responsibility. This course provides students with a basic foundation in computing history, computing careers, computer organization, operating system responsibilities, software development process, algorithm design and analysis, programming paradigms, and human interaction design.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

CMP-129. Computer Science II. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course is the second in a three-course sequence that provides students with a foundation in Computer Science. Students develop intermediate-level programming skills using an object-oriented approach with an emphasis on software development, fundamental algorithms and data structures, software assurance, and ethical conduct.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-130. Introduction to Information Technology. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This is the introductory course in the field of study of Information Technology. This course introduces the student to the software and hardware found in today's computing environment and the basic skills and tools required to install, support and upgrade common information technology used by businesses, organizations and academic institutions. This course helps the student prepare for the CompTIA A+ certification examination. In addition, the basics of network architecture, database management, information security and web infrastructure are covered. At completion the student will be prepared for further study in the curriculum of Information Technology and equipped with the fundamental knowledge required of an IT Professional. The students use popular desktop applications to organize and perform IT laboratory activities.
Additional Fees: Course fee applies.

CMP-135. Computer Concepts with Applications. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This general education course is designed to provide familiarity with current software for word processing, spreadsheet, presentation and database applications. An introduction to web browsers, computer and information security, social impact of computing, concepts in computer hardware, and application and system software is also included. Students are required to complete a series of laboratory assignments that illustrate skills in using the above software applications. Students must allocate time to complete assignments using the same software (available on campus). Not for Computer Information Systems majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-135, CMP-126 or BUS-119.
Additional Fees: Course fee applies.

CMP-150. Game Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course covers fundamental game programming techniques using an industry-standard scripting language. Students learn how to use a popular game engine to build game programs. Topics include sprites, animation, collisions, timers, game state variables, player input, audio, user interface design and storyboarding. Laboratory work includes several game element programming exercises, leading up to a final game project.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-160. Digital Forensics I. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces the student to the fundamental concepts of computer forensics. By conducting a detailed examination of data media for structure, file system type, volumes, lost and hidden areas, the student will develop the ability to collect and analyze computer data for digital evidence. An understanding of specific resources and an exploration of software tools available for data recovery and forensic analysis will be conducted in a laboratory setting. Upon completion of this course the student will demonstrate various data recovery techniques as the basis for forensic evaluation.
Additional Fees: Course fee applies.

CMP-170. Mobile App Design. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces students to the design and development of mobile applications. Students will learn how to install and use a leading mobile app software development kit, design the user interfaces using different design patterns, create and edit app resources, and design and develop native source code. Students will strengthen their programming skills in user input, variables, operations, decision control structures, methods, lists and arrays. Audio, images, animation and other application controls will be incorporated into apps. Other topics include testing, deployment and publishing apps.
Prerequisites: CMP-128
Additional Fees: Course fee applies.

CMP-200. Computer Operating Systems and Utilities. 3 Credits.
LECT 3 hrs, LAB 1 hr
This is an introductory course in personal computer operating systems. Topics include the features and characteristics of operating system software; installation and configuration including customization, file organization and management; memory and storage management; control of peripheral devices; troubleshooting; networking wizards; and the use of utilities to monitor system performance, backup data and optimize disks. Laboratory assignments provide hands-on opportunities for students to apply the information related in lectures.
Additional Fees: Course fee applies.
CMP-205. Database Programming (MS Access). 3 Credits.
LECT 3 hrs, LAB 1 hr
It is recommended that students take CMP-207 Electronic Spreadsheets before taking CMP-205. This course is designed to develop skill in the use of a leading database management system. Topics include the design and maintenance of relational databases and their objects (tables, queries, forms and reports). Also covered is the use of macros to implement procedures. The final portion of the course covers automation techniques by introducing the Visual Basic for Applications programming language and the use of this code to create a user-friendly interface.

Additional Fees: Course fee applies.

CMP-207. Electronic Spreadsheets (MS Excel). 3 Credits.
LECT 3 hrs, LAB 1 hr
It is recommended that students take CMP-207 Electronic Spreadsheets before taking CMP-205. This is a course in problem solving using a popular spreadsheet program. Emphasis is on construction of elementary to moderately complex worksheets; charting worksheet data, database definitions and reporting; and using VBA (Visual Basic for Applications) to construct simple macros.

Additional Fees: Course fee applies.

CMP-209. Introduction to UNIX. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course combines lecture with hands-on training in the UNIX Operating System. Upon successful completion of this course, students are proficient in using the UNIX Operating System commands and utilities. Topics include purpose and functions of an operating system, hierarchical file system, the shell, vi editor, file security, process management, sorting, networking theory and communications, redirection, piping, and an introduction to shell scripts.

Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-217. Cooperative Work Experience-Information Technologies. 3 Credits.
COOP 3 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent career employment. This course may be taken in fulfillment of the Computer Information Systems elective. Interested students should consult with the department chair. Computer Information Systems majors only

Prerequisites: Permission of department chair

CMP-218. Cooperative Work Experience Information Technologies - Related Class. 1 Credit.
LECT 1 hr
A supplement to the Department of Information Technologies Cooperative Work Experience, this course provides a variety of exercises that further develop the students' technical and communication skills, occupational adjustment, and career planning. This course is offered online. Computer Information Systems majors only.

Prerequisites: Permission of department chair
Corequisites: CMP-217.

CMP-230. Computer Architecture and Assembly Language. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is an introduction to computer architecture and assembly language programming. Topics covered include digital logic and data representation, computer architecture and organization, interfacing and input/output strategies, memory architecture, functional organization, and multiprocessing. Students are exposed to basic assembly language programming techniques in laboratory assignments.

Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-233. Data Structures and Algorithms. 3 Credits.
LECT 3 hrs, LAB 1 hr
The course includes advanced computer science topics dealing with logical structures of data and the design and analysis of computer algorithms operating on these structures. The course concentrates on data structures such as linked lists, trees, queues, stacks, hash tables and graphs. Algorithms covered include stacks, queues, hash tables, trees, graphs, heaps, sorting and searching. Both iterative and recursive algorithms are explored with analysis of their efficiency. Problems and computer exercises implementing the above structures and techniques are assigned.

Prerequisites: CMP-128 or equivalent and MAT-123 or higher
Additional Fees: Course fee applies.

CMP-235. Advanced UNIX. 3 Credits.
LECT 3 hrs, LAB 1 hr
This is a continuation course in UNIX programming with emphasis on building upon the previously developed skills. Topics include an in-depth coverage of shell scripts, system administration, GUIs, differences and similarities between shells, higher-level programming languages in the UNIX environment, the Internet, sorting, and other advanced topics.

Prerequisites: CMP-209
Additional Fees: Course fee applies.

CMP-237. Visual Basic (VB.Net). 3 Credits.
LECT 3 hrs, LAB 1 hr
This is a fundamental course in object-oriented programming in a Windows environment. Topics include form design, managing controls, handling variables and constants, using decision and loop structures to construct efficient code, handling built-in functions, and simple debugging techniques for detecting errors. Basic fundamentals of classes are introduced.

Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-239. The Internet and Web Page Design. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is an in-depth study of the Internet and its various services that allows students to appreciate the impact of the Internet in society. Students create World Wide Web home pages using strict Hypertext Markup Language, Cascading Style Sheets (CSS) and XHTML. Other current specifications also are discussed.

Additional Fees: Course fee applies.
CMP-241. Database Programming (Oracle). 3 Credits. 
LECT 3 hrs, LAB 1 hr
This course uses the rules and syntax of an “industrial-strength” database programming language that can be used on all types of computers. Topics include relational database aspects, data input and validation, creation and maintenance of files, query, user control center, and application generator. Emphasis is on development of programs related to business database applications. 
Prerequisites: CMP-113 or CMP-128 or equivalent or permission of department chair
Additional Fees: Course fee applies.

CMP-243. Ethical Hacking and Systems Defense. 3 Credits. 
LECT 2 hrs, LAB 2 hrs
This course combines an ethical methodology with the hands-on application of security tools, techniques, and methodologies in performing computer system and network security vulnerability - risk analyses - to better help students secure and defend their systems. Topics to be covered include internal and external penetration tests, risk analysis methodology, and security audits. Students are introduced to common countermeasures that effectively reduce and/or mitigate attacks. This class is designed to help students prepare for professional careers in the information security field and the Certified Ethical Hacker (CEH) certification exam. 
Prerequisites: CMP-124
Additional Fees: Course fee applies.

CMP-244. Web Design II. 3 Credits. 
LECT 3 hrs, LAB 3 hrs
This course is a continuation of The Internet and Web Page Design with an emphasis on more advanced concepts and techniques. Topics include Cascading Style Sheets, forms, JavaScript and other current scripting languages. Students learn to work with hosting and web server technology. For their final project, students build a website using these techniques. 
Prerequisites: CMP-239
Additional Fees: Course fee applies.

CMP-245. Web Design Tools. 3 Credits. 
LECT 2 hrs, LAB 3 hrs
Students learn the leading web design and development tools including the Adobe Creative Suite. Instruction and practice in the suite provides seamless integration and a unified user interface across all tools to streamline multimedia and web development. Through hands-on practice, activities and relevant project application, students develop competence in the use of industry-leading development tools. 
Prerequisites: CMP-108 or CMP-128 or CMP-239 or MED-110 or GRD-111
Additional Fees: Course fee applies.

CMP-246. Operating Systems. 3 Credits. 
LECT 2 hrs, LAB 2 hrs
This course introduces students to operating systems and their uses and design concerns. Covered are the roles and responsibilities of operating systems including scheduling, concurrency and process synchronization, memory management, file organization and management, and control of peripheral devices. Security and protection topics are also addressed. Laboratory assignments provide interactive learning experiences which demonstrate operating system concepts using programming, operating system commands and scripting. 
Prerequisites: CMP-129
Additional Fees: Course fee applies.

CMP-249. Advanced Web Programming. 3 Credits. 
LECT 2 hrs, LAB 2 hrs
This advanced course in Web Development introduces the student to creating interactive and dynamic Web sites using current Web programming. Building on concepts and principles of computer programming and scripting languages, students will interact with Web server technologies and develop front end, advanced professional Web sites with fully functioning back end support. 
Prerequisites: CMP-128 and CMP-244
Additional Fees: Course fee applies.

CMP-250. Game Production. 3 Credits. 
LECT 2 hrs, LAB 2 hrs
Working in teams, students combine their game design and programming skills to explore the practical challenges of managing the development of games. Industry-standard software and advanced programming are used in this capstone course to develop a functioning game of the highest professional quality. Emphasis is placed on the game design document, storyboarding, the game production process, user interface and game design, interactive storytelling, character development, 3D animation, special effects, audio, the collaborative process, and usability testing. 
Prerequisites: CMP-150 or MED-220
Additional Fees: Course fee applies.

CMP-261. Digital Forensics II. 3 Credits. 
LECT 2 hrs, LAB 2 hrs
This advanced course in digital forensics will enable the student to understand advanced file system forensics, the theory of forensic procedures, review of identification, imaging, and authentication, review of FAT file system, NTFS and EXT3 file systems, partitioning, Window's logical analysis, email analysis, and web history analysis conducted in a laboratory setting. Upon completion of this course the student will apply investigative methodology as it applies to data artifacts, including where they are found in computer operating systems, and how they are deployed in digital forensics. The student will perform forensic media acquisition and verification. 
Prerequisites: CMP-160
Additional Fees: Course fee applies.

CMP-271. Mobile App Programming. 3 Credits. 
LECT 2 hrs, LAB 2 hrs
This second course in a series of mobile app development courses covers advanced design elements and programming constructs. Topics include accessing device resources including the camera, accelerometer, and GPS; utilizing local and networked database services; animation and gaming; accessing background services; file management; designing for multiple devices including wearables; and localization/internationalization and accessibility design. Students will create apps individually and as part of a team and their learning will culminate with the development of a final project that will be of industry-level quality. 
Prerequisites: CMP-170
Additional Fees: Course fee applies.
CMP-290. Independent Study in Information Technology. 3 Credits.
LECT 3 hrs
Students, in consultation with the department chair, undertake an in-depth analysis of a selected topic, problem or issue related to information technology or pursue additional computer-related work experience. Students are responsible for developing a statement of goals and strategies, maintaining a weekly log, and preparing a written and oral summary report. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-291. Special Topics in Information Technology. 3 Credits.
LECT 3 hrs, LAB 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-292. Special Topics in Information Technology. 3 Credits.
LECT 3 hrs, LAB 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course(s) is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-293. Special Topics in Information Technology II. 1 Credit.
LECT 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-296. Cooperative Work Experience-Information Technology (45-100 hours). 1 Credit.
COOP 1 hr
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 45-100 hours in duration. The course may be taken in fulfillment of a Computer Information System (CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

CMP-297. Cooperative Work Experience-Information Technology (90-200 hours). 2 Credits.
COOP 2 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 90 to 200 hours in duration. The course may be taken in fulfillment of a Computer Information System (CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

CMP-298. Cooperative Work Experience-Information Technology (135-300 hours). 3 Credits.
COOP 3 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 135 to 300 hours in duration. The course may be taken in fulfillment of a Computer Information System (CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

TEL-107. Computers and Data Networks. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course is a continuation of topics introduced in earlier courses. Data networking, including concepts of essential computer components, data storage, network operating systems, computer networking models and communication framework for the transmission of voice, text and video data will be explored in greater detail. The laboratory component will cover topics on computer setup, network setup and integration and operating system utilities.
Prerequisites: CMP-130 and CMP-200.

TEL-109. Introduction to Telecommunications. 3 Credits.
LECT 3 hrs
This course is an introduction to the terminology and standard practices of the telecommunications industry, including concepts of integrating office automation procedures with telecommunications networks (wired and wireless) using voice, data, text and video information. Coverage includes various transmission and switching media as well as an understanding of message routing hierarchies. Issues of regulation and deregulation are discussed together with equipment selection and management topics. The mechanics of the Internet also are introduced with a description of Voice over Internet Protocol (VoIP). Other topics covered include laser communication links, teleconferencing, data network protocols and architectures and satellite technology.

TEL-110. Routing I (CISCO). 3 Credits.
LECT 2 hrs, LAB 3 hrs
The course follows CISCO’s CCNA1 curriculum for Networking Basics. Lecture and laboratory assignments are an integral part of the course. The course focuses on network terminology and protocols, local area networks (LANs), wide area networks (WANs), Open System Interconnection (OSI) networking model, cabling, cabling tools, routers, router programming, Ethernet, Internet Protocol addressing/subnetting and network standards.
Additional Fees: Course fee applies.
TEL-120. Routing II (CISCO). 3 Credits.
LECT 2 hrs, LAB 3 hrs
The course follows CISCO’s CCNA2 curriculum for Routers and Routing Basics. The course focuses on initial router configuration, CISCO IOS software management, routing protocol configuration, TCP/IP and access control lists (ACLs). Through lectures and laboratory assignments, students develop the skills to configure and maintain a router as well as the creation of software firewalls.
Prerequisites: TEL-110
Additional Fees: Course fee applies.

TEL-220. Routing III (CISCO CCNA3 & CCNA4). 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course follows CISCO’s CCNA3 curriculum for Switching and Intermediate Routing and CISCO’s CCNA4 curriculum for WAN Technologies. The first half of the course focuses on advanced IP addressing techniques (Variable Length Subnet Masking (VLSM), intermediate routing protocols (RIP v2, single-area OSPF, EIGRP), command-line interface configuration of switches, Ethernet switches, Virtual LANs (VLANs), Spanning Tree Protocol (STP) and VLAN Trunking Protocol (VTP). The second half of the course focuses on advances IP addressing techniques (Network Address Translation (NAT), Port Address Translation (PAT), and (DHCP), WAN terminology and technology, PPP, ISDN, DRR, Frame Relay, network management and an introduction to optical networking. Preparation is also given to the study of CISCO’s CCNA certification examination. Students learn through lecture and laboratory assignments.
Prerequisites: TEL-120
Additional Fees: Course fee applies.

TEL-232. Data Communication. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is a study of systems and equipment used in the transmission of data, interfacing data links to computers and troubleshooting of data links. Topics include VoIP (Voice over Internet Protocol), wireless technology, optical networking, serial interfaces, routing, link analysis, modems, data link and protocols, networking. The laboratory makes extensive use of protocol analysis for diagnostics.
Prerequisites: ELT-209 or TEL-110
Additional Fees: Course fee applies.

TEL-233. Network Operating Systems. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is an introduction to various network operating systems. Emphasis is placed on the study of a server in a client/server computer network. Topics of study include installation of a network operating system, securing a system, creating users and groups, partitioning of hard drive, installation of transport protocols, creating and maintaining printers, event viewing, performance monitoring, registry modification, configuring a server, creating and maintaining the active directory and troubleshooting the network.
Additional Fees: Course fee applies.

TEL-234. Telecommunications Systems. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course includes the study of the elements of telecommunications systems, emphasizing both voice and digital communications. Telephone loop operation and signaling, central office interface, switching, routing, transmission protocols, network architecture, T1 multiplexing and high-speed transmission are major topics. Advanced telecommunications topics such as ISDN and DSL are studied. Laboratory includes configuration, maintenance and diagnostic telecommunication systems.
Prerequisites: ELT-209 or CMP-230 and TEL-110
Additional Fees: Course fee applies.

TEL-239. Cooperative Work Experience - Telecommunications Systems Technology. 3 Credits.
COOP 3 hrs
This course is a field experience in the laboratory facilities of an industrial firm. Designed for students in Telecommunication Systems Technology programs to obtain industrial experience as a supplement to their college studies prior to career employment. Seminar evaluation visitations are included. Completion of the first year of the program is required to enroll.
Prerequisites: Permission of department chair.

TEL-290. Independent Study in Telecommunications Systems Technology. 3 Credits.
LECT 3 hrs
Students, in consultation with a Telecommunications Technology advisor, undertake an in-depth analysis of a selected topic, problem or issue related to the telecommunications industry or pursue additional related work experience. Students are responsible for developing a statement of goals and strategies, maintaining a weekly log and preparing a written and oral summary report. Written permission must be obtained from the department before registering for this course.
Prerequisites: Permission of department chair.

TEL-291. Special Topics in Telecommunications Systems Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
These courses provide students with an examination of selected topics or issues in telecommunications systems technology. Topics may differ each time the course is offered. Students should consult a Telecommunications Technology advisor for additional information.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

TEL-292. Special Topics in Telecommunications Systems Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
These courses provide students with an examination of selected topics or issues in telecommunications systems technology. Topics may differ each time the course is offered. Students should consult a Telecommunications Technology advisor for additional information.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.
International Studies - Liberal Arts and Sciences

Associate in Arts Degree

This degree program is designed to meet the basic requirements of the first two years of college programs for students who plan to graduate and transfer to a four-year college or university. The program offers a wide range of flexibility in terms of a student's ultimate educational goals and provides adequate preparation for further study leading to professional competence in specialized fields, especially in the humanities or the social sciences.

These programs also accommodate individuals seeking two years of a liberal higher education.

The program offers options in Human Services, Humanities/International Studies, Humanities/Broadcasting Arts and Technology, Humanities/Media Studies - Journalism, Humanities/Music, Humanities/Musical Theatre and Humanities/Social Science.

For more information about the International Studies option, explore the tabs above or visit the Languages & ESL Department (http://www.ccm.edu/academics/divdep/liberalarts/languages), where the program is housed.

Degrees

AA International Studies

An Option within Liberal Arts and Sciences

(P1160)

The International Studies program provides students with the general education course work and global perspective needed to transfer to a similar program at a four-year institution. It is ideal for students whose career goals are in the fields of international affairs, diplomacy, foreign languages and cultures, teaching, research, or international business.

General Education Foundation

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Mathematics

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International Studies Core

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<td>International Studies Core Credits</td>
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Total Credits | 63 |

Faculty

James Hart
Chairperson, Languages and ESL
Assistant Professor, Spanish, Intercultural Communication, and ESL
M.A., Montclair State University
B.A., American University
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Dr. Marcia Piccallo
Assistant Chairperson, Languages and ESL
Associate Professor, Spanish
Ph.D., MPH, City University of New York Graduate School
M.A., B.A., Rutgers University
EH 116 973-328-5418 mpicallo@ccm.edu

Courses

ISA-110. Intercultural Communication. 3 Credits.
LECT 3 hrs
This course explores the theory and practice of communication between individuals or groups from different cultures. Topics include a basic theoretical foundation in culture and communication, cultural values, worldview, verbal/nonverbal communication, cultural identity and intercultural competence.

Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

ISA-215. A Survey of Islam. 3 Credits.
LECT 3 hrs
This course covers the central beliefs and practices of Islam, one of the major world religions. It analyzes passages in the Qur’an and their often varied interpretations among the Muslim community. It studies the life of the Prophet Muhammad and highlights of Muslim history, examines the divisions between Sunni and Shiite Muslims, explores diverse schools of Sharia (Islamic Law), and shows the large common ground Islam shares with Christianity and Judaism in its belief in one God, major prophets, stories and ethical beliefs. Finally, the course analyzes current events in Muslim countries, especially in the Middle East.

ISA-291. Special Topics - International Studies. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in International Studies. Topics may differ each time the course is offered. Students should contact the department chair for further information.

Prerequisites: Permission of department chair.
ISA-292. Special Topics International Studies. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in International Studies. Topics may differ each time the course is offered. Students should contact the department chair for further information.
Prerequisites: Permission of department chair.

Journalism, Media Studies

The Journalism program prepares students to successfully transfer and complete degree requirements in communication or journalism. This program draws from the Liberal Arts and Humanities to develop communication skills and technical proficiencies. The Journalism program also allows some degree of specialization.

For more information, visit the Department of Communication (http://www.ccm.edu/academics/divdep/liberalarts/communication/default.aspx) webpage.

Degrees

AA Journalism, Media Studies - An Option within Liberal Arts

P1133

General Education Foundation

Communication 9
- ENG-111 English Composition I
- ENG-112 English Composition II
- COM-109 Speech Fundamentals
Math-Science-Technology 12
- MAT-130 Probability and Statistics
  or MAT-120 Mathematics for the Liberal Arts
Laboratory Science Elective
- CMP-126 Computer Technology and Applications
Social Science 6
- SOC-120 Principles of Sociology
Political Science Elective
Humanities 9
- Language/Literature Sequence
  1 Language/Literature Elective
History 6
Diversity 3
- ISA-110 Intercultural Communication
General Education Foundation Credits 45

Journalism Core

COM-111 Introduction to Journalism 3
COM-112 Advanced Journalism 3
COM-115 Introduction to Mass Media 3
COM-209 Editing and Publication Design 3
Restrict Electives (select two classes) 6
- COM-101 Introduction to Communication
- COM-102 Advertising and Society
- COM-103 Introduction to Public Relations
- COM-104 Interpersonal Communication

COM-105 Media Literacy
COM-120 Broadcast Journalism
COM-230 Communications Internship
COM-234 Introduction to Film
COM-291 Special Topics in Communication
COM-292 Special Topics in Communication
MED-114 Media Aesthetics
MED-117 Introduction to Broadcasting
MED-211 Television Production I
MED-212 Television Production II
PHO-213 Documentary Photography

Journalism Core Credits 18
Total Credits 63

1 Students should consult their academic advisors when selecting these courses.

Faculty

Dr. Matthew T. Jones
Chairperson, Department of Communication
Associate Professor, Communication
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John Soltes
Assistant Professor, Journalism
M.S., Columbia University
B.A., Rutgers University
DH 301 973-328-5469 jsoltes@ccm.edu

Courses

COM-101. Introduction to Communication. 3 Credits.
LECT 3 hrs
Survey of the field of communication within a variety of contexts including: Interpersonal, Group, Organizational, Mass Media, Intercultural and International Communication.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

COM-102. Advertising and Society. 3 Credits.
LECT 3 hrs
This is a survey course that follows the advertising industry from the early days of the Industrial Revolution through modern social media campaigns. There will be a strong emphasis on the cultural and societal effects of advertising messages on mass markets. There will also be a focus on advertising as a form of social communication, which has embedded impacts on socio-economic, political, and global communication. Students will acquire skills in media literacy and ethical reasoning with respect to advertising campaigns. By the end of the course students will be able to identify the current challenges to consumers and the advertising industry.
Prerequisites: Placement Basis or ENG-007, ENG-022 or ENG-025.
COM-103. Introduction to Public Relations. 3 Credits.
LECT 3 hrs
This course is a survey of the principles and practices in public relations. Students gain an understanding of the history, development and globalization of PR, the impact of PR criticism, the techniques and tactics of PR practitioners. They learn the concepts of "publics" and professionalism. Special emphasis is placed on the comprehension of the laws and ethics mandated for the PR industry and the goals and objectives necessary to the future credibility of PR.
Prerequisites: Placement basis or ENG-007, ENG-022 or ENG-025.

COM-104. Interpersonal Communication. 3 Credits.
LECT 3 hrs
Students in this course discover how to communicate effectively in everyday relationships through the study of both theoretical frameworks and practical application. Topics include self-perception, cultural influences, verbal and nonverbal messages, conflict management, as well as an in-depth look at communication within the family unit, friendships, romantic partners and the workplace.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

COM-105. Media Literacy. 3 Credits.
LECT 3 hrs
Media Literacy prepares students to better understand the 21st century media environment. Topics covered include media form, media content, media effects and influence, and media industries. There will be a particular focus on developing stronger critical and analytical skills to better use media for personal and professional benefit. We will investigate media through several perspectives with a concentration on how media works and how to better navigate and manage the information we receive.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025.

COM-109. Speech Fundamentals. 3 Credits.
LECT 3 hrs
This course introduces the fundamentals of organizing, outlining, and presenting narrative, informative and persuasive speeches. Specific attention is given to each student’s verbal and nonverbal delivery in the communication of ideas, as well as to the development of creative abilities, critical insights and listening skills.
Prerequisites: Placement Basis or ENG-007 or ENG-022 or ENG-025.

COM-111. Introduction to Journalism. 3 Credits.
LECT 3 hrs
Instruction and practice in reporting and writing news stories across multimedia platforms. Topics include new media, writing, reporting, interviewing, researching, news judgment, Associated Press style, media ethics and media law. Students utilize computers in the classroom to research topics and complete assignments on deadline. The culmination of the course is an e-portfolio that utilizes a basic content management system and combines written articles with original photography. A one-time commitment of three hours of newspaper production is required.
Prerequisites: Placement Basis or ENG-007 or ENG-022 or ENG-025.

COM-112. Advanced Journalism. 3 Credits.
LECT 3 hrs
Instruction and practice in news reporting, computer-assisted reporting and writing techniques. Specialized topics include profile writing, government meetings, statistics/budgets, police, weather, tragedies, global issues, news conferences, speeches, media ethics and media law. Students utilize computers in the classroom to research topics and complete assignments on deadline. New media is incorporated throughout the semester. A one-time commitment of 6 hours of newspaper production on campus is required.
Prerequisites: COM-111 or permission of department chair.

COM-115. Introduction to Mass Media. 3 Credits.
LECT 3 hrs
Introduction to Mass Media is a survey course focusing on the history and consequences of mass media for the individual, society and culture. Specific areas of emphasis include the historical development of media forms, theories concerning the effects of media, and the evolving future of media. Special attention will also be paid to current events in the media and their social consequences.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025.

COM-120. Broadcast Journalism. 3 Credits.
LECT 3 hrs
Instruction and practice in broadcast reporting, writing and editing. Students utilize traditional broadcast skills within a multimedia environment. Topics include broadcast writing techniques and style, newscast organization, photojournalism, social media, new media, broadcast stories for online journalism, media ethics and media law. Students write broadcast scripts, maintain blogs and produce timed newscasts.
Prerequisites: COM-111
Additional Fees: Course fee applies.

COM-209. Editing and Publication Design. 3 Credits.
LECT 3 hrs
Instruction and practice in copy editing, layout, design, headline writing, photo editing, news evaluation, media ethics and media law. Students utilize computers, Adobe Photoshop and Adobe InDesign to complete assignments, and they help produce the student newspaper.
Prerequisites: COM-111 or permission of department chair
Additional Fees: Course fee applies.

COM-228. Cooperative Work Experience Communication. 3 Credits.
COOP 3 hrs
This course provides students in the Communications curriculum with job-oriented training and practical experience in a real work environment. This course is designed to supplement the student's academic coursework and to facilitate the career development and exploration process.
Prerequisites: Permission of department chair
Corequisites: COM-229.

COM-229. Coop. Work Experience - Related Class. 1 Credit.
LECT 1 hr
Prerequisites: Permission of Coordinator
Corequisites: COM-228.
COM-230. Communications Internship. 3 Credits.
COOP 3 hrs
The Communication Internship offers practical experience working part-time for an approved communication agency, organization or business under the supervision of a Communication faculty. Alternatively, it can be used to complete a significant research project under the guidance of a Communication faculty member. Students must have second year status, GPA of 3.5 or higher.
Prerequisites: Permission of department chair.

COM-234. Introduction to Film. 3 Credits.
LECT 3 hrs
Through the study of representative major works of world cinema, students are introduced to the history and development of film as a creative medium or artistic expression and mass communication. Topics include production practices, cinema as an industry, the relationship between history and cinema, the psychology of cinema, and socio-cultural factors related to cinema. Students are encouraged to approach film analytically and critically, to consciously examine the language and aesthetic forces of cinema, and to expand cinematic interest into realms beyond the Hollywood mainstream production.
Prerequisites: Placement basis or ENG-007 or ENG-025 or ENG-022.

COM-291. Special Topics in Communication. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Communication. Topics may differ each time the course is offered. Students should consult the assistant chair for further information.
Prerequisites: An introductory course in Communication.

COM-292. Special Topics in Communication. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Communication. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Communication.

**Landscapes and Horticultural Technology**

**Associate in Applied Science Degree**

Named one of the top six Outstanding Post-Secondary Agriculture Programs in the United States by the National Association of Agricultural Educators, the Landscape and Horticultural Technology (LHT) programs at County College of Morris (CCM) provide students with the technical knowledge and practical skills to succeed in a wide range of horticultural related professions.

With a primary focus on ornamental horticulture, students have an opportunity to earn an Associate in Applied Science degree in Landscape Management and Design, Turf and Turfgrass Management, or Agribusiness.

The programs also provide students who have very focused career goals with the choice of earning Certificates of Achievement in Landscape Design, Grounds Maintenance, Landscape Contractor or Garden Center. These certificates are designed specifically to meet the needs of students who may be currently employed and want to enhance their skill set or for those who already hold baccalaureate or associate degrees in other areas. Certificates of Achievement may also be desirable for students who are making a career change and want or need to earn a credential as quickly as possible.

Each program is designed to prepare students for employment in specialized occupations in the field of agriculture, horticulture, and ornamental horticulture.

The Agribusiness degree program prepares students for careers in horticulture business operations including retail and wholesale endeavors, service businesses, retail and wholesale equipment suppliers, and floral shops.

The Landscape Management and Design degree program prepares students to become professional landscape designers or specialists in the design and installation of landscapes in both the residential and commercial markets.

The Turf and Turfgrass Management degree program is specifically structured to prepare students to become professional turf managers of commercial complexes, sports turf, recreational turf and golf courses.

The emphasis in each program is on the development of professional attributes, problem-solving capability and strong technical skills. Students are provided opportunities to develop leadership ability and entrepreneurial skills as well as skills in management.

Graduates of the Landscape and Horticultural Technology programs can find employment as landscape designers, landscape installers, managers and supervisors, golf course superintendents, grounds maintenance supervisors, and much more. Upon completion of the associate’s degree, students may also elect to transfer to a four-year institution to further their education. The Department of Landscape and Horticultural Technology has an articulation agreement with Delaware Valley College which provides CCM-LHT graduates a guarantee of junior status as long as they meet the minimum grade point criteria.

For more information, visit the [Landscape and Horticultural Technology](http://www.ccm.edu/academics/divdep/hns/LHT) website.

**Degrees**

- AAS Agribusiness (p. 147)
- AAS Landscape Management and Design (p. 148)
- AAS Turf and Turfgrass Management (p. 148)

**Agribusiness**

(P3321)

This program provides career preparation in the skills needed to work in horticultural related service industries as well as in both wholesale and retail sales of horticultural products. It is ideal for those who love the business aspect of the horticultural field but who do not feel drawn to designing and for those with a desire to be actively involved in sales positions. The Agribusiness degree program includes a strong emphasis on both horticultural technical knowledge as well as business management skills. Career opportunities are varied and, in addition to retail and wholesale nurseries, include equipment suppliers, landscape product suppliers,
fertilizer and pesticide sales, as well as business management related to design build companies. 

Due to continual program revisions mandated by the accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisors when selecting courses.

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<td>ENG-112</td>
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<td>MAT-120</td>
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<td>BIO-127</td>
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<td>CHM-117</td>
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General Education Foundation Credits: 20-21

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<td>LHT-233</td>
<td>Cooperative Agricultural Experience</td>
<td>3</td>
</tr>
</tbody>
</table>

Agribusiness Core Credits: 46

Total Credits: 66-67

¹ Choose any 3 credit Business Course other than BUS-205 and BUS-119, or any 3 credit course from Accounting, Economics or Marketing. Consult with academic advisor for additional information.

### Landscape Management and Design

(P3320)

This program provides career preparation in the skills needed to design, build and manage ornamental and natural landscapes. It is ideal for those with an artistic flair who also enjoy working outdoors and for anyone who derives satisfaction from building and completing projects. Students learn to measure, analyze, draw and install landscapes. Hands-on activities are provided whenever possible. Career opportunities abound for the landscape designer and opportunities to either work for or develop a landscape design and build company are also tremendous. Because students also learn technical aspects of landscape installation, graduates are in as much demand as skilled technicians in landscape and plant material installation. Graduates may also elect to transfer into a Landscape Architecture program, enrolling in a bachelor’s or master’s degree program.

**Due to continual program revisions mandated by the accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisors when selecting courses.**

### General Education Foundation

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG-111</td>
<td>English Composition I</td>
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<td>ENG-112</td>
<td>English Composition II</td>
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<tr>
<td>MAT-120</td>
<td>Mathematics for Liberal Arts or MAT-111(Algebra)</td>
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<tr>
<td>BIO-127</td>
<td>Biology of Environmental Concerns</td>
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<tr>
<td>CHM-117</td>
<td>Introductory Chemistry Lecture</td>
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<td>CHM-118</td>
<td>Introductory Chemistry Laboratory</td>
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General Education Foundation Credits: 20-21

### Landscape Management and Design Core

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>LHT-110</td>
<td>Plant Science</td>
<td>3</td>
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<td>LHT-111</td>
<td>Introduction to Horticulture</td>
<td>4</td>
</tr>
<tr>
<td>LHT-114</td>
<td>Landscape Plant Identification, Management and Use</td>
<td>3</td>
</tr>
<tr>
<td>LHT-108</td>
<td>Herbaceous Plant Materials</td>
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</tr>
<tr>
<td>LHT-124</td>
<td>Grounds Maintenance and Development</td>
<td></td>
</tr>
<tr>
<td>LHT-101</td>
<td>Introduction to Turf Management</td>
<td></td>
</tr>
<tr>
<td>LHT-115</td>
<td>Horticultural Computer Software Applications</td>
<td>3</td>
</tr>
<tr>
<td>LHT-215</td>
<td>Plant Pest Management</td>
<td>4</td>
</tr>
<tr>
<td>LHT-231</td>
<td>Landscape Construction and Equipment</td>
<td>3</td>
</tr>
<tr>
<td>LHT-235</td>
<td>Irrigation Systems</td>
<td>4</td>
</tr>
<tr>
<td>BUS-205</td>
<td>Landscape Specifications and Estimating</td>
<td>3</td>
</tr>
<tr>
<td>LHT-116</td>
<td>Horticultural Soils</td>
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<tr>
<td>Business Electives ¹</td>
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<tr>
<td>LHT-233</td>
<td>Cooperative Agricultural Experience</td>
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</table>

Landscape Management and Design Core Credits: 46

Total Credits: 66-67

Due to continual program revisions mandated by the accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisors when selecting courses.

### Turf and Turfgrass Management

(P3324)

This program provides career preparation in the skills needed to manage large turf areas including golf courses, sports turf and both active and passive recreational turf areas. It is ideal for those who enjoy sports or who have participated in sports and want to find a rewarding career that provides continued contact with sports-related activities. Technical skills including understanding turfgrass physiology and morphology, soils management, installation techniques, and grounds management are all included in this course of study. Additionally, management and problem-solving skills are also an integral component. Graduates of the Turf and Turfgrass
Management program are prepared for entry into a career in turf management or may choose to transfer to a four-year program in turf science.

**General Education Foundation**

<table>
<thead>
<tr>
<th>Component</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Communication</td>
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<td>ENG-111 English Composition I</td>
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<td>ENG-112 English Composition II</td>
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<td>or MAT-111 College Algebra</td>
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<td>General Education Electives</td>
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Select one of the following:

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BIO-121</td>
<td>General Biology I</td>
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<tr>
<td>&amp; BIO-122</td>
<td>General Biology II</td>
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<tr>
<td>or</td>
<td>CHM-125 General Chemistry I - Lecture</td>
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<tr>
<td>&amp; CHM-126</td>
<td>General Chemistry I - Laboratory</td>
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<tr>
<td>CHM-127</td>
<td>General Chemistry II - Lecture</td>
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<td>&amp; CHM-128</td>
<td>General Chemistry II - Laboratory</td>
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</table>

**General Education Foundation Credits**

20-21

**Turf and Turfgrass Management Core**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>LHT-101</td>
<td>Introduction to Turf Management</td>
<td>3</td>
</tr>
<tr>
<td>LHT-108</td>
<td>Herbaceous Plant Materials</td>
<td>3</td>
</tr>
<tr>
<td>LHT-110</td>
<td>Plant Science</td>
<td>3</td>
</tr>
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</tr>
<tr>
<td>LHT-115</td>
<td>Horticultural Computer Software Applications</td>
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</tr>
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<td>LHT-124</td>
<td>Grounds Maintenance and Development</td>
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</tr>
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<td>Plant Pest Management</td>
<td>4</td>
</tr>
<tr>
<td>LHT-231</td>
<td>Landscape Construction and Equipment</td>
<td>3</td>
</tr>
<tr>
<td>LHT-235</td>
<td>Irrigation Systems</td>
<td>4</td>
</tr>
<tr>
<td>LHT-233</td>
<td>Cooperative Agricultural Experience</td>
<td>3</td>
</tr>
<tr>
<td>LHT-234</td>
<td>Landscape and Turf Installation</td>
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<tr>
<td>LHT-116</td>
<td>Horticultural Soils</td>
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<td>Free Elective</td>
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**Turf and Turfgrass Management Core Credits**

46

**Total Credits**

66-67

Due to continual program revisions mandated by the accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisors when selecting courses.

**Certificates of Achievement**

- Landscape Design - A Certificate of Achievement within Landscape and Horticultural Technology (https://currentcatalog.ccm.edu/credit/areasofstudy/landscape/#landscapedesign)
- Grounds Maintenance - A Certificate of Achievement within Landscape and Horticultural Technology (https://currentcatalog.ccm.edu/credit/areasofstudy/landscape/#grounds)
- Landscape Contractor - A Certificate of Achievement within Landscape and Horticultural Technology (https://currentcatalog.ccm.edu/credit/areasofstudy/landscape/#landscapecontractor)
- Garden Center - A Certificate of Achievement within Landscape and Horticultural Technology (https://currentcatalog.ccm.edu/credit/areasofstudy/landscape/#gardencenter)

**Landscaping and Horticultural Design Certificates of Achievement**

The Landscape and Horticultural Technology Certificates of Achievement are designed for current or future professionals who want to improve their technical knowledge and skills in any of the four certificate areas. Each curriculum is balanced with theory and hands-on experiences. Students complete projects using the greenhouses, the plant preparation laboratory, the landscape design studio, the computer laboratory and the horticultural shop. The four certificate areas are: Landscape Design, Grounds Maintenance, Landscape Contractor and Garden Center. The Certificates of Achievement are designed primarily for part-time students who are currently working or plan to work in one of these areas. It is possible to complete any certificate within three years utilizing evening classes or within a shorter period of time with day classes or a combination of face-to-face and online or hybrid classes. Students with diverse career goals may earn more than one certificate.

**Landscape Design**

A Certificate of Achievement within Landscape and Horticultural Technology (P0320)

<table>
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<td>LHT-110</td>
<td>Plant Science</td>
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<td>LHT-114</td>
<td>Landscape Plant Identification, Management and Use</td>
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</tr>
<tr>
<td>LHT-211</td>
<td>Landscape Design and Planning I</td>
<td>3</td>
</tr>
<tr>
<td>LHT-212</td>
<td>Landscape Design and Planning II</td>
<td>3</td>
</tr>
<tr>
<td>BUS-205</td>
<td>Landscape Specifications and Estimating</td>
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</table>

**Total Credits**

18

**Grounds Maintenance**

A Certificate of Achievement within Landscape and Horticultural Technology (P0321)

<table>
<thead>
<tr>
<th>Course Code</th>
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<td>3</td>
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<tr>
<td>LHT-215</td>
<td>Plant Pest Management</td>
<td>4</td>
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<tr>
<td>LHT-124</td>
<td>Grounds Maintenance and Development</td>
<td>3</td>
</tr>
<tr>
<td>LHT-111</td>
<td>Introduction to Horticulture</td>
<td>4</td>
</tr>
<tr>
<td>LHT-116</td>
<td>Horticultural Soils</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Credits**

18
Landscape Contractor
A Certificate of Achievement within Landscape and Horticultural Technology
(P0322)

LHT-110 Plant Science 3
LHT-114 Landscape Plant Identification, Management and Use 3
LHT-211 Landscape Design and Planning I 3
LHT-116 Horticultural Soils 4
BUS-205 Landscape Specifications and Estimating 3
LHT-231 Landscape Construction and Equipment 3

Total Credits 19

Garden Center
A Certificate of Achievement within Landscape and Horticultural Technology
(P0323)

LHT-110 Plant Science 3
LHT-215 Plant Pest Management 4
LHT-114 Landscape Plant Identification, Management and Use 3
LHT-111 Introduction to Horticulture 4
Business Elective 1 3
LHT-108 Herbaceous Plant Materials 3

Total Credits 20

1 Students should consult their academic advisors when selecting these courses.

Faculty
Brian Oleksak
Chairperson, Assistant Professor
Landscape and Horticultural Technology Department
M.S., The Ohio State University
B.S., The Pennsylvania State University
LHT 104 973-328-5363 boleksak@ccm.edu

Craig Tolley
Assistant Professor, Landscape and Horticultural Technology
M.S., Rutgers University
B.S., Cook College, Rutgers University
LHT 103 973-328-2480 ctolley@ccm.edu

Courses
LHT-101. Introduction to Turf Management. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Intended to provide students with the skills needed to professionally manage turf facilities including golf courses, recreational and athletic fields. Topics include turf establishment and reseeding, turf management, turf maintenance, irrigation, control of turf pests and maintenance of turf areas. This course may be eligible for New Jersey Pesticide Recertification Credits in both core and selected categories. This course is offered as a traditional face-to-face course or as a hybrid online course. The face-to-face course also has an online supplement.

Additional Fees: Course fee applies.

LHT-108. Herbaceous Plant Materials. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Teaches field identification techniques for herbaceous plants including annuals, biennials and perennials. The installation, selection and uses of herbaceous plants in a landscape, maintenance of herbaceous plants, and the selection of tools and equipment in the maintenance of herbaceous landscape plants are also included. This course is offered as a face-to-face course with an online supplement and also as a hybrid course.

Additional Fees: Course fee applies.

LHT-110. Plant Science. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Plant Science includes studying the effects of the environment on plant growth and development, plant morphology and physiology, and plant classification. Students apply theory by propagating, maintaining and studying plants using the Landscape and Horticultural Technology program greenhouse facility. This course is offered as a traditional face-to-face course with an online supplement, as an online course or as a hybrid online course.

Additional Fees: Course fee applies.

LHT-111. Introduction to Horticulture. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Teaches field identification techniques for herbaceous plants including annuals, biennials and perennials. The installation, selection and uses of herbaceous plants in a landscape, maintenance of herbaceous plants, and the selection of tools and equipment in the maintenance of herbaceous landscape plants are also included. This course is offered as a traditional face-to-face course or as a hybrid online course. The face-to-face course also has an online supplement.

Additional Fees: Course fee applies.

LHT-114. Landscape Plant Identification, Management and Use. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course focuses on field identification techniques applied to the study of woody plant material including trees, shrubs, groundcovers and vines. Both conifer and deciduous plants are covered. The landscape uses of plants and the factors which should be used to guide plant selection are also discussed. Over 100 species of woody plant material are studied including trees, shrubs, vines and groundcovers. The County College of Morris campus, local garden centers and arboreta of the Morris County Park Commission are all used for field study. This course is offered as a traditional face-to-face course, as an online course or as a hybrid online course. The face-to-face course also has an online supplement.

Additional Fees: Course fee applies.
LHT-115. Horticultural Computer Software Applications. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Improves technical literacy by familiarizing students with the most effective ways to use the computer as a tool for online research, landscape design, landscape imaging and digital presentation development. Computer-assisted drafting is a major focus, and students also are introduced to GPS and GIS technology applications in agriculture. Students are provided with the opportunity to achieve competence in the selection and use of horticultural computer software. This course includes an online supplement and also offers students the opportunity to purchase landscape design software at a significant discount.
Additional Fees: Course fee applies.

LHT-116. Horticultural Soils. 4 Credits.
LECT 3 hrs, LAB 3 hrs
The origin, composition and management of soils, including study of the physical and chemical properties with emphasis on ion exchange processes, soil classification, soil amendments and biological processes that occur in the soil. The lab provides students with the opportunity to learn how to analyze and evaluate soil productivity including nutrient and pH levels as well as texture and structure. The emphasis throughout the course is on the development of problem-solving abilities which can be applied to field work. Students are required to complete a semester project which requires that they analyze the suitability of soils in an assigned area. This course is offered as a face-to-face course which includes an online supplement or as a hybrid online course.
Additional Fees: Course fee applies.

LHT-124. Grounds Maintenance and Development. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course provides students with the skills needed to professionally manage exterior environments. Topics include turf and landscape plant management, irrigation, control of landscape pests, winter property management and maintenance of landscape construction features as well as the maintenance of grounds equipment. This course is offered as a face-to-face course with an online supplement and as a hybrid course.
Additional Fees: Course fee applies.

LHT-211. Landscape Design and Planning I. 3 Credits.
LECT 1 hr, LAB 6 hrs
Class instruction emphasizes the theory, principles and practices of design and planning, effective use of plant materials, artistic consideration of form and function, and basic drawing and drafting techniques. Students learn to apply the design process as a problem-solving technique to produce finished designs. The process of design is a major focus and students are also taught presentation techniques. Sustainable practices are infused throughout the course. This course is offered as a face-to-face course with an online supplement or as a hybrid online course. Student project work is posted online using a free online portfolio system.
Prerequisites: LHT-114 or permission of department chair
Additional Fees: Course fee applies.

LHT-212. Landscape Design and Planning II. 3 Credits.
LECT 1 hr, LAB 6 hrs
A continuation of Landscape Design and Planning I. Class instruction focuses on problem-solving for difficult sites, including designing for slopes, sustainability, landscape lighting design, cultural influences on design and specialty garden design. Cost estimation, presentation skills and GPS applications are also covered. This course is offered as a face-to-face course with an online supplement or as a hybrid online course.
Prerequisites: LHT-211 or permission of department chair
Additional Fees: Course fee applies.

LHT-215. Plant Pest Management. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Teaches insects, diseases and weeds that are recognized as pests of ornamental plant materials and turf areas. The nature, structure and function of insect body parts, and the growth, habits, injurious effects and life cycles of pest organisms are studied in detail. Pesticides, regulations governing pesticide use and methods of selection and application are discussed with an emphasis on safety. Integrated Pest Management (IPM) techniques are stressed and students apply an understanding of IPM techniques to both greenhouse and landscape management. This course may be eligible for New Jersey Pesticide Recertification credits in both core and selected categories. This course is offered as a face-to-face course with an online supplement and as either a hybrid or online course.
Prerequisites: LHT-110 or LHT-111 or permission of department chair
Additional Fees: Course fee applies.

LHT-231. Landscape Construction and Equipment. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Course emphasizes state-of-the-art landscape construction and installation techniques, surveying techniques and the safe operation and maintenance of landscaping equipment. Utilizing the well-equipped Landscape and Horticultural Technology facility, this course provides the student with extensive hands-on instruction in hardscape installation and also focuses on teaching students the value of professional certification programs. This course is offered as a face-to-face course with an online supplement and as a hybrid online course.
Additional Fees: Course fee applies.

LHT-233. Cooperative Agricultural Experience. 3 Credits.
COOP 3 hrs
Recognizing that hands-on, real-work experience is invaluable to LHT students, this course provides students enrolled in the Landscape and Horticultural Technology program with on-the-job training and work experience prior to graduation. In order to successfully complete this course, students must be employed within the landscape or horticultural profession and satisfactorily complete a minimum of 300 hours on the job. Students must have a minimum 2.0 GPA and completion of 25 credits in Agribusiness, Landscape Management and Design or Turf and Turfgrass Management programs to be eligible to enroll.
Prerequisites: Permission of department chair.
LHT-234. Landscape and Turf Installation. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is intended to provide students with the skills and knowledge needed to succeed as landscape and turf installers and managers. Skills developed include surveying, understanding grading and drainage, and installation techniques for both landscape plants and turf. This course may be eligible for New Jersey Pesticide Recertification credits in both core and selected categories. This course is offered as a face-to-face course with online enhancements and as a hybrid online course.
Prerequisites: LHT-101 or LHT-110 or LHT-111 or LHT-124 or permission of department chair
Additional Fees: Course fee applies.

LHT-235. Irrigation Systems. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is intended to provide the student with a general understanding of the components, use and function of irrigation systems. By completion of this course, the students are able to operate, maintain and repair irrigation systems. This course is offered as a face-to-face course with an online supplement or as a hybrid course.
Additional Fees: Course fee applies.

LHT-291. Special Topics in Agriculture I. 3 Credits.
LECT 3 hrs
This course is an independent study course which involves students in an individualized course of study designed to fit each student's program of study and career goals. There is an online supplement for this course.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

LHT-292. Special Topics in Agriculture II. 3 Credits.
LECT 3 hrs
This course is the second independent study course of a two semester sequence which involves students in an individualized course of study designed to fit each student's program of study and career goals. There is an online supplement for this course.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

Languages

County College of Morris offers twelve languages that count towards a student’s graduation requirements: American Sign Language, Arabic, Chinese, French, German, Hebrew, Italian, Japanese, Latin, Portuguese, Russian and Spanish. We do not currently offer a major in any languages, but the College does offer a major in Spanish Education under the Psychology and Education Department (http://www.ccm.edu/academics/divdep/liberalarts/languages/languages.aspx).

Additional information about the Foreign Language Requirement:

- A student who has taken two or more years of a language in high school within the last three years may not enroll in the elementary level “111” of a language and must see the department chairperson for a placement evaluation. ASL students with one year of high school ASL should register for ASL 112 or higher.
- Native speakers of one of the languages offered may only enroll in advanced courses of that language, or they must choose a different language to study. Permission to take advanced classes must be obtained from the department chairperson.
- Students may also fulfill their language requirement through a departmental examination in the languages we offer if they demonstrate appropriate and specific criteria. Please see department chairperson for an evaluation of eligibility.
- Students who have passed the Chinese, French, German, Italian or Spanish AP test with scores of 4 or 5 receive 6 credits in the language. A score of 3 grants 3 credits. A score lower than 3 does not grant any language credits.
- Students who have taken CLEP tests through a recognized testing center can apply to obtain credits towards a degree at CCM. No other tests will be accepted to grant language credits at CCM.

For more details, and to contact the chairperson, visit the Languages and ESL Department (http://www.ccm.edu/academics/divdep/liberalarts/languages/languages.aspx) website.

Faculty

James Hart
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B.A., American University
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Dr. Marcia Picallo
Assistant Chairperson, Languages and ESL
Associate Professor, Spanish
Ph.D., MPH, City University of New York Graduate School
M.A., B.A., Rutgers University
EH 116 973-328-5418 mpicallo@ccm.edu

Courses

ARA-111. Elementary Arabic I. 3 Credits.
LECT 3 hrs
This course is designed for students with little or no prior knowledge of Arabic. Coursework combines the use of a textbook and other relevant and authentic materials for writing, reading, speaking and listening comprehension. By the end of the course, students are expected to master the writing and sound systems of Arabic, understand and use basic grammatical structures, have use of basic vocabulary words, comprehend short reading passages and understand simple utterances. Not intended for native speakers.

ARA-112. Elementary Arabic II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Arabic expand their study of basic Arabic script, pronunciation, vocabulary and grammar of an elementary nature. Grammar study includes root consonants and word shapes, word order and agreement, plural and agreement of adjectives, dual nouns, pronouns, verbs and adjectives, and the past tense. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Arabic language proficiency. The cultural context of the language is also covered.
Prerequisites: ARA-111 or permission of department chair.
ARA-211. Intermediate Arabic I. 3 Credits.
LECT 3 hrs
This course briefly reviews the grammar covered in Elementary Arabic II. It expands the Arabic vocabulary, grammar, reading and writing skills of those students wishing to attain intermediate knowledge of the Arabic language.
Prerequisites: ARA-112 or permission of department chair.

ASL-111. American Sign Language I. 3 Credits.
LECT 3 hrs
This course is an introduction to the expressive and receptive skills required for communication in American Sign Language (ASL). Through active class use of basic vocabulary, grammar and syntax, students begin the exploration of Deaf culture and begin to learn the language of that culture. This course is not intended for students with more than one year of previous study of this language at the high school level.

ASL-112. American Sign Language II. 3 Credits.
LECT 3 hrs
This course is a continuation to the basic expressive and receptive skills required for communication in American Sign Language (ASL). Through active class use of basic vocabulary, grammar, and syntax, students begin the exploration of Deaf culture and begin to learn the language of that culture. Students will be better informed about the appropriate course of action when encountering or assisting deaf individuals in our community. Students are expected to search the Internet to watch, evaluate and gather information from different modalities of ASL conversation. This course is not intended for students with more than two years of previous study of this language.
Prerequisites: ASL-111 or permission of department chair.

ASL-211. Intermediate American Sign Language I. 3 Credits.
LECT 3 hrs
Intermediate American Sign Language I expands the students' vocabulary and enhances their expressive and receptive skills through class discussions, pair/group work, simulations and presentations. The course is conducted mostly in American Sign Language. It also features extensive discussions of Deaf culture and requires students to write a paper on one of the topics discussed including accommodations, and inclusion/exclusion in mainstream society. This course is intended to build upon students' knowledge of the rules of ASL, including discourse markers, personal narratives, dynamic equivalencies, non-manual grammar, syntax, classifiers, temporalization, pronominalization, turn-taking, use of space, sentence structure and types, and gesture.
This course will also include lessons on Deaf culture, history, and literature. The course is conducted mostly in American Sign Language. It also features extensive discussions of Deaf culture and requires students to research on-line and write a paper on one of the topics discussed including accommodations, and inclusion/exclusion in mainstream society. Students are also expected to conduct research for their final presentation. This course is not recommended for students with four or more years of previous study of this language.
Prerequisites: ASL-211.

CHI-111. Elementary Chinese I. 3 Credits.
LECT 3 hrs
This course is intended for students with no prior knowledge of, or with limited background in the language. Emphasis is on the fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar is incorporated. Students learn Mandarin Chinese using "pinyin" romanization and are introduced to simplified and traditional characters. Not for native speakers and not intended for students with two or more years of high school Chinese.

CHI-112. Elementary Chinese II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Chinese expand their abilities in speaking, reading and writing Chinese. Students develop a better usage of the Chinese language, characters and patterns.
Prerequisites: CHI-111 or permission of department chair.

CHI-211. Intermediate Chinese I. 3 Credits.
LECT 3 hrs
This course is a continuation of Elementary Chinese II. It expands the Chinese vocabulary, grammar, reading and writing skills of those students wishing to attain intermediate knowledge of the Chinese language. To that end, students are introduced to simple versions of Chinese literature.
Prerequisites: CHI-112 or permission of department chair.

CHI-212. Intermediate Chinese II. 3 Credits.
LECT 3 hrs
This course is a continuation of Intermediate Chinese I. It expands the Chinese vocabulary, grammar, reading and writing skills of those students wishing to attain intermediate knowledge of the Chinese language. Students are introduced to basic Chinese literature and philosophy along with advanced grammatical patterns
Prerequisites: CHI-211 or permission of department chair.
CHI-291. Special Topics in Chinese I. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in Chinese language or culture. Topics may differ each time the course is offered. Students should contact the department chair for further information.
Prerequisites: An advanced course in Chinese or permission of department chair.

CHI-292. Special Topics in Chinese II. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in Chinese language or culture. Topics may differ each time the course is offered. Students should contact the department chair for further information.
Prerequisites: An advanced course in Chinese or permission of department chair.

FRE-111. Elementary French I. 3 Credits.
LECT 3 hrs
Not for students with two or more years of high school French. See department chair. This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar.

FRE-112. Elementary French II. 3 Credits.
LECT 3 hrs
Students with one prior semester of French expand their study of basic French pronunciation, vocabulary and grammar of an elementary nature. Grammar study includes possessive and demonstrative adjectives, partitive articles, verbs, common irregular verbs in the present tense, the imperative, and the past tense. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance French language proficiency. The cultural context of the language is also covered. Higher emphasis is given to conversation. Some compositions are required.
Prerequisites: FRE-111 or permission of department chair.

FRE-211. Intermediate French I. 3 Credits.
LECT 3 hrs
This course is intended for students whose study of the first year of French is recent and who wish to acquire new skills in the language. It includes the introduction of new grammatical concepts such as affirmative and negative pronouns, the imperfect tense, direct and indirect object pronouns, agreement with past participles, adverbs, the pronouns y and en and additional verbs with irregular forms. Higher emphasis is given to conversation. Some compositions are required.
Prerequisites: FRE-112 or permission of department chair.

FRE-212. Intermediate French II. 3 Credits.
LECT 3 hrs
This course expands the French vocabulary, grammar, reading and writing skills of those students wishing to attain an intermediate to advanced level of French. The grammatical concepts presented in the course include, but are not limited to, the future and conditional tenses, the subjunctive mood, indefinite pronouns and adjectives, relative pronouns, and the comparative and superlative of adjectives. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance French language proficiency. The cultural context of the language is also covered. A few readings from modern French literature and compositions on cultural subjects are required.
Prerequisites: FRE-211 or permission of department chair.

FRE-221. French Conversation and Literature I. 3 Credits.
LECT 3 hrs
Intensive practice in speaking French. Oral and written reports and discussions based on readings from literature in French.
Prerequisites: FRE-212 or permission of department chair.

FRE-222. French Conversation and Literature II. 3 Credits.
LECT 3 hrs
This course focuses on highly advanced vocabulary and sentence structure for both everyday and academic French. Oral and written reports and discussions based on advanced readings from literature in French.
Prerequisites: FRE-221 or permission of department chair.

FRE-291. Special Topics in French. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in French. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An advanced course in French or permission of department chair.

FRE-292. Special Topics in French. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in French. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An advanced course in French or permission of department chair.

GER-111. Elementary German I. 3 Credits.
LECT 3 hrs
Not intended for students with two or more years of high school German. See department chair. This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar.
GER-112. Elementary German II. 3 Credits.
LECT 3 hrs
Students with one prior semester of German expand their study of basic German pronunciation, vocabulary and grammar of an elementary nature. Grammar study includes imperative, past, present and dependent infinitives, attributive adjectives and adjectives used as nouns. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance German language proficiency. The cultural context of the language is also covered. 
Prerequisites: GER-111 or permission of department chair.

GER-211. Intermediate German I. 3 Credits.
LECT 3 hrs
This course is intended for students whose study of the first year of this language is recent and who wish to acquire new skills in the language. It includes a continuation of grammar. Higher emphasis is given to conversation. Some compositions are required.
Prerequisites: GER-112 or permission of department chair.

GER-212. Intermediate German II. 3 Credits.
LECT 3 hrs
This course expands the German vocabulary, grammar, reading and writing skills of those students wishing to attain intermediate knowledge of the German language. Grammar study includes past perfect and pluperfect tenses, declension of adjectives, subjunctive mood and conjunctions. Course work involves conversation and readings from modern German literature and the writing of compositions. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance German language proficiency. The cultural context of the language is also covered.
Prerequisites: GER-211 or permission of department chair.

GER-221. German Conversation and Literature I. 3 Credits.
LECT 3 hrs
Intensive practice in speaking everyday German. Oral and written reports and discussions based on readings from German literature are incorporated.
Prerequisites: GER-212 or permission of department chair.

GER-222. German Conversation and Literature II. 3 Credits.
LECT 3 hrs
This course focuses on highly advanced vocabulary and sentence structure for both contemporary and academic German. Oral and written reports and discussions based on advanced readings from German literature are incorporated.
Prerequisites: GER-221 or permission of department chair.

GER-291. Special Topics in German. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in German. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An advanced course in German or permission of department chair.

GER-292. Special Topics in German. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in German. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An advanced course in German or permission of department chair.

HBR-111. Elementary Modern Hebrew I. 3 Credits.
LECT 3 hrs
Not intended for native speakers. This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar is incorporated. The cultural context of the language is also explored.

HBR-112. Elementary Modern Hebrew II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Hebrew expand their study of basic Hebrew script, pronunciation, vocabulary and grammar of an elementary nature. Grammar study includes future tense, commands, the infinitive, declension of direct object pronouns, regular and irregular verbs. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Hebrew language proficiency. The cultural context of the language is also explored.
Prerequisites: HBR-111 or permission of department chair.

JPN-111. Elementary Japanese I. 3 Credits.
LECT 3 hrs
Not intended for students with two or more years of high school Japanese. This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar is incorporated. Kana writing system and some Kanji writing characters are introduced at this stage.

JPN-112. Elementary Japanese II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Japanese expand their study of basic Japanese language, script, pronunciation, vocabulary and grammar of an elementary nature. Grammar includes study of basic syntactical structures. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Japanese language proficiency. The cultural context of the language is also covered. At least 56 Kanji characters are introduced at this stage.
Prerequisites: JPN-111 or permission of department chair.

JPN-211. Intermediate Japanese I. 3 Credits.
LECT 3 hrs
The course is intended for students whose study of the first year of this language is recent and who wish to hone their skills. Students continue to study Kanji characters. Emphasis is given to vocabulary, grammar, listening, speaking, reading and writing in an effort to enhance Japanese language proficiency. Some readings and compositions on cultural subjects are included.
Prerequisites: JPN-112 or permission of department chair.

JPN-212. Intermediate Japanese II. 3 Credits.
LECT 3 hrs
This course expands the Japanese vocabulary, grammar, reading and writing skills of those students wishing to attain intermediate knowledge of the Japanese language. Students continue to learn more Kanji characters. Vocabulary and grammar support listening, reading and writing in an effort to enhance Japanese language proficiency. The cultural context of the language is also covered. Some readings and compositions on cultural subjects are included.
Prerequisites: JPN-211 or permission of department chair.
LAT-111. Elementary Latin I. 3 Credits.
LECT 3 hrs
Not intended for students with two or more years of high school Latin. This course is intended for students with no prior knowledge of, or with limited background in, the language. It includes basic grammar and vocabulary, selected readings with stress on syntax, and the relationship of Latin grammar to English grammar.

LAT-112. Elementary Latin II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Latin expand their study of basic Latin vocabulary and grammar of an elementary nature. Grammar study includes third and fourth conjugation and third and fourth declension, pluperfect and future tenses, and the ablative case. Vocabulary and grammar support readings with stress on syntax, and the relationship of Latin grammar to English grammar.
Prerequisites: LAT-111 or permission of department chair.

PTG-111. Elementary Portuguese I. 3 Credits.
LECT 3 hrs
Not for native speakers. This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary, basic cultural knowledge and the essentials of grammar including present tense verbs. Both Brazilian and European Portuguese modalities are introduced.

PTG-112. Elementary Portuguese II. 3 Credits.
LECT 3 hrs
This course is intended for students with one semester of elementary college-level Portuguese or with limited background in the language. Emphasis is given to fundamentals of conversation, reading and writing. The course includes practice in pronunciation, basic vocabulary, basic cultural knowledge and the essentials of grammar. Past tenses are studied to express both completed and ongoing past events.
Prerequisites: PTG-111 or permission of department chair.

PTG-211. Intermediate Portuguese I. 3 Credits.
LECT 3 hrs
This course is a continuation of Portuguese grammar at the intermediate level. Students continue to hone their conversational, reading and writing skills in the language. Students are introduced to the imperative and subjunctive moods of verbs. The course includes a brief review of grammar and students learn to use reflexive verbs, express commands, and express opinions in the language. Both Brazilian and European Portuguese modalities are explored. The course also includes a variety of cultural, social and political realities of the entire and diverse Portuguese-speaking world, in particular those of Brazil and Portugal. The students will be exposed to everyday "real-life" situations, practical vocabulary and more specific grammar.
Prerequisites: PTG-112 or permission of department chair.

RUS-111. Elementary Russian I. 3 Credits.
LECT 3 hrs
Not for native speakers. See department chair. This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar is incorporated.

RUS-112. Elementary Russian II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Russian expand their study of basic Russian pronunciation, vocabulary and grammar of an elementary nature. Grammar study includes imperative words, dative, accusative, and prepositional cases, plural of nouns and demonstrative pronouns. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Russian language proficiency. The cultural context of the language is also covered.
Prerequisites: RUS-111 or permission of department chair.

RUS-211. Intermediate Russian I. 3 Credits.
LECT 3 hrs
The course is intended for students whose study of the first year of this language is recent and who wish to hone their skills. It includes a continuation of grammar, conversation and some compositions on cultural subjects. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Russian language proficiency. The cultural context of the language is also covered.
Prerequisites: RUS-211 or permission of department chair.

SPN-111. Elementary Spanish I. 3 Credits.
LECT 3 hrs
This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar are incorporated. Not for students with two or more years of high school Spanish. See department chair. Not for native speakers, that is, not for speakers that grew up and/or studied in a Spanish-speaking country.

SPN-112. Elementary Spanish II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Spanish expand their study of basic Spanish pronunciation, vocabulary and grammar of an elementary nature. Grammar study includes past tenses, the present progressive tense, the verb gustar, direct and indirect object pronouns, adjectives, reflexive verbs, and prepositions. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Spanish language proficiency. The cultural context of the language is also covered.
Prerequisites: SPN-111 or permission of department chair.
SPN-211. Intermediate Spanish I. 3 Credits.
LECT 3 hrs
This course expands the Spanish vocabulary, grammar, reading and writing skills of those students wishing to attain an intermediate knowledge of the Spanish language. Grammar study includes general tenses in the indicative and subjunctive moods. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Spanish language proficiency. Cultural aspects are also discussed.
Prerequisites: SPN-112 or permission of department chair.

SPN-212. Intermediate Spanish II. 3 Credits.
LECT 3 hrs
This course expands the Spanish vocabulary, grammar, reading and writing skills of those students wishing to attain an intermediate knowledge of the Spanish language. Grammar study includes general tenses in the indicative and subjunctive moods. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Spanish language proficiency. Cultural aspects are also discussed.
Prerequisites: SPN-211 or permission of department chair.

SPN-218. Advanced Spanish Conversation. 3 Credits.
LECT 3 hrs
Advanced Spanish Conversation instructs students conversant in Spanish in the correct and appropriate vocabulary, grammar and syntax for accurate spoken communication. Students deepen their understanding of idiomatic usage of the several Spanish-speaking countries through discussion of the varied themes explored by contemporary writers in short stories and other non-fiction readings, as well as consider shades of meaning inherent in their own syntactical and lexical choices. The varied readings and the interchange of ideas among the expected population of both American and Hispanic students support the cultural context of the language - the history, literature and art of the Hispanic people, and provide insight into the various ethnic and racial populations within each Spanish-speaking country and in the United States.
Prerequisites: SPN-212 or permission of department chair.

SPN-219. Advanced Spanish Composition. 3 Credits.
LECT 3 hrs
Advanced Spanish Composition focuses on correct and appropriate written forms of communication in Spanish. The expository and argumentative essays are studied along with other special types of formal and informal writing. Students review spelling, syntax and grammar, and are expected to conduct extensive conversation in Spanish to elicit topics for writing projects. This course helps English speakers to develop new structures in Spanish syntax and understand to a greater extent aspects of Hispanic culture embodied in written forms. It also increases the knowledge of written structures of native speakers and expands their understanding of formal written language. Classes for this course are conducted entirely in Spanish.
Prerequisites: SPN-212 or permission of department chair.

SPN-220. Spanish Literature. 3 Credits.
LECT 3 hrs
This course provides a historical and critical overview of Spanish Peninsular literature beginning with the Middle Ages and ending in the present. Among the literary periods to be covered are the Renaissance, the Baroque period, the Enlightenment, Romanticism, Realism, the Generations of 1898 and 1927, and post-Spanish Civil War, Don Juan Manuel, Garcilaso de la Vega, Santa Teresa de Jesus, Cervantes, Lope de Vega, Becquer, Perez Galdos, Unamuno, Machado, Lorca, Cela, Ana Maria Matute, and Carmen Martin Gaite. This course is conducted entirely in Spanish.
Prerequisites: SPN-212 or permission of department chair.

SPN-223. Survey of Latin American Literature: Pre-Columbian to the Present. 3 Credits.
LECT 3 hrs
This course provides a historical and critical overview of Latin American literature beginning with pre-Columbian myths and poetry, and continuing through the literature of the conquest and the colonies, independence, Romanticism, Modernism, Postmodernism, the mid-twentieth century Boom and the Post-Boom on up to the present. Major writers may include Hernan Cortes, Sor Juana Ines de la Cruz, Dario, Marti, Neruda, Paz, Garcia Marquez, Poniatowska, Valenzuela and Allende. This course is conducted entirely in Spanish.
Prerequisites: SPN-212 or permission of the department chair.

SPN-291. Special Topics in Spanish. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Spanish. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An advanced course in Spanish or permission of department chair.

SPN-292. Special Topics in Spanish. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Spanish. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An advanced course in Spanish or permission of department chair.

Mechanical Engineering Technology

Associate in Applied Science Degree

The Mechanical Engineering Technology program is a two-year career-oriented curriculum preparing students for positions as engineering technicians in the design, production and testing of machines, tools and manufactured products. Job activities center on technical problem solving and the practical application of engineering knowledge.

The specific educational objectives of the Mechanical Engineering Technology program are to:

1. produce graduates who are employed and operate effectively in positions that lie between those of the skilled craftsperson and those of the graduate mechanical engineer, including such positions as mechanical designer, engineering assistant, quality
assurance technician, manufacturing engineering assistant and technical sales person
2. produce graduates who can successfully transfer and complete a baccalaureate degree program in mechanical engineering technology

After obtaining an Associate in Applied Science degree, it is possible to continue at a four-year college and to complete a Bachelor of Science degree in Engineering Technology. No prior mechanical design experience is necessary to enter the Mechanical Engineering Technology program. Core technology courses are sequenced along with applied mathematics and science to develop a broad background in the field of mechanical technology. Each engineering technology course contains a laboratory, which utilizes modern test instruments and applies classroom theory to practical applications. Cooperative Education, a work-study program with local firms, is available. The Mechanical Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET. You can find out more at the ABET website (http://www.abet.org).

Articulation Agreements
An existing agreement with New Jersey Institute of Technology (NJIT) provides students in this program with a local transfer opportunity. Students should check with the Transfer Office about other articulation agreements with this program.

For more information, visit the Mechanical Engineering Technology (http://www.ccm.edu/academics/degrees/mechengineering.aspx) website.

Degrees
AAS Mechanical Engineering Technology
(P3700)

General Education Foundation
Communication
ENG-111 English Composition I
ENG-112 English Composition II
Math-Science-Technology
Math Elective College Algebra (MAT-110) or higher
Social Science or Humanities
The course must meet both the General Education and Diversity requirements.

General Education
Math Elective PreCalculus/Calculus sequence or higher
General Education Foundation Credits 19-21
Mechanical Engineering Core
ENR-103 Basic Engineering Graphics I
ENR-117 Computer-Aided Drafting I
ENR-118 Computer-Aided Drafting II
ENR-119 Technical Computer Applications
ENR-120 Technical Computer Programming
ENR-124 Instrumentation and Measurements
ENR-240 Engineering Technology Project
MEC-104 Statics
MEC-109 Manufacturing Process for Engineering Technology
MEC-110 Materials for Engineering Technology
MEC-141 Strength of Materials for Engineering Technology
MEC-204 Dynamics for Technology
ELT-201 Electricity and Electronics
MEC-209 Introduction to Advanced Manufacturing and CNC Programming
PHY-111 Technical Physics I
PHY-112 Technical Physics II
Mechanical Engineering Core Credits 41
Total Credits 60-62

Certificates
Computer-Aided Drafting Technology Certificate
(P5710)

All manufacturing industry, research and development organizations, and design divisions of major corporations use drafters in the preparation of various stages of formal drawings. Typically companies that hire engineers, architects or designers have a need for people skilled in drafting.

This certificate program is designed to prepare students for entry-level positions as junior drafters, drafter trainees or drafters using computer-aided drafting (CAD). The supportive technical course work in manufacturing, materials, science, mathematics and writing assists students in continuing to advance their careers and strengthens the background of those desiring to continue their education.

Normally, students complete 29 hours of credit course work and 3 hours of non-credit mathematics to earn the certificate. However, students with strong backgrounds in mathematics may elect to take a credit course, MAT-110 College Algebra, in place of the non-credit MAT-016 Intermediate Algebra course with the approval of their academic advisor. Depending on the courses taken, students who successfully complete this program may receive one semester or more of credit toward a Mechanical Engineering Technology degree.

Communications
ENG-111 English Composition I
Mathematics and Science
Select one of the following: N3
MAT-016 Intermediate Algebra
MAT-110 College Algebra
PHY-103 Concepts of Physics
or PHY-111 Technical Physics I
Specialized Courses
ENR-103 Basic Engineering Graphics I
Students should consult their academic advisors when selecting these courses.

Certificates of Achievement

- Advanced Mechanical Analysis - A Certificate of Achievement within Mechanical Engineering Technology (p. 159)
- Assembly and Testing - A Certificate of Achievement within Mechanical Engineering Technology (p. 159)
- Engineering Technology - A Certificate of Achievement within Mechanical Engineering Technology (p. 159)
- Mechanical CAD - A Certificate of Achievement within Mechanical Engineering Technology (p. 159)

Advanced Mechanical Analysis

A Certificate of Achievement within Mechanical Engineering Technology (P0635)

The Advanced Mechanical Analysis Certificate is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides an advanced introduction to theories and techniques used in mechanical and structural analysis. It’s possible to complete the certificate within a year and the courses fully transfer to the AAS degree in Mechanical Engineering Technology.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MAT-110</td>
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<td>MEC-104</td>
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<tr>
<td>MEC-236</td>
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Assembly and Testing

A Certificate of Achievement within Mechanical Engineering Technology (P0627)

The Assembly and Testing Certificate of Achievement is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides an introduction to applications used in the assembly and testing of electronic equipment. It’s possible to complete the certificate within a year and the courses fully transfer to the AAS degree in Electronics Engineering Technology.

<table>
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<th>Course</th>
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<tr>
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<tr>
<td>ENR-119</td>
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<td>ENR-124</td>
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<td>ELT-110</td>
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<td>ELT-210</td>
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<td>MAT-016</td>
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Engineering Technology

A Certificate of Achievement within Mechanical Engineering Technology (P0633)

The Engineering Technology Certificate of Achievement is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides a strong foundation in both electronic and mechanical theories and applications. It’s possible to complete the certificate within a year and the courses fully transfer to the Electronics Engineering Technology and Mechanical Engineering Technology degrees.

Select 14 credits from the following:

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<tr>
<td>MEC-110</td>
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<td>ENR-124</td>
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Mechanical CAD

A Certificate of Achievement within Mechanical Engineering Technology (P0625)

The Mechanical CAD Certificate of Achievement is designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. The certificate is balanced with theory and hands-on experience. This certificate provides a strong foundation in Computer Aided Drafting (CAD) and in manufacturing techniques. It’s possible to complete the certificate within a year and the courses fully transfer to the CAD Certificate or the AAS degree in Mechanical Engineering Technology.

<table>
<thead>
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<th>Course</th>
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<tr>
<td>ENR-103</td>
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ENR-118 Computer-Aided Drafting II 2
ENR-119 Technical Computer Applications 1
Technical Elective 3
MEC-109 Manufacturing Process for Engineering Technology 4

Total Credits 13

Faculty

Ian Colquhoun
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Courses

ENR-103. Basic Engineering Graphics I. 1 Credit.
LECT 3 hrs
LAB 3 hrs
This course is an introduction to computer aided design software
and hardware. Covered are geometric constructions, multiview
orthographic projection, dimensioning, sectioning, auxiliary view and
axonometric projection and principles of descriptive geometry. A
brief introduction to solid modeling is also included. This course is
intended for Engineering Science students; Engineering Technology
students take ENR-117.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

ENR-117. Computer-Aided Drafting I. 2 Credits.
LECT 1 hr, LAB 4 hrs
This course is an introduction to the concepts and operation of
engineering drafting preparation using CAD (computer-aided
drafting). The emphasis is on how CAD can reduce drawing time and
improve accuracy. Students learn to use the AutoCAD software
program to prepare drawings.
Additional Fees: Course fee applies.

ENR-118. Computer-Aided Drafting II. 2 Credits.
LECT 1 hr, LAB 4 hrs
This course is a continuation and enhancement of Computer-Aided
Drafting I. Topics include prototype drawings, blocks, attributes, x-
reference, grips, paper space and development of 3-dimensional
solid modeling.
Prerequisites: ENR-117
Additional Fees: Course fee applies.

ENR-119. Technical Computer Applications. 1 Credit.
LECT 2 hrs, LAB 2 hrs
This course is an introduction to computer programming with
application to engineering technology. Microcomputers are used to
develop application programs in a programming language.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

ENR-120. Technical Computer Programming. 2 Credits.
LECT 2 hrs, LAB 2 hrs
This course is an introduction to computer aided design software and
hardware. Covered are geometric constructions, multiview
orthographic projection, dimensioning, sectioning, auxiliary view and
axonometric projection and principles of descriptive geometry. A
brief introduction to solid modeling is also included. This course is
intended for Engineering Science students; Engineering Technology
students take ENR-117.
Prerequisites: MAT-123
Additional Fees: Course fee applies.

ENR-121. Engineering Graphics. 2 Credits.
LECT 1 hr, LAB 3 hrs
This course is an introduction to computer aided design software and
hardware. Covered are geometric constructions, multiview
orthographic projection, dimensioning, sectioning, auxiliary view and
axonometric projection and principles of descriptive geometry. A
brief introduction to solid modeling is also included. This course is
intended for Engineering Science students; Engineering Technology
students take ENR-117.
Prerequisites: MAT-123
Additional Fees: Course fee applies.

ENR-123. Introduction to Engineering. 0 Credits.
LECT 1 hr
This course provides the entering engineering student with an
overview of the engineering profession and the design process.
Topics discussed include the engineering course of study, academic
advisement and transfer processes, types of engineering disciplines,
problem-solving techniques, typical software tools, reporting
techniques, and study skills.

ENR-124. Instrumentation and Measurements. 2 Credits.
LECT 1 hr, LAB 3 hrs
This course is an introductory study in the concepts involving
physical measurements utilizing hands-on electrical and
mechanical measurement applications. Use of basic instruments and
transducers, accuracy and precision, units and standards of
measurements, accounting and presentation of errors in
measurements.
Prerequisites: MAT-007 or equivalent
Corequisites: ENR-119
Additional Fees: Course fee applies.

ENR-125. Computer Programming for Engineers. 3 Credits.
LECT 2 hrs, LAB 2 hrs
A course in structured and object-oriented programming,
emphasizing engineering applications and numerical methods in
assignments. Program assignments are coded and are implemented
on personal computers.
Prerequisites: MAT-123
Additional Fees: Course fee applies.

ENR-126. Computer Aided Design and Applications. 2 Credits.
LECT 1 hr, LAB 4 hrs
An introductory course in computer aided design using parametric
solid modeling software. Creation of solid models of parts,
generation of orthographic views, sectional views and auxiliary
views are covered. Dimensioning and tolerancing of parts is
emphasized along with development of appropriate files to make the
parts for product development using rapid prototyping (3-D printing)
and to manufacture parts using computerized numerical control
machines.
Prerequisites: ENR-117
Additional Fees: Course fee applies.
ENR-220. Hydraulics and Fluid Power. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course is an exploration into the relationship between pressure, density and temperature as they relate to hydraulic and pneumatic systems. Topics include hydraulic pumps, motors and air compressors. The course emphasizes use of engineering standards and specifications for circuit design and component selection. Electrical controls and application to systems are covered. Lab sessions further expand upon lectures by providing students with physical evidence to support theories and ideas acquired in class.
Prerequisites: MAT-110
Additional Fees: Course fee applies.

ENR-222. Mechanics of Solids. 3 Credits.
LECT 3 hrs
Principles of strength of materials are derived for uniaxial stresses and strains, direct shear, torsion bending and combined stresses and column buckling. Also covered are axial force, shear moment and torque in structural members and in statically indeterminate systems. Elementary failure theory of structures and mechanical components is discussed.
Prerequisites: ENR-223.

ENR-223. Engineering Mechanics I (Statics). 3 Credits.
LECT 3 hrs
This course is a vector approach to statics in a plane and in three dimensions, equilibrium of particles and rigid bodies. Equivalent force systems, structural analysis, centroids and moments of inertia. Virtual work and applied engineering problems are incorporated.
Prerequisites: MAT-131 and PHY-130.

ENR-224. Engineering Mechanics II (Dynamics). 3 Credits.
LECT 3 hrs
This course is a calculus-based course in dynamics. Kinematics and kinetics of particles and rigid bodies, Newton's laws, work, energy, impulse and momentum are covered. Practical engineering problems are incorporated.
Prerequisites: ENR-223.

ENR-230. Engineering Strength of Materials. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Principles of strength of materials are derived for uniaxial stresses and strains, direct shear, torsion bending, and combined stresses and column buckling. Elementary failure theory of structures and mechanical components is discussed. Laboratory covers a variety of tensile stress-strain, impact and hardness tests, as well as shear stress-strain and the techniques of report writing.
Prerequisites: ENR-223
Additional Fees: Course fee applies.

ENR-232. Materials Science. 3 Credits.
LECT 3 hrs
This course covers the properties and structure of materials: atomic bonding, molecular, crystalline, noncrystalline structures and crystalline imperfections. It also covers metallic phases, equilibrium and nonequilibrium reactions, processing and properties of ferrous and non-ferrous metals, polymers, ceramics and composites. In addition, corrosion phenomenon is discussed.
Prerequisites: CHM-125 and CHM-126 and PHY-130.

ENR-234. Independent Study in Technology. 3 Credits.
LECT 3 hrs
This course is for students in Engineering Technologies. The student selects an area of interest and proposes a plan of study to a sponsoring faculty member who supervises and evaluates the student's progress.
Prerequisites: Permission of department chair.

ENR-235. Engineering Circuit Analysis I. 3 Credits.
LECT 3 hrs
This first course in engineering circuit analysis covers DC circuit analysis including source transformations, mesh, nodal, superposition, Thevenin and Norton theorems, and the maximum power transfer theorem. Dependent as well as independent sources are included. Transient response of RC, RL and RLC circuits is introduced. Steady-state analysis of single and three phase AC systems is studied using phasor diagrams and the network theorems mentioned above. Real, reactive, apparent power and power factors are included. Use of the computer as a problem-solving tool is included in the course.
Prerequisites: MAT-132.

ENR-236. Engineering Circuit Analysis Laboratory I. 1 Credit.
LAB 3 hrs
This laboratory course includes experiments in DC, AC and transients to accompany the course work in Engineering Circuit Analysis I.
Corequisites: ENR-235
Additional Fees: Course fee applies.

ENR-237. Engineering Circuit Analysis II. 3 Credits.
LECT 3 hrs
This is a second course in engineering circuit analysis. Natural and step response of RL, RC and RLC circuits, mutual inductance, ideal transformers, series and parallel resonance are studied. Laplace transform theory is covered and includes step and impulse response in the S-domain. Bode diagrams of simple and quadratic factors are plotted and the computer is used for actual frequency and phase plots. Fourier Series are studied using both trigonometric and exponential forms.
Prerequisites: ENR-235
Corequisites: MAT-232.

ENR-238. Engineering Circuit Analysis Laboratory II. 1 Credit.
LAB 3 hrs
This laboratory course includes experiments on transformers, series and parallel resonance, filters and frequency/phase response plots, and two-port hybrid models to accompany the course work in Engineering Circuit Analysis II.
Prerequisites: ENR-236
Corequisites: ENR-237
Additional Fees: Course fee applies.

ENR-240. Engineering Technology Project. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course covers the design of products and processes considering functional requirements, manufacturing feasibility and economy, and the use of technical literature and catalogs. Includes design layout and working drawings and group and individual projects.
Prerequisites: ENR-117 and MEC-110 and MEC-141
Additional Fees: Course fee applies.
ENR-241. Instrumentation and Control. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is an introduction to the study of measuring systems and components, digital and analog signals and their characteristics. Mechanical and electromechanical transducer elements are used to measure pressure, temperature, displacement, velocity and acceleration. Static and dynamic performance of instruments, statistical analysis of experimental data are explored. A brief study of process controllers, programmable logic controllers and final control elements are also explored.
Prerequisites: ELT-201
Additional Fees: Course fee applies.

ENR-290. Special Topics in Technology. 1 Credit.
LECT 1 hr
This course is for students in Engineering Technologies. The student selects an area of interest and proposes a plan of study to a sponsoring faculty member who supervises and evaluates the student's progress when used for independent study. The course is also used to cover either current or future topics of interest in technology. Topics discussed will have relevance to either electronics technology, mechanical technology or both, and may vary each semester.
Prerequisites: Permission of department chair.

ENR-291. Special Topics in Engineering. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in engineering. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

ENR-292. Special Topics in Engineering. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in engineering. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

MEC-104. Statics. 3 Credits.
LECT 3 hrs
This course provides an analysis of force systems acting on particles and rigid bodies; equilibrium in two and three dimensions; trusses, frames and machines; and friction, centroids and moment of inertia of areas.
Prerequisites: MAT-110, ENR-119 and ENR-124.

MEC-109. Manufacturing Process for Engineering Technology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is a study of the methods of prototyping including an introduction to precision measurements, elementary theory of cutting and machining methods with emphasis on the proper operation of the manual lathe and the vertical mill. The course will also provide the student with an introduction to the Computer-Aided Manufacturing (CAM) and the related field of Computerized Numerical Control (CNC). Topics include machine setup, CNC code, both manual and computer assisted, tool offsets and tool changing.
Additional Fees: Course fee applies.
MEC-204. Dynamics for Technology. 2 Credits.
LECT 2 hrs
This course provides an understanding of the mathematics of the motion of particles and rigid bodies, and of the relation of forces and motion of particles. Upon successful completion of this course, students will describe the motion of particles and rigid bodies as functions of time and position, develop their equations of motions due to applied forces, and determine post impact behavior.
Prerequisites: MAT-110, MEC-104
Corequisites: PHY-111.

MEC-209. Introduction to Advanced Manufacturing and CNC Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
A continuation in the manufacturing process using Computer Numerical Controlled (CNC) milling and turning. Students will learn about and develop advanced manual CNC programs as well as computer-assisted programs (post-processed) derived from CAD (Computer Aided Drafting) drawings. The CNC programs will focus mainly on operations involving three axis milling machines and two axis lathes, but will also touch on operations involving advanced fixture setup and control. Topics will include spindle controls, tool changes, linear and circular interpolation, drilling and tapping, subroutines, and G&M codes. In addition, the course will cover a variety of advanced manufacturing techniques in additive manufacturing (3D Printing), EDM (Electrical Discharge Machining), and reverse engineering techniques using scanners and the CMM (Coordinate Measuring Machine).
Prerequisites: ENR-117 and ((MEC-117 and MEC-118) or MEC-109)
Additional Fees: Course fee applies.

MEC-229. Cooperative Work Experience-Mechanical Engineering Technology. 3 Credits.
COOP 3 hrs
Registration is only upon written recommendation of advisor. This course is a field experience in the laboratory facilities of an industrial firm. It is designed for students in the Mechanical Engineering Technology program to obtain industrial experience as a supplement to college studies prior to career employment. Seminar evaluation visitations are included. Completion of 25 technical credits required to enroll.
Prerequisites: Permission of department chair.

MEC-235. Kinematics. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is a study of moving elements as used in the design and analysis of basic mechanisms in machines. Velocity and acceleration analysis on a plane, design and analysis of 4-bar linkages, cams, gears and other mechanisms using graphical and analytical methods are studied.
Prerequisites: MAT-110
Corequisites: PHY-111
Additional Fees: Course fee applies.

MEC-236. Machine Design. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is the rational design and selection of machine elements considering their economics and manufacturability. The principles of strength of materials and mechanics are applied to the design of bearings, shafts, gears, springs, brakes and other elements of importance in mechanical systems. Consideration of service criteria, operating environment and cost. Emphasis is placed on developing a systematic design philosophy.
Prerequisites: MEC-141
Additional Fees: Course fee applies.

MEC-291. Special Topics in Mechanical Engineering Technology. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in Mechanical Engineering Technology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Mechanical Engineering Technology.

MEC-292. Special Topics in Mechanical Engineering Technology. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in Mechanical Engineering Technology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Mechanical Engineering Technology.

Music - Liberal Arts and Sciences

Associate in Arts Degree

This degree program is designed to meet the basic requirements of the first two years of college programs for students who plan to graduate and transfer to a four-year college or university. The program offers a wide range of flexibility in terms of a student’s ultimate educational goals and provides adequate preparation for further study leading to professional competence in specialized fields, especially in the humanities or the social sciences.

These programs also accommodate individuals seeking two years of a liberal higher education.

The program offers options in Human Services, Humanities/International Studies, Humanities/Broadcasting Arts and Technology, Humanities/Media Studies - Journalism, Humanities/Music, Humanities/Musical Theatre and Humanities/Social Science.

For more information, visit the Music (http://www.ccm.edu/academics/degrees/music.aspx) website. (http://www.ccm.edu/academics/degrees/music.aspx)
Degrees

AA Music
An Option within Liberal Arts and Sciences
(P1190)

The Music program includes background courses in the Humanities/Social Sciences offered by most four-year institutions in the first and second years. It prepares students to transfer to programs in primary and secondary school music, music therapy and performance degrees. All students must pass a theory placement exam or register for MUS-011 Basic Musicianship I and MUS-176 Aural Comprehension I during the first semester.

Students must receive a grade of C or better in MUS-011 Basic Musicianship I to register for MUS-117 Music Theory I. Any student who receives a grade of D in any music core course must repeat the course and is required to see the Music department chair before registering for the next semester.


General Education Foundation

Communication 9
ENG-111 English Composition I
ENG-112 English Composition II
COM-109 Speech Fundamentals

Math-Science-Technology 12
Choose from General Education course list
Mathematics (3-8 CR)
Laboratory Science (4-8 CR)
Technology (0-4 CR)

Social Science 6
PSY-113 General Psychology
SOC-120 Principles of Sociology

Humanities 9
Choose 3 from the following list of Humanities-Music Electives
MUS-114 American Music
MUS-150 Jazz History and Styles
MUS-217 Music History and Literature to 1750
MUS-218 Music History and Literature From 1750
MUS-248 Enjoyment of Music
MUS-258 Contemporary Music: 20th-21st Century

Note: MUS-143 World Music and Culture, and MUS-163 Rock History and Culture are also considered Music Humanities courses but cannot be used as both the Humanities and Diversity credit requirement.

History 6
*Please refer to the #1190 Curriculum Check Sheet for specific History choices.

Diversity 3

Musical Core

*Please Note: Music Theory, Applied Music Primary, and Applied Music Secondary are co-requisites and must be taken together.

MUS-117 Music Theory I 3
MUS-118 Music Theory II 3
MUS-215 Music Theory III 3
MUS-216 Music Theory IV 3

Note: Students must be registered for at least 6 Music credits in order to enroll in Applied Music Primary I - IV.

MUS-135 Applied Music Primary I 1
MUS-136 Applied Music Primary II 1
MUS-137 Applied Music Primary III 1
MUS-138 Applied Music Primary IV 1

Select one of the following sequences (Note: All music majors must register for Applied Music Secondary Piano I - IV unless their primary instrument is piano in which case students must register for Applied Music Secondary Voice I - IV)

MUS-125 Applied Music Secondary-Piano I 1
or MUS-109 Applied Music Secondary-Voice I
MUS-126 Applied Music Secondary-Piano II 1
or MUS-110 Applied Music Secondary-Voice II
MUS-225 Applied Music Secondary-Piano III 1
or MUS-209 Applied Music Secondary-Voice III
MUS-226 Applied Music Secondary-Piano IV 1
or MUS-210 Applied Music Secondary-Voice IV

Ensemble
MUS-145 Chamber Choir I 1
MUS-146 Chamber Choir II 1
MUS-147 Chamber Choir III 1

Musical Core Credits 23

Total Credits 68

Faculty

Marielaine R. Mammon
Chairperson, Music, Dance and Performing Arts
Professor, Music
M.A., B.A., The College of New Jersey
MTC 202 973-328-5434 mmammon@ccm.edu
Courses

MUS-011. Basic Musicianship I. 0 Credits.
LECT 3 hrs
Requirement for Music Majors who do not pass the Music Theory I, MUS-117, placement exam. A pre-music theory course designed to develop reading skills through keyboard, sight-singing and ear-training. This course may not be used as a curriculum requirement for any major. Students must pass this course or an equivalent Music Theory placement exam to register for MUS-117 Theory I.

LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence planned to develop vocal ability and emphasizes vocal techniques, diction and sight-reading. Prerequisites: Permission of department chair.

MUS-110. Applied Music Secondary-Voice II. 1 Credit.
LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence planned to develop vocal ability and emphasizes vocal techniques, diction and sight-reading. Prerequisites: MUS-109.

MUS-112. Introduction to Electronic Music. 3 Credits.
LECT 3 hrs
An exploration of the physical properties of sound, synthesizers, music recording, music arrangement, and the history of electronic music. Additional Fees: Course fee applies.

MUS-114. American Music. 3 Credits.
LECT 3 hrs
A survey of American Roots music from the 19th century to the present. Early Anglo and African influences are presented followed by 20th century folk, gospel, Hispanic, various styles of country, bluegrass and related acoustic music, various styles of blues and jazz, Cajun and zydeco, early R&B, soul and the beginnings of rock and roll.

MUS-117. Music Theory I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. This course is designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis. Prerequisites: MUS-011 or permission of department chair For Music Students Only Corequisites: (MUS-125 or MUS-109) and MUS-135.

MUS-118. Music Theory II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. This course is designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis. Prerequisites: MUS-117 For Music Students Only Corequisites: (MUS-126 or MUS-110) and MUS-136.

MUS-124. Electronic Music II. 3 Credits.
LECT 3 hrs
This course is a continuation of Introduction to Electronic Music with increased application of sound systems and MIDI systems. Students produce recorded final projects. Prerequisites: MUS-112 Additional Fees: Course fee applies.

MUS-125. Applied Music Secondary-Piano I. 1 Credit.
LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence designed to develop keyboard facility and is required of all music emphasis students whose principal instrument is not piano. Prerequisites: Music Majors only. Permission of department chair Corequisites: MUS-117 and MUS-135.

MUS-126. Applied Music Secondary-Piano II. 1 Credit.
LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence designed to develop keyboard facility and is required of all music emphasis students whose principal instrument is not piano. Prerequisites: MUS-125 Corequisites: MUS-118 and MUS-136.

MUS-127. Principles of Strings I. 1 Credit.
LECT 1 hr, LAB 2 hrs
For Music Students only. This course is designed to convey an understanding of the basic technical skills on violin studies with the first position.

MUS-128. Principles of Strings II. 1 Credit.
LECT 1 hr, LAB 2 hrs
For Music Students only. This course is designed to complete the study of basic violin, viola techniques and the understanding of the proper pedagogical approaches. Prerequisites: MUS-127.

MUS-129. Music in Early Childhood. 3 Credits.
LECT 3 hrs
A course offering students a wide variety of meaningful experiences which provide a foundation for musical growth and understanding of early childhood music. This is a hands-on course in which students must participate.

MUS-133. Development of Musical Theater. 3 Credits.
LECT 3 hrs
A course offering students a wide variety of meaningful experiences which provide a foundation for musical growth and understanding of early childhood music. This is a hands-on course in which students must participate.

MUS-135. Applied Music Primary I. 1 Credit.
LAB 1 hr
For Music emphasis students only. This course consists of one 50-minute private lesson per week (to be arranged) on student’s primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis. Corequisites: (MUS-125 or MUS-109) and MUS-117 Additional Fees: Course fee applies.

MUS-136. Applied Music Primary II. 1 Credit.
LAB 1 hr
This course consists of one 50-minute private lesson per week (to be arranged) on student’s primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis. Prerequisites: MUS-135 Corequisites: (MUS-126 or MUS-110) and MUS-118 Additional Fees: Course fee applies.
MUS-137. Applied Music Primary III. 1 Credit.
LAB 1 hr
This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis. 
Prerequisites: MUS-136
Corequisites: ( MUS-225 or MUS-209) and MUS-215
Additional Fees: Course fee applies.

MUS-138. Applied Music Primary IV. 1 Credit.
LAB 1 hr
This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis. 
Prerequisites: MUS-137 For Music Students Only
Corequisites: (MUS-226 or MUS-210) and MUS-216
Additional Fees: Course fee applies.

MUS-139. Wind Ensemble I. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-140. Wind Ensemble II. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-141. Wind Ensemble III. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-142. Wind Ensemble IV. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-143. World Music and Culture. 3 Credits.
LECT 3 hrs
A survey of world folk music including material from Asia, the Middle East, Africa, Europe, North and South America. Lectures and discussions are illustrated by recordings, DVDs and online resources. Students may be invited to contribute course subject matter by bringing personally favored music to be studied.

MUS-145. Chamber Choir I. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-146. Chamber Choir II. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-147. Chamber Choir III. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-148. Chamber Choir IV. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-150. Jazz History and Styles. 3 Credits.
LECT 3 hrs
This course is an examination of the styles and elements of this improvisational music from the 1860's to the present. This course focuses on the evolution of jazz from its roots in the blues and spirituals to the emergence of contemporary fusion and avant-garde styles.

MUS-152. Piano I. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios, and simple accompaniments. Keyboard experience is not required. Course is designed specifically for the non-music major.

MUS-153. Piano II. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios, and simple accompaniments. Keyboard experience is not required. Course is designed specifically for the non-music major.

MUS-154. Piano III. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios and simple accompaniments. Keyboard experience is not required. Course is designed specifically for the non-music major.

MUS-155. Piano IV. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios and simple accompaniments. Keyboard experience is not required. Course is designed specifically for the non-music major.
MUS-159. Guitar I. 1 Credit.
LECT 1 hr, LAB 2 hrs
Open to all students. Group guitar instruction in fundamental guitar techniques. Studies include plectrum and finger style, position reading, scales and chord construction. Course designed to accommodate non-guitar music students as well as non-music majors.

MUS-160. Guitar II. 1 Credit.
LECT 1 hr, LAB 2 hrs
Open to all students. Group guitar instruction in fundamental guitar techniques. Studies include plectrum and finger style, position reading, scales and chord construction. Course designed to accommodate non-guitar music students as well as non-music majors.

MUS-163. Rock History and Culture. 3 Credits.
LECT 3 hrs
This course traces the evolution of rock music from 1955 to the present and examines the cultural impact of the music form on contemporary society.

MUS-165. Introduction to Music Recording. 3 Credits.
LECT 3 hrs
An introduction to the commercial recording studio. Students explore the equipment and techniques used in the recording of various types of contemporary music. Topics include studio acoustics and design, sound and hearing, microphones and microphone technique, recording console and signal flow, analog and digital recording systems, and sound processing. Students receive hands-on experience on both analog and digital recording equipment during in-class demonstrations and workshops.
Additional Fees: Course fee applies.

MUS-166. Introduction to Music Business. 3 Credits.
LECT 3 hrs
A general overview of all areas of music business including demo tape promotion, contracts, managers, copyright laws and publishing. Guest lecturers include prominent industry lawyers and agents.

MUS-167. Music Recording II. 3 Credits.
LECT 3 hrs
A continuation of MUS-165 Introduction to Music Recording in which students explore more complex recording situations through individual student projects. Students receive hands-on experience in session set-up, miking, use of outboard signal processing, mixing and production.
Prerequisites: MUS-165
Corequisites: MUS-180
Additional Fees: Course fee applies.

MUS-170. Symphony Orchestra I. 1 Credit.
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-172. Symphony Orchestra II. 1 Credit.
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-173. Symphony Orchestra IV. 1 Credit.
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-174. Aural Comprehension I. 1 Credit.
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.
Additional Fees: Course fee applies.

MUS-175. Aural Comprehension II. 1 Credit.
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.
Additional Fees: Course fee applies.

MUS-176. Aural Comprehension III. 1 Credit.
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.
Additional Fees: Course fee applies.

MUS-177. Aural Comprehension IV. 1 Credit.
LECT 1 hr, LAB 3 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.
Additional Fees: Course fee applies.

MUS-178. Microphone Techniques. 2 Credits.
LECT 1 hr, LAB 3 hrs
An in-depth study of the different techniques used for miking an array of instruments from woodwinds, brass and strings, to drums and electric instruments. Students study the design of dynamic and condenser microphones, special microphones used for certain instruments, sound comparison between different types of microphones and microphone placement on instruments.
Prerequisites: MUS-165
Corequisites: MUS-167
Additional Fees: Course fee applies.

MUS-179. Audio Production Techniques. 1 Credit.
LECT 1 hr
An examination of the production techniques used in the recording of contemporary and classic music. The course focuses on the development of critical listening skills, as well as the use of different recording and mixing techniques in an effort to enhance the overall production value of a recording. Students produce a sound-alike project in which they must emulate the sound of a preexisting recording.
Prerequisites: MUS-165, MUS-167, MUS-180
Additional Fees: Course fee applies.
MUS-184. Musical Theatre Production and Performance. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Musical Theatre Production and Performance offers demanding training designed to prepare students for a career in musical theatre. Students participate in all aspects of the production from technical elements to a final performance.

MUS-201. Jazz Ensemble I. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-202. Jazz Ensemble II. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-203. Jazz Ensemble III. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-204. Jazz Ensemble IV. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-209. Applied Music Secondary-Voice III. 1 Credit.
LECT 1 hr, LAB 2 hrs
A four-semester sequence planned to develop vocal ability. The course emphasizes vocal techniques, diction and sight-reading.
Prerequisites: MUS-110.

LECT 1 hr, LAB 2 hrs
For Music students only. A four-semester sequence planned to develop vocal ability. This course emphasizes vocal techniques, diction and sight-reading.
Prerequisites: MUS-209 or permission of department chair.

MUS-214. Form and Analysis. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A study of larger forms which have evolved throughout music history. Emphasis is placed on score reading of symphonies, large choral works, operas, chamber works and sonata repertoire.
Prerequisites: MUS-117, MUS-118, MUS-215, MUS-216.

MUS-215. Music Theory III. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. Designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.
Prerequisites: MUS-118 For Music Students Only
Corequisites: (MUS-225 or MUS-209) and MUS-137.

MUS-216. Music Theory IV. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. Designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.
Prerequisites: MUS-215 For Music Students Only
Corequisites: (MUS-226 or MUS-210) and MUS-138.

MUS-217. Music History and Literature From 1750. 3 Credits.
LECT 3 hrs
An in-depth study of music in Western civilization from ancient times through the Baroque period. Music from each period is discussed and analyzed.

MUS-218. Music History and Literature From 1750. 3 Credits.
LECT 3 hrs
A continuation of Music History and Literature from 1750. A study of music from the late Baroque through the Romantic period. Includes analysis of representative works.

MUS-221. Chamber Ensemble I. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged. Students must play a wind, percussion, string or keyboard instrument.

MUS-222. Chamber Ensemble II. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged. Students must play a wind, percussion, string or keyboard instrument.

MUS-223. Chamber Ensemble III. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged. Students must play a wind, percussion, string or keyboard instrument.

MUS-224. Chamber Ensemble IV. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged. Students must play a wind, percussion, string or keyboard instrument.

MUS-225. Applied Music Secondary-Piano III. 1 Credit.
LECT 1 hr, LAB 2 hrs
A four-semester sequence designed to develop keyboard facility. Required of all music emphasis students whose principal instrument is not piano.
Prerequisites: MUS-126
Corequisites: MUS-137 and MUS-215.

MUS-226. Applied Music Secondary - Piano IV. 1 Credit.
LECT 1 hr, LAB 2 hrs
For Music Students only. A four-semester sequence designed to develop keyboard facility. Required of all music emphasis students whose principal instrument is not piano.
Prerequisites: MUS-225 - Music Majors Only
MUS-227. Operetta and Music Theatre I. 1 Credit.
LECT 3 hrs
A theatrical production is the final objective in the course. Students, through rehearsal and performance, have a chance to have practical experiences with their art, i.e., staging, conducting, lighting, singing and general production work.

MUS-228. Operetta and Musical Theatre II. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students, through rehearsal and performance, have a chance to have practical experiences with their art, i.e., staging, conducting, lighting, singing and general production work.

MUS-229. Operetta and Musical Theatre III. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students, through rehearsal and performance, have a chance to have practical experiences with their art, i.e., staging, conducting, lighting, singing and general production work.

MUS-230. Operetta and Musical Theatre IV. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students, through rehearsal and performance, have a chance to have practical experiences with their art, i.e., staging, conducting, lighting, singing and general production work.

MUS-233. Independent Study in Music. 1 Credit.
LECT 1 hr
For Music Students only. This course is designed to allow students who have a specialized interest or who are pursuing a topic at an advanced level to engage in rigorous individualized study. The study must be designed by the faculty member and student and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-234. Independent Study in Music. 3 Credits.
LECT 3 hrs
For Music Students only. This course is designed to allow students who have a specialized interest or who are pursuing a topic at an advanced level to engage in rigorous individualized study. The study must be designed by the faculty member and student and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-237. Cabaret Music Theatre. 1 Credit.
LAB 4 hrs
This course in cabaret theatre considers the revue-type of theatrical production which has been popularized in productions in New York, Chicago, Los Angeles and on many college campuses throughout the country. A cabaret musical revue is the final project.

MUS-238. Cabaret Music Theatre II. 1 Credit.
LAB 4 hrs
This course in cabaret theatre considers the revue-type of theatrical production which has been popularized in productions in New York, Chicago, Los Angeles and on many college campuses throughout the country. A cabaret musical revue is the final project.
MUS-250. Internship in Music Recording. 1 Credit.
LECT 1 hr
For Music students only. This course assigns the student to experience the actual working conditions in an established music recording studio facility. With the cooperation of the facility director, appropriate work projects are assigned and the student judged on his or her level of knowledge, expertise and confidence in the various aspects of the music recording business.
Prerequisites: Permission of department chair.

MUS-253. Independent Study in Music II. 1 Credit.
LECT 1 hr
For Music Emphasis students only. Independent Study in Music is designed to allow the student who has a specialized interest or who is pursuing a topic at an advanced level to engage in rigorous individualized study. The study plan must be designed by the student and a faculty member and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-254. Independent Study in Music III. 1 Credit.
LECT 1 hr
For Music Emphasis students only. Independent Study in Music is designed to allow the student who has a specialized interest or who is pursuing a topic at an advanced level to engage in rigorous individualized study. The study plan must be designed by the student and a faculty member and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-258. Contemporary Music: 20th-21st Century. 3 Credits.
LECT 3 hrs
A study of the musical trends, idioms, styles and aesthetics of the Classical Music, Jazz, Rock, Latin Music, and Film Music of the 20th and 21st centuries. In addition to the study of the literature, students will be broadly educated on the fundamental elements of music including melody, harmony, counterpoint, musical forms, texture, and orchestration. Students may be invited to contribute subject matter by bringing personally favored music of the 20th and 21st centuries to be studied, analyzed, and discussed.

MUS-259. Hard Disc Recording. 2 Credits.
LECT 1 hr, LAB 3 hrs
Students learn about the operation and application of AVID Pro Tools hard disk recording and editing software. Topics include signal flow and routing, editing, fades and cross fades, digital signal processing, mixing, and automation.
Prerequisites: MUS-165, MUS-167 and MUS-180 or MUS-165, MUS-112 and MUS-124
Additional Fees: Course fee applies.

MUS-291. Special Topics in Music. 3 Credits.
LECT 3 hrs
A broad-based review of musical topics ranging from a continuation of sight singing, ear training and keyboard harmony to technology-based courses such as Live Sound, and Music for Film.
Prerequisites: Permission of department chair.

MUS-292. Special Topics in Music. 3 Credits.
LECT 3 hrs
A broad-based review of musical topics ranging from a continuation of sight singing, ear training and keyboard harmony to technology-based courses such as Live Sound, and Music for Film.
Prerequisites: Permission of department chair.

Music Technology

Associate in Science Degree

These specialized career programs are designed to prepare students for entry into the job market or to continue their studies at four-year colleges.

For more information, visit the Music website.

Degrees
• AS Music Technology - Electronic Music Option (p. 170)
• AS Music Technology - Music Recording Option (p. 171)

Electronic Music
An Option within Music Technology (P2171)
The Electronic Music option introduces students to the history, equipment and techniques of composing, arranging and performing music using electronic technology. Students learn theory and have hands-on experience with analog and digital technology, MIDI and General MIDI sampling, sound output systems and tape recording. Students also use computer technology to create electronic music and learn techniques and application of software programs dealing with music recording, notation, sound editors and sound libraries. All students must pass a theory placement exam or register for MUS-011 Basic Musicianship I and MUS-176 Aural Comprehension I during the first semester.

Students must receive a grade of C or better in MUS-011 Basic Musicianship I to register for MUS-117 Music Theory I. Any student who receives a grade of D in any music core course must repeat the course and is required to see the Music department chair before registering for the next semester.


General Education Foundation

Communication 6
- ENG-111 English Composition I
- ENG-112 English Composition II

Math-Science-Technology 10
- MAT-110 College Algebra
CMP-135  Computer Concepts with Applications
Laboratory Science (4 credits) - From the General Education Course List, choose any 4 credit science course that includes a lab component

Social Science - Choose one of the following 3
PSY-113  General Psychology
SOC-120  Principles of Sociology

Humanities - Choose one of the following 3
MUS-114  American Music
MUS-143  World Music and Culture
MUS-150  Jazz History and Styles
MUS-163  Rock History and Culture
MUS-217  Music History and Literature to 1750
MUS-218  Music History and Literature From 1750
MUS-248  Enjoyment of Music
MUS-258  Contemporary Music: 20th-21st Century

Social Science or Humanities Elective 3
Choose from General Education course list

General Education Electives 6
Language Sequence or History
*Please refer to the #2171 Curriculum Check Sheet for specific Language or History choices.

General Education Foundation Credits 31

Electronic Musical Core
*Please Note: Music Theory, Applied Music Primary, and Applied Music Secondary are co-requisites and must be taken together.
MUS-117  Music Theory I 3
MUS-118  Music Theory II 3
MUS-215  Music Theory III 3
MUS-216  Music Theory IV 3

Note: Students must be registered for at least 6 Music credits in order to enroll in Applied Music Primary I - IV
MUS-135  Applied Music Primary I 1
MUS-136  Applied Music Primary II 1
MUS-137  Applied Music Primary III 1

Select one of the following sequences (Note: All music majors must register for Applied Music Secondary Piano I - IV unless their primary instrument is piano, in which case students must register for Applied Music Secondary Voice I - IV)
MUS-125  Applied Music Secondary-Piano I 1
or MUS-109  Applied Music Secondary-Voice I
MUS-126  Applied Music Secondary-Piano II 1
or MUS-110  Applied Music Secondary-Voice II
MUS-225  Applied Music Secondary-Piano III 1
or MUS-209  Applied Music Secondary-Voice III
MUS-226  Applied Music Secondary - Piano IV 1
or MUS-210  Applied Music Secondary-Voice IV

Ensemble
MUS-145  Chamber Choir I 1
and one of the following 1
MUS-146  Chamber Choir II
MUS-139  Wind Ensemble I

MUS-170  Symphony Orchestra I
MUS-201  Jazz Ensemble I
MUS-221  Chamber Ensemble I

Electronic Music
MUS-112  Introduction to Electronic Music 3
MUS-124  Electronic Music II 3
MUS-165  Introduction to Music Recording 3
MUS-166  Introduction to Music Business 3
MUS-244  Independent Study in Electronic Music I 1
MUS-245  Independent Study in Electronic Music II 1
MUS-259  Hard Disc Recording 2

Electronic Musical Core Credits 37
Total Credits 68

Music Recording
An Option within Music Technology (P2170)
The Music Recording option introduces students to the equipment and practices used in the recording of contemporary music. Students explore multi-track and live recording techniques with hands-on use of both analog and digital recording equipment. In addition, students learn the application of industry standard hard disk recording and editing software. All students must pass a theory placement exam or register for MUS-011 Basic Musicianship I and MUS-176 Aural Comprehension I during the first semester.

Students must receive a grade of C or better in MUS-011 Basic Musicianship I to register for MUS-117 Music Theory I. Any student who receives a grade of D in any music core course must repeat the course and is required to see the Music department chair before registering for the next semester.


General Education Foundation
Communication 6
ENG-111  English Composition I
ENG-112  English Composition II
Math-Science-Technology 10
MAT-110  College Algebra
CMP-135  Computer Concepts with Applications
Lab Science (4 credits) - From the General Education Course List, choose any 4 credit science course that includes a lab component
Social Science - Choose one of the following 3
PSY-113  General Psychology
SOC-120  Principles of Sociology
Humanities - Choose one of the following 3
- MUS-114 American Music
- MUS-143 World Music and Culture
- MUS-150 Jazz History and Styles
- MUS-163 Rock History and Culture
- MUS-248 Enjoyment of Music

MUS-217 Music History and Literature to 1750
MUS-218 Music History and Literature From 1750
MUS-258 Contemporary Music: 20th-21st Century

Social Science or Humanities Elective 3
Choose from General Education course list

General Education Electives 6

Language Sequence or History

*Please refer to the #2170 Curriculum Check Sheet for specific Language or History choices.

General Education Foundation Credits 31

**Music Recording Core**

*Please Note: Music Theory, Applied Music Primary, and Applied Music Secondary are co-requisites and must be taken together.

- MUS-117 Music Theory I 3
- MUS-118 Music Theory II 3
- MUS-215 Music Theory III 3
- MUS-216 Music Theory IV 3

Note: Students must be registered for at least 6 Music credits in order to enroll in Applied Music Primary I - III

- MUS-135 Applied Music Primary I 1
- MUS-136 Applied Music Primary II 1
- MUS-137 Applied Music Primary III 1

Select one of the following sequences (Note: All music majors must register for Applied Music Secondary Piano I & II unless their primary instrument is piano, in which case students must register for Applied Music Secondary Voice I & II)

- MUS-125 Applied Music Secondary-Piano I 1
  or MUS-109 Applied Music Secondary-Voice I 1

- MUS-126 Applied Music Secondary-Piano II 1
  or MUS-110 Applied Music Secondary-Voice II 1

Ensemble

- MUS-145 Chamber Choir I 1
  and one of the following 1
  - MUS-146 Chamber Choir II
  - MUS-139 Wind Ensemble I
  - MUS-170 Symphony Orchestra I
  - MUS-201 Jazz Ensemble I
  - MUS-221 Chamber Ensemble I

**Music Recording**

- MUS-165 Introduction to Music Recording 3
- MUS-166 Introduction to Music Business 3
- MUS-167 Music Recording II 3
- MUS-180 Microphone Techniques 2
- MUS-182 Audio Production Techniques 1
- MUS-259 Hard Disc Recording 2
- MUS-249 Practicum 1

MUS-250 Internship in Music Recording 1
ELT-123 Studio Maintenance 3

Music Recording Core Credits 38

Total Credits 69

**Faculty**

Marielaine R. Mammon
Chairperson, Music, Dance and Performing Arts
Professor, Music
M.A., B.A., The College of New Jersey
MTC 202 973-328-5434 mmammon@ccm.edu

**Courses**

**MUS-011. Basic Musicianship I. 0 Credits.**
LECT 3 hrs
Requirement for Music Majors who do not pass the Music Theory I, MUS-117, placement exam. A pre-music theory course designed to develop reading skills through keyboard, sight-singing and ear-training. This course may not be used as a curriculum requirement for any major. Students must pass this course or an equivalent Music Theory placement exam to register for MUS-117 Theory I.

**MUS-109. Applied Music Secondary-Voice I. 1 Credit.**
LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence planned to develop vocal ability and emphasizes vocal techniques, diction and sight-reading.

**Prerequisites:** Permission of department chair.

**MUS-110. Applied Music Secondary-Voice II. 1 Credit.**
LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence planned to develop vocal ability and emphasizes vocal techniques, diction and sight-reading.

**Prerequisites:** MUS-109.

**MUS-112. Introduction to Electronic Music. 3 Credits.**
LECT 3 hrs
An exploration of the physical properties of sound, synthesizers, music recording, music arrangement, and the history of electronic music.

**Additional Fees:** Course fee applies.

**MUS-114. American Music. 3 Credits.**
LECT 3 hrs
A survey of American Roots music from the 19th century to the present. Early Anglo and African influences are presented followed by 20th century folk, gospel, Hispanic, various styles of country, bluegrass and related acoustic music, various styles of blues and jazz, Cajun and zydeco, early R&B, soul and the beginnings of rock and roll.

**MUS-117. Music Theory I. 3 Credits.**
LECT 2 hrs, LAB 3 hrs
For Music Students only. This course is designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.

**Prerequisites:** MUS-011 or permission of department chair For Music Students Only

**Corequisites:** (MUS-125 or MUS-109) and MUS-135.
MUS-118. Music Theory II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. This course is designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.
Prerequisites: MUS-117 For Music Students Only
Corequisites: (MUS-126 or MUS-110) and MUS-136.

MUS-124. Electronic Music II. 3 Credits.
LECT 3 hrs
This course is a continuation of Introduction to Electronic Music with increased application of sound systems and MIDI systems. Students produce recorded final projects.
Prerequisites: MUS-112
Additional Fees: Course fee applies.

MUS-125. Applied Music Secondary-Piano I. 1 Credit.
LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence designed to develop keyboard facility and is required of all music emphasis students whose principal instrument is not piano.
Prerequisites: Music Majors only. Permission of department chair
Corequisites: MUS-117 and MUS-135.

MUS-126. Applied Music Secondary-Piano II. 1 Credit.
LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence designed to develop keyboard facility and is required of all music emphasis students whose principal instrument is not piano.
Prerequisites: MUS-125
Corequisites: MUS-118 and MUS-136.

MUS-127. Principles of Strings I. 1 Credit.
LECT 1 hr, LAB 2 hrs
For Music Students only. This course is designed to convey an understanding of the basic technical skills on violin studies with the first position.

MUS-128. Principles of Strings II. 1 Credit.
LECT 1 hr, LAB 2 hrs
For Music Students only. This course is designed to complete the study of basic violin, viola techniques and the understanding of the proper pedagogical approaches.
Prerequisites: MUS-127.

MUS-129. Music in Early Childhood. 3 Credits.
LECT 3 hrs
A course offering students a wide variety of meaningful experiences which provide a foundation for musical growth and understanding of early childhood music. This is a hands-on course in which students must participate.

MUS-132. Development of Musical Theater. 3 Credits.
LECT 3 hrs
This course is an examination of the elements of the musical (singing, acting, dancing, song construction, story development) and an exploration of the beginnings of the musical theater from Europe to Broadway.

MUS-135. Applied Music Primary I. 1 Credit.
LAB 1 hr
For Music emphasis students only. This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis.
Prerequisites: MUS-135
Corequisites: (MUS-125 or MUS-109) and MUS-117
Additional Fees: Course fee applies.

MUS-136. Applied Music Primary II. 1 Credit.
LAB 1 hr
This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis.
Prerequisites: MUS-135
Corequisites: (MUS-125 or MUS-109) and MUS-117
Additional Fees: Course fee applies.

MUS-137. Applied Music Primary III. 1 Credit.
LAB 1 hr
This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis.
Prerequisites: MUS-136
Corequisites: (MUS-225 or MUS-209) and MUS-215
Additional Fees: Course fee applies.

MUS-138. Applied Music Primary IV. 1 Credit.
LAB 1 hr
This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis.
Prerequisites: MUS-135
Corequisites: (MUS-225 or MUS-209) and MUS-215
Additional Fees: Course fee applies.

MUS-139. Wind Ensemble I. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-140. Wind Ensemble II. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-141. Wind Ensemble III. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-142. Wind Ensemble IV. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.
MUS-143. World Music and Culture. 3 Credits.
LECT 3 hrs
A survey of world folk music including material from Asia, the Middle East, Africa, Europe, North and South America. Lectures and discussions are illustrated by recordings, DVDs and online resources. Students may be invited to contribute course subject matter by bringing personally favored music to be studied.

MUS-145. Chamber Choir I. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-146. Chamber Choir II. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-147. Chamber Choir III. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-148. Chamber Choir IV. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-150. Jazz History and Styles. 3 Credits.
LECT 3 hrs
This course is an examination of the styles and elements of this improvisational music from the 1860's to the present. This course focuses on the evolution of jazz from its roots in the blues and spirituals to the emergence of contemporary fusion and avant-garde styles.

MUS-152. Piano I. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios and simple accompaniments. Keyboard experience is not required. Course designed specifically for the non-music major.

MUS-153. Piano II. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios, and simple accompaniments. Keyboard experience is not required. Course designed specifically for the non-music major.

MUS-154. Piano III. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios and simple accompaniments. Keyboard experience is not required. Course designed specifically for the non-music major.

MUS-155. Piano IV. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios and simple accompaniments. Keyboard experience is not required. Course designed specifically for the non-music major.

MUS-159. Guitar I. 1 Credit.
LECT 1 hr, LAB 2 hrs
Open to all students. Group guitar instruction in fundamental guitar techniques. Studies include plectrum and finger style, position reading, scales and chord construction. Course designed to accommodate non-guitar music students as well as non-music majors.

MUS-160. Guitar II. 1 Credit.
LECT 1 hr, LAB 2 hrs
Open to all students. Group guitar instruction in fundamental guitar techniques. Studies include plectrum and finger style, position reading, scales and chord construction. Course designed to accommodate non-guitar music students as well as non-music majors.

MUS-163. Rock History and Culture. 3 Credits.
LECT 3 hrs
This course traces the evolution of rock music from 1955 to the present and examines the cultural impact of the music form on contemporary society.

MUS-165. Introduction to Music Recording. 3 Credits.
LECT 3 hrs
An introduction to the commercial recording studio. Students explore the equipment and techniques used in the recording of various types of contemporary music. Topics include studio acoustics and design, sound and hearing, microphones and microphone technique, recording console and signal flow, analog and digital recording systems, and signal processing. Students receive hands-on experience on both analog and digital recording equipment during in-class demonstrations and workshops.

Additional Fees: Course fee applies.

MUS-166. Introduction to Music Business. 3 Credits.
LECT 3 hrs
A general overview of all areas of music business including demo tape promotion, contracts, managers, copyright laws and publishing. Guest lecturers include prominent industry lawyers and agents.

MUS-167. Music Recording II. 3 Credits.
LECT 3 hrs
A continuation of MUS-165 Introduction to Music Recording in which students explore more complex recording situations through individual student projects. Students receive hands-on experience in session set-up, mixing, use of outboard signal processing, mixing and production.

Prerequisites: MUS-165
Corequisites: MUS-180
Additional Fees: Course fee applies.
MUS-170. Symphony Orchestra I. 1 Credit.
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-171. Symphony Orchestra II. 1 Credit.
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-172. Symphony Orchestra III. 1 Credit.
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-173. Symphony Orchestra IV. 1 Credit.
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-176. Aural Comprehension I. 1 Credit.
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.
Additional Fees: Course fee applies.

MUS-177. Aural Comprehension II. 1 Credit.
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.
Additional Fees: Course fee applies.

MUS-178. Aural Comprehension III. 1 Credit.
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.
Additional Fees: Course fee applies.

MUS-179. Aural Comprehension IV. 1 Credit.
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.
Additional Fees: Course fee applies.

MUS-180. Microphone Techniques. 2 Credits.
LECT 1 hr, LAB 3 hrs
An in-depth study of the different techniques used for miking an array of instruments from woodwinds, brass and strings, to drums and electric instruments. Students study the design of dynamic and condenser microphones, special microphones used for certain instruments, sound comparison between different types of microphones and microphone placement on instruments.
Prerequisites: MUS-165
Corequisites: MUS-167
Additional Fees: Course fee applies.

MUS-182. Audio Production Techniques. 1 Credit.
LECT 1 hr
An examination of the production techniques used in the recording of contemporary and classic music. The course focuses on the development of critical listening skills, as well as the use of different recording and mixing techniques in an effort to enhance the overall production value of a recording. Students produce a sound-alike project in which they must emulate the sound of a preexisting recording.
Prerequisites: MUS-165, MUS-167, MUS-180
Additional Fees: Course fee applies.

MUS-184. Musical Theatre Production and Performance. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Musical Theatre Production and Performance offers demanding training designed to prepare students for a career in musical theatre. Students participate in all aspects of the production from technical elements to a final performance.

MUS-201. Jazz Ensemble I. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-202. Jazz Ensemble II. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-203. Jazz Ensemble III. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-204. Jazz Ensemble IV. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-209. Applied Music Secondary-Voice III. 1 Credit.
LECT 1 hr, LAB 2 hrs
A four-semester sequence planned to develop vocal ability. The course emphasizes vocal techniques, diction and sight-reading.
Prerequisites: MUS-110.

LECT 1 hr, LAB 2 hrs
For Music students only. A four-semester sequence planned to develop vocal ability. This course emphasizes vocal techniques, diction and sight-reading.
Prerequisites: MUS-209 or permission of department chair.

MUS-214. Form and Analysis. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A study of larger forms which have evolved throughout music history. Emphasis is placed on score reading of symphonies, large choral works, operas, chamber works and sonata repertoire.
Prerequisites: MUS-117, MUS-118, MUS-215, MUS-216.
MUS-215. Music Theory III. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. Designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.  
**Prerequisites:** MUS-118 For Music Students Only  
**Corequisites:** (MUS-225 or MUS-209) and MUS-137.

MUS-216. Music Theory IV. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. Designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.  
**Prerequisites:** MUS-215 For Music Students Only  
**Corequisites:** (MUS-226 or MUS-210) and MUS-138.

MUS-217. Music History and Literature to 1750. 3 Credits.
LECT 3 hrs
An in-depth study of music in Western civilization from ancient times through the Baroque period. Music from each period is discussed and analyzed.

MUS-218. Music History and Literature From 1750. 3 Credits.
LECT 3 hrs
A continuation of Music History and Literature from 1750. A study of music from the late Baroque through the Romantic period. Includes analysis of representative works.

MUS-221. Chamber Ensemble I. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged. Students must play a wind, percussion, string or keyboard instrument.

MUS-222. Chamber Ensemble II. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged. Students must play a wind, percussion, string or keyboard instrument.

MUS-223. Chamber Ensemble III. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged. Students must play a wind, percussion, string or keyboard instrument.

MUS-224. Chamber Ensemble IV. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged. Students must play a wind, percussion, string or keyboard instrument.

MUS-225. Applied Music Secondary-Piano III. 1 Credit.
LECT 1 hr, LAB 2 hrs
A four-semester sequence designed to develop keyboard facility. Required of all music emphasis students whose principal instrument is not piano.  
**Prerequisites:** MUS-126  
**Corequisites:** MUS-137 and MUS-215.

MUS-226. Applied Music Secondary - Piano IV. 1 Credit.
LECT 1 hr, LAB 2 hrs
For Music Students only. A four-semester sequence designed to develop keyboard facility. Required of all music emphasis students whose principal instrument is not piano.  
**Prerequisites:** MUS-225 - Music Majors Only  
**Corequisites:** MUS-216 and MUS-138.

MUS-227. Operetta and Musical Theatre I. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students, through rehearsal and performance, have a chance to have practical experiences with their art, i.e., staging, conducting, lighting, singing and general production work.

MUS-228. Operetta and Musical Theatre II. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students, through rehearsal and performance, have a chance to have practical experiences with their art, i.e., staging, conducting, lighting, singing and general production work.

MUS-229. Operetta and Musical Theatre III. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students, through rehearsal and performance, have a chance to have practical experiences with their art, i.e., staging, conducting, lighting, singing and general production work.

MUS-230. Operetta and Musical Theatre IV. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students, through rehearsal and performance, have a chance to have practical experiences with their art, i.e., staging, conducting, lighting, singing and general production work.

MUS-233. Independent Study in Music. 1 Credit.
LECT 1 hr
For Music Students only. This course is designed to allow students who have a specialized interest or who are pursuing a topic at an advanced level to engage in rigorous individualized study. The study must be designed by the faculty member and student and must be approved by the department chair.  
**Prerequisites:** Permission of department chair  
**Additional Fees:** Course fee applies.

MUS-234. Independent Study in Music. 3 Credits.
LECT 3 hrs
For Music Students only. Independent Study in Music is designed to allow students who have a specialized interest or who are pursuing a topic at an advanced level to engage in rigorous individualized study. The study must be designed by the student and a faculty member and must be approved by the department chair.  
**Prerequisites:** Permission of department chair  
**Additional Fees:** Course fee applies.
MUS-237. Cabaret Music Theatre. 1 Credit.
LECT 3 hrs
This course in cabaret theatre considers the revue-type of theatrical production which has been popularized in productions in New York, Chicago, Los Angeles and on many college campuses throughout the country. A cabaret musical revue is the final project.

MUS-238. Cabaret Music Theatre II. 1 Credit.
LAB 4 hrs
This course in cabaret theatre considers the revue-type of theatrical production which has been popularized in productions in New York, Chicago, Los Angeles and on many college campuses throughout the country. A cabaret musical revue is the final project.

MUS-240. Jazz Guitar. 1 Credit.
LECT 1 hr, LAB 2 hrs
This course is recommended for guitar majors, jazz ensemble guitarists or those with equivalent skills. It covers harmonic and melodic aspects of jazz improvisation in a solo or ensemble setting. Topics include modes, arpeggios and chord structure, and inversions of seventh chords in all keys. Students must already have a working knowledge of the guitar, i.e., bar chords, major/ minor scales, some experience with notes and chord symbols. While this is not a class for beginner guitarists, beginner jazz players are welcome.

MUS-243. Musical Theatre Auditions. 3 Credits.
LECT 3 hrs
This course introduces the students to the preliminary work involved in the techniques of auditioning. The protocol of auditioning, including resume, agents, casting directors, scene reading and actual vocal selections, are covered in class.

MUS-244. Independent Study in Electronic Music I. 1 Credit.
LECT 1 hr
This course is an exploration of analog synthesis techniques and devices designed to allow the student to pursue specialized topics to an advanced level. The study is project oriented.
Prerequisites: MUS-112, MUS-124
Additional Fees: Course fee applies.

MUS-245. Independent Study in Electronic Music II. 1 Credit.
LECT 1 hr
This course is an exploration of the computer-based music workstation and digital technology designed to allow the student to pursue specialized topics to an advanced level. The study is project oriented.
Prerequisites: MUS-112, MUS-124, MUS-244
Additional Fees: Course fee applies.

MUS-248. Enjoyment of Music. 3 Credits.
LECT 3 hrs
Emphasis is placed on experiencing, discussing and realizing various musical styles throughout history to the present time. All music from the ancient to even today's most popular styles are covered, but with specific attention given to how to listen and appreciate each musical genre. Students may even be invited to contribute to the course content by bringing personally favored music to be studied.

MUS-249. Practicum. 1 Credit.
LECT 1 hr
For Music Students only. Weekly lessons in a one-to-one or small group arrangement with a faculty member prepares the student in the techniques of professional music recording. Appropriate projects are assigned to help the individual student develop his or her recording skills in various situations and with various types of equipment. A finished project is produced by the student and judged in a jury session.
Prerequisites: MUS-165, MUS-167, MUS-180, MUS-182, MUS-259
Additional Fees: Course fee applies.

MUS-250. Internship in Music Recording. 1 Credit.
LECT 1 hr
For Music students only. This course assigns the student to experience the actual working conditions in an established music recording studio facility. With the cooperation of the facility director, appropriate work projects are assigned and the student judged on his or her level of knowledge, expertise and confidence in the various aspects of the music recording business.
Prerequisites: MUS-165, MUS-167, MUS-180, MUS-182, MUS-259
Additional Fees: Course fee applies.

MUS-253. Independent Study in Music II. 1 Credit.
LECT 1 hr
For Music Emphasis students only. Independent Study in Music is designed to allow the student who has a specialized interest or who is pursuing a topic at an advanced level to engage in rigorous individualized study. The study plan must be designed by the student and a faculty member and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-254. Independent Study in Music III. 1 Credit.
LECT 1 hr
For Music Emphasis students only. Independent Study in Music is designed to allow the student who has a specialized interest or who is pursuing a topic at an advanced level to engage in rigorous individualized study. The study plan must be designed by the student and a faculty member and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-255. Contemporary Music: 20th-21st Century. 3 Credits.
LECT 3 hrs
A study of the musical trends, idioms, styles and aesthetics of the Classical Music, Jazz, Rock, Latin Music, and Film Music of the 20th and 21st centuries. In addition to the study of the literature, students will be broadly educated on the fundamental elements of music including melody, harmony, counterpoint, musical forms, texture, and orchestration. Students may be invited to contribute subject matter by bringing personally favored music of the 20th and 21st centuries to be studied, analyzed, and discussed.
MUS-259. Hard Disc Recording. 2 Credits.
LECT 1 hr, LAB 3 hrs
Students learn about the operation and application of AVID Pro Tools hard disk recording and editing software. Topics include signal flow and routing, editing, fades and cross fades, digital signal processing, mixing, and automation.
Prerequisites: MUS-165, MUS-167 and MUS-180 or MUS-165, MUS-112 and MUS-124
Additional Fees: Course fee applies.

MUS-291. Special Topics in Music. 3 Credits.
LECT 3 hrs
A broad-based review of musical topics ranging from a continuation of sight singing, ear training and keyboard harmony to technology-based courses such as Live Sound, and Music for Film.
Prerequisites: Permission of department chair.

MUS-292. Special Topics in Music. 3 Credits.
LECT 3 hrs
A broad-based review of musical topics ranging from a continuation of sight singing, ear training and keyboard harmony to technology-based courses such as Live Sound, and Music for Film.
Prerequisites: Permission of department chair.

Musical Theatre

Associate in Arts Degree

This degree program is designed to meet the basic requirements of the first two years of college programs for students who plan to graduate and transfer to a four-year college or university. The program offers a wide range of flexibility in terms of a student’s ultimate educational goals and provides adequate preparation for further study leading to professional competence in specialized fields, especially in the humanities or the social sciences.

These programs also accommodate individuals seeking two years of a liberal higher education.

The program offers options in Human Services, Humanities/International Studies, Humanities/Broadcasting Arts and Technology, Humanities/Media Studies - Journalism, Humanities/Music, Humanities/Musical Theatre and Humanities/Social Science.

For more information, visit the Musical Theatre (http://www.ccm.edu/academics/degrees/musicaltheatre.aspx) website.

Degrees

AA Musical Theatre
(P2006)

This unique major for aspiring performers is designed for students who want to excel in “the triple threat” of music, performance and dance. The program provides a foundation to transfer and earn a Bachelor of Music, Bachelor of Arts or a Bachelor of Fine Arts degree. Musical Theatre majors learn to read music and audition with enough proficiency to transfer to a four-year institution or audition for legitimate theater.

All students must pass a theory placement exam or register for MUS-011 Basic Musicianship I and MUS-176 Aural Comprehension I during the first semester. Students must receive a grade of C or better in MUS-011 Basic Musicianship I to register for MUS-117 Music Theory I. Any student who receives a grade of D in any Music Core course must repeat the course and is required to see the Music department chair before registering for the next semester.

General Education Foundation

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<thead>
<tr>
<th>Category</th>
<th>Credits</th>
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<tr>
<td>Communication</td>
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<tr>
<td>ENG-111</td>
<td>English Composition I</td>
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<td>English Composition II</td>
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<td>COM-109</td>
<td>Speech Fundamentals</td>
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<td>Development of Musical Theater</td>
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<td>MUS-114</td>
<td>American Music</td>
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<td>Rock History and Culture</td>
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<td>Jazz History and Styles</td>
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Musical Theatre Core

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<td>Music Theory I</td>
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<td>MUS-109</td>
<td>Applied Music Secondary-Voice I</td>
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<td>MUS-152</td>
<td>Piano I</td>
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<td>MUS-153</td>
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<td>MUS-145</td>
<td>Chamber Choir I</td>
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<td>MUS-146</td>
<td>Chamber Choir II</td>
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<td>MUS-147</td>
<td>Chamber Choir III</td>
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<td>MUS-148</td>
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<td>MUS-176</td>
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<td>MUS-227</td>
<td>Operetta and Musical Theatre I</td>
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<td>MUS-243</td>
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<td>DRA-110</td>
<td>Acting I</td>
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<td>DAN-146</td>
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Note: Students must be registered for at least 6 Music credits in order to enroll in Applied Music Primary I & II.
Faculty
Marielaine R. Mammon  
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M.M., Florida State University  
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B.M., Valencia Conservatory  
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B.M., Montclair State University  
A.A., County College of Morris  
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B.M., Montclair State University  
A.A., South Plains College  
A.A.S., South Plains College  
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Professor, Music  
Ph.D., New York University  
M.A., The Catholic University of America  
B.M. Manhattan School of Music  
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Courses
DRA-110. Acting I. 3 Credits.  
LECT 3 hrs  
This course concentrates on the basic principles of acting. Students are expected to apply these principles in frequent exercises, mimes, improvisations and at least four major roles.

DRA-112. Acting II. 3 Credits.  
LECT 3 hrs  
An advanced course in acting with emphasis on scene work. Students are responsible for the rehearsal, presentation and written analysis of six scenes.  
Prerequisites: DRA-110 or permission of department chair.

DRA-119. Play Production I. 3 Credits.  
LECT 3 hrs  
This course is a survey of practice in all phases of play production, including play choice, casting, directing, staging, make-up, costuming, lighting, and scenic design. Students in the class are required to audition for a role in the semester's production and/or serve on the technical staff.

DRA-120. Play Production II. 3 Credits.  
LECT 3 hrs  
This course is a survey of practice in all phases of play production, including play choice, casting, directing, staging, make-up, costuming, lighting, and scenic design. Students in the class are required to audition for a role in the semester's production and/or serve on the technical staff.  
Prerequisites: DRA-119.

DRA-229. Directing. 3 Credits.  
LECT 3 hrs  
This course is designed to acquaint students with the basic function and the importance of the director in theatre, simultaneously providing them with the opportunity for practical, creative, hands-on directing experience. Class work includes lecture, discussion, and the directing of a number of short scenes and the preparation of a professional promptbook.  
Prerequisites: DRA-114.

MUS-011. Basic Musicianship I. 0 Credits.  
LECT 3 hrs  
Requirement for Music Majors who do not pass the Music Theory I, MUS-117, placement exam. A pre-music theory course designed to develop reading skills through keyboard, sight-singing and ear-training. This course may not be used as a curriculum requirement for any major. Students must pass this course or an equivalent Music Theory placement exam to register for MUS-117 Theory I.

LECT 1 hr, LAB 2 hrs  
This course is a four-semester sequence planned to develop vocal ability and emphasizes vocal techniques, diction and sight-reading.  
Prerequisites: Permission of department chair.

MUS-110. Applied Music Secondary-Voice II. 1 Credit.  
LECT 1 hr, LAB 2 hrs  
This course is a four-semester sequence planned to develop vocal ability and emphasizes vocal techniques, diction and sight-reading.  
Prerequisites: MUS-109.

MUS-112. Introduction to Electronic Music. 3 Credits.  
LECT 3 hrs  
An exploration of the physical properties of sound, synthesizers, music recording, music arrangement, and the history of electronic music.  
Additional Fees: Course fee applies.

MUS-114. American Music. 3 Credits.  
LECT 3 hrs  
A survey of American Roots music from the 19th century to the present. Early Anglo and African influences are presented followed by 20th century folk, gospel, Hispanic, various styles of country, bluegrass and related acoustic music, various styles of blues and jazz, Cajun and zydeco, early R&B, soul and the beginnings of rock and roll.

MUS-117. Music Theory I. 3 Credits.  
LECT 2 hrs, LAB 3 hrs  
For Music Students only. This course is designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.  
Prerequisites: MUS-011 or permission of department chair For Music Students Only  
Corequisites: (MUS-125 or MUS-109) and MUS-135.
MUS-118. Music Theory II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. This course is designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.
Prerequisites: MUS-117 For Music Students Only
Corequisites: (MUS-126 or MUS-110) and MUS-136.

MUS-124. Electronic Music II. 3 Credits.
LECT 3 hrs
This course is a continuation of Introduction to Electronic Music with increased application of sound systems and MIDI systems. Students produce recorded final projects.
Prerequisites: MUS-112
Additional Fees: Course fee applies.

MUS-125. Applied Music Secondary-Piano I. 1 Credit.
LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence designed to develop keyboard facility and is required of all music emphasis students whose principal instrument is not piano.
Prerequisites: Music Majors only. Permission of department chair
Corequisites: MUS-117 and MUS-135.

MUS-126. Applied Music Secondary-Piano II. 1 Credit.
LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence designed to develop keyboard facility and is required of all music emphasis students whose principal instrument is not piano.
Prerequisites: MUS-125
Corequisites: MUS-118 and MUS-136.

MUS-127. Principles of Strings I. 1 Credit.
LECT 1 hr, LAB 2 hrs
For Music Students only. This course is designed to convey an understanding of the basic technical skills on violin studies with the first position.

MUS-128. Principles of Strings II. 1 Credit.
LECT 1 hr, LAB 2 hrs
For Music Students only. This course is designed to complete the study of basic violin, viola techniques and the understanding of the proper pedagogical approaches.
Prerequisites: MUS-127.

MUS-129. Music in Early Childhood. 3 Credits.
LECT 3 hrs
A course offering students a wide variety of meaningful experiences which provide a foundation for musical growth and understanding of early childhood music. This is a hands-on course in which students must participate.

MUS-130. Development of Musical Theater. 3 Credits.
LECT 3 hrs
This course is an examination of the elements of the musical (singing, acting, dancing, song construction, story development) and an exploration of the beginnings of the musical theater from Europe to Broadway.

MUS-135. Applied Music Primary I. 1 Credit.
LAB 1 hr
For Music emphasis students only. This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis.
Prerequisites: MUS-125 or MUS-109 and MUS-117
Additional Fees: Course fee applies.

MUS-136. Applied Music Primary II. 1 Credit.
LAB 1 hr
This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis.
Prerequisites: MUS-135
Corequisites: (MUS-126 or MUS-110) and MUS-118
Additional Fees: Course fee applies.

MUS-137. Applied Music Primary III. 1 Credit.
LAB 1 hr
This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis.
Prerequisites: MUS-136
Corequisites: (MUS-225 or MUS-209) and MUS-215
Additional Fees: Course fee applies.

MUS-138. Applied Music Primary IV. 1 Credit.
LAB 1 hr
This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis.
Prerequisites: MUS-137 For Music Students Only
Corequisites: (MUS-226 or MUS-210) and MUS-216
Additional Fees: Course fee applies.

MUS-139. Wind Ensemble I. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-140. Wind Ensemble II. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-141. Wind Ensemble III. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-142. Wind Ensemble IV. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.
MUS-143. World Music and Culture. 3 Credits.
LECT 3 hrs
A survey of world folk music including material from Asia, the Middle East, Africa, Europe, North and South America. Lectures and discussions are illustrated by recordings, DVDs and online resources. Students may be invited to contribute course subject matter by bringing personally favored music to be studied.

MUS-145. Chamber Choir I. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-146. Chamber Choir II. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-147. Chamber Choir III. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-148. Chamber Choir IV. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-150. Jazz History and Styles. 3 Credits.
LECT 3 hrs
This course is an examination of the styles and elements of this improvisational music from the 1860's to the present. This course focuses on the evolution of jazz from its roots in the blues and spirituals to the emergence of contemporary fusion and avant-garde styles.

MUS-152. Piano I. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios and simple accompaniments. Keyboard experience is not required. Course designed specifically for the non-music major.

MUS-153. Piano II. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios, and simple accompaniments. Keyboard experience is not required. Course designed specifically for the non-music major.

MUS-154. Piano III. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios and simple accompaniments. Keyboard experience is not required. Course designed specifically for the non-music major.

MUS-155. Piano IV. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios and simple accompaniments. Keyboard experience is not required. Course designed specifically for the non-music major.

MUS-159. Guitar I. 1 Credit.
LECT 1 hr, LAB 2 hrs
Open to all students. Group guitar instruction in fundamental guitar techniques. Studies include plectrum and finger style, position reading, scales and chord construction. Course designed to accommodate non-guitar music students as well as non-music majors.

MUS-160. Guitar II. 1 Credit.
LECT 1 hr, LAB 2 hrs
Open to all students. Group guitar instruction in fundamental guitar techniques. Studies include plectrum and finger style, position reading, scales and chord construction. Course designed to accommodate non-guitar music students as well as non-music majors.

MUS-163. Rock History and Culture. 3 Credits.
LECT 3 hrs
This course traces the evolution of rock music from 1955 to the present and examines the cultural impact of the music form on contemporary society.

MUS-165. Introduction to Music Recording. 3 Credits.
LECT 3 hrs
An introduction to the commercial recording studio. Students explore the equipment and techniques used in the recording of various types of contemporary music. Topics include studio acoustics and design, sound and hearing, microphones and microphone technique, recording console and signal flow, analog and digital recording systems, and signal processing. Students receive hands-on experience on both analog and digital recording equipment during in-class demonstrations and workshops.

Additional Fees: Course fee applies.

MUS-166. Introduction to Music Business. 3 Credits.
LECT 3 hrs
A general overview of all areas of music business including demo tape promotion, contracts, managers, copyright laws and publishing. Guest lecturers include prominent industry lawyers and agents.

MUS-167. Music Recording II. 3 Credits.
LECT 3 hrs
A continuation of MUS-165 Introduction to Music Recording in which students explore more complex recording situations through individual student projects. Students receive hands-on experience in session set-up, miking, use of outboard signal processing, mixing and production.

Prerequisites: MUS-165
Corequisites: MUS-180
Additional Fees: Course fee applies.
MUS-170. Symphony Orchestra I. 1 Credit.
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-171. Symphony Orchestra II. 1 Credit.
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-172. Symphony Orchestra III. 1 Credit.
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-173. Symphony Orchestra IV. 1 Credit.
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-176. Aural Comprehension I. 1 Credit.
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.

MUS-177. Aural Comprehension II. 1 Credit.
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.

MUS-178. Aural Comprehension III. 1 Credit.
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.

MUS-179. Aural Comprehension IV. 1 Credit.
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.

MUS-180. Microphone Techniques. 2 Credits.
LECT 1 hr, LAB 3 hrs
An in-depth study of the different techniques used for miking an array of instruments from woodwinds, brass and strings, to drums and electric instruments. Students study the design of dynamic and condenser microphones, special microphones used for certain instruments, sound comparison between different types of microphones and microphone placement on instruments.

MUS-182. Audio Production Techniques. 1 Credit.
LECT 1 hr
An examination of the production techniques used in the recording of contemporary and classic music. The course focuses on the development of critical listening skills, as well as the use of different recording and mixing techniques in an effort to enhance the overall production value of a recording. Students produce a sound-alike project in which they must emulate the sound of a preexisting recording.

MUS-184. Musical Theatre Production and Performance. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Musical Theatre Production and Performance offers demanding training designed to prepare students for a career in musical theatre. Students participate in all aspects of the production from technical elements to a final performance.

MUS-201. Jazz Ensemble I. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-202. Jazz Ensemble II. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-203. Jazz Ensemble III. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-204. Jazz Ensemble IV. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-209. Applied Music Secondary-Voice III. 1 Credit.
LECT 1 hr, LAB 2 hrs
A four-semester sequence planned to develop vocal ability. The course emphasizes vocal techniques, diction and sight-reading.

LECT 1 hr, LAB 2 hrs
For Music students only. A four-semester sequence planned to develop vocal ability. This course emphasizes vocal techniques, diction and sight-reading.

MUS-214. Form and Analysis. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A study of larger forms which have evolved throughout music history. Emphasis is placed on score reading of symphonies, large choral works, operas, chamber works and sonata repertoire.

MUS-215. Conducting. 1 Credit.
LECT 1 hr
An examination of the conducting techniques used in the recording of contemporary and classic music. The course focuses on the development of critical listening skills, as well as the use of different recording and mixing techniques in an effort to enhance the overall production value of a recording. Students produce a sound-alike project in which they must emulate the sound of a preexisting recording.

MUS-216. Conducting II. 1 Credit.
LECT 1 hr
An examination of the conducting techniques used in the recording of contemporary and classic music. The course focuses on the development of critical listening skills, as well as the use of different recording and mixing techniques in an effort to enhance the overall production value of a recording. Students produce a sound-alike project in which they must emulate the sound of a preexisting recording.

MUS-217. Conducting III. 1 Credit.
LECT 1 hr
An examination of the conducting techniques used in the recording of contemporary and classic music. The course focuses on the development of critical listening skills, as well as the use of different recording and mixing techniques in an effort to enhance the overall production value of a recording. Students produce a sound-alike project in which they must emulate the sound of a preexisting recording.

MUS-218. Conducting IV. 1 Credit.
LECT 1 hr
An examination of the conducting techniques used in the recording of contemporary and classic music. The course focuses on the development of critical listening skills, as well as the use of different recording and mixing techniques in an effort to enhance the overall production value of a recording. Students produce a sound-alike project in which they must emulate the sound of a preexisting recording.
MUS-215. Music Theory III. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. Designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.
Prerequisites: MUS-118 For Music Students Only
Corequisites: (MUS-225 or MUS-209) and MUS-137.

MUS-216. Music Theory IV. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. Designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.
Prerequisites: MUS-215 For Music Students Only
Corequisites: (MUS-226 or MUS-210) and MUS-138.

MUS-217. Music History and Literature to 1750. 3 Credits.
LECT 3 hrs
An in-depth study of music in Western civilization from ancient times through the Baroque period. Music from each period is discussed and analyzed.

MUS-218. Music History and Literature From 1750. 3 Credits.
LECT 3 hrs
A continuation of Music History and Literature from 1750. A study of music from the late Baroque through the Romantic period. Includes analysis of representative works.

MUS-221. Chamber Ensemble I. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged. Students must play a wind, percussion, string or keyboard instrument.

MUS-222. Chamber Ensemble II. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged. Students must play a wind, percussion, string or keyboard instrument.

MUS-223. Chamber Ensemble III. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged. Students must play a wind, percussion, string or keyboard instrument.

MUS-224. Chamber Ensemble IV. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged. Students must play a wind, percussion, string or keyboard instrument.

MUS-225. Applied Music Secondary-Piano III. 1 Credit.
LECT 1 hr, LAB 2 hrs
A four-semester sequence designed to develop keyboard facility. Required of all music emphasis students whose principal instrument is not piano.
Prerequisites: MUS-126
Corequisites: MUS-137 and MUS-215.

MUS-226. Applied Music Secondary - Piano IV. 1 Credit.
LECT 1 hr, LAB 2 hrs
For Music Students only. A four-semester sequence designed to develop keyboard facility. Required of all music emphasis students whose principal instrument is not piano.
Prerequisites: MUS-225 - Music Majors Only

MUS-227. Operetta and Musical Theatre I. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students, through rehearsal and performance, have a chance to have practical experiences with their art, i.e., staging, conducting, lighting, singing and general production work.

MUS-228. Operetta and Musical Theatre II. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students, through rehearsal and performance, have a chance to have practical experiences with their art, i.e., staging, conducting, lighting, singing and general production work.

MUS-229. Operetta and Musical Theatre III. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students, through rehearsal and performance, have a chance to have practical experiences with their art, i.e., staging, conducting, lighting, singing and general production work.

MUS-230. Operetta and Musical Theatre IV. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students, through rehearsal and performance, have a chance to have practical experiences with their art, i.e., staging, conducting, lighting, singing and general production work.

MUS-233. Independent Study in Music. 1 Credit.
LECT 1 hr
For Music Students only. This course is designed to allow students who have a specialized interest or who are pursuing a topic at an advanced level to engage in rigorous individualized study. The study must be designed by the faculty member and student and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-234. Independent Study in Music. 3 Credits.
LECT 3 hrs
For Music Students only. Independent Study in Music is designed to allow students who have a specialized interest or who are pursuing a topic at an advanced level to engage in rigorous individualized study. The study must be designed by the student and a faculty member and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.
MUS-237. Cabaret Music Theatre. 1 Credit.
LECT 3 hrs
This course in cabaret theatre considers the revue-type of theatrical production which has been popularized in productions in New York, Chicago, Los Angeles and on many college campuses throughout the country. A cabaret musical revue is the final project.

MUS-238. Cabaret Music Theatre II. 1 Credit.
LECT 4 hrs
This course in cabaret theatre considers the revue-type of theatrical production which has been popularized in productions in New York, Chicago, Los Angeles and on many college campuses throughout the country. A cabaret musical revue is the final project.

MUS-240. Jazz Guitar. 1 Credit.
LECT 1 hr, LAB 2 hrs
This course is recommended for guitar majors, jazz ensemble guitarists or those with equivalent skills. It covers harmonic and melodic aspects of jazz improvisation in a solo or ensemble setting. Topics include modes, arpeggios and chord structure, and inversions of seventh chords in all keys. Students must already have a working knowledge of the guitar, i.e., bar chords, major/ minor scales, some experience with notes and chord symbols. While this is not a class for beginner guitarists, beginner jazz players are welcome.

MUS-243. Musical Theatre Auditions. 3 Credits.
LECT 3 hrs
This course introduces the students to the preliminary work involved in the techniques of auditioning. The protocol of auditioning, including resume, agents, casting directors, scene reading and actual vocal selections, are covered in class.

MUS-244. Independent Study in Electronic Music I. 1 Credit.
LECT 1 hr
This course is an exploration of analog synthesis techniques and devices designed to allow the student to pursue specialized topics to an advanced level. The study is project oriented.
Prerequisites: MUS-112, MUS-124
Additional Fees: Course fee applies.

MUS-245. Independent Study in Electronic Music II. 1 Credit.
LECT 1 hr
This course is an exploration of the computer-based music workstation and digital technology designed to allow the student to pursue specialized topics to an advanced level. The study is project oriented.
Prerequisites: MUS-112, MUS-124, MUS-244
Additional Fees: Course fee applies.

MUS-248. Enjoyment of Music. 3 Credits.
LECT 3 hrs
Emphasis is placed on experiencing, discussing and realizing various musical styles throughout history to the present time. All music from the ancient to even today's most popular styles are covered, but with specific attention given to how to listen and appreciate each musical genre. Students may even be invited to contribute to the course content by bringing personally favored music to be studied.

MUS-249. Practicum. 1 Credit.
LECT 1 hr
For Music Students only. Weekly lessons in a one-to-one or small group arrangement with a faculty member prepares the student in the techniques of professional music recording. Appropriate projects are assigned to help the individual student develop his or her recording skills in various situations and with various types of equipment. A finished project is produced by the student and judged in a jury session.
Prerequisites: MUS-165, MUS-167, MUS-180, MUS-182, MUS-259
Additional Fees: Course fee applies.

MUS-250. Internship in Music Recording. 1 Credit.
LECT 1 hr
For Music students only. This course assigns the student to experience the actual working conditions in an established music recording studio facility. With the cooperation of the facility director, appropriate work projects are assigned and the student judged on his or her level of knowledge, expertise and confidence in the various aspects of the music recording business.
Prerequisites: MUS-165, MUS-167, MUS-180, MUS-182, MUS-259
Additional Fees: Course fee applies.

MUS-253. Independent Study in Music II. 1 Credit.
LECT 1 hr
For Music Emphasis students only. Independent Study in Music is designed to allow the student who has a specialized interest or who is pursuing a topic at an advanced level to engage in rigorous individualized study. The study plan must be designed by the student and a faculty member and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-254. Independent Study in Music III. 1 Credit.
LECT 1 hr
For Music Emphasis students only. Independent Study in Music is designed to allow the student who has a specialized interest or who is pursuing a topic at an advanced level to engage in rigorous individualized study. The study plan must be designed by the student and a faculty member and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-258. Contemporary Music: 20th-21st Century. 3 Credits.
LECT 3 hrs
A study of the musical trends, idioms, styles and aesthetics of the Classical Music, Jazz, Rock, Latin Music, and Film Music of the 20th and 21st centuries. In addition to the study of the literature, students will be broadly educated on the fundamental elements of music including melody, harmony, counterpoint, musical forms, texture, and orchestration. Students may be invited to contribute subject matter by bringing personally favored music of the 20th and 21st centuries to be studied, analyzed, and discussed.
MUS-259. Hard Disc Recording. 2 Credits.
LECT 1 hr, LAB 3 hrs
Students learn about the operation and application of AVID Pro Tools hard disk recording and editing software. Topics include signal flow and routing, editing, fades and cross fades, digital signal processing, mixing, and automation.
Prerequisites: MUS-165, MUS-167 and MUS-180 or MUS-165, MUS-112 and MUS-124
Additional Fees: Course fee applies.

MUS-291. Special Topics in Music. 3 Credits.
LECT 3 hrs
A broad-based review of musical topics ranging from a continuation of sight singing, ear training and keyboard harmony to technology-based courses such as Live Sound, and Music for Film.
Prerequisites: Permission of department chair.

MUS-292. Special Topics in Music. 3 Credits.
LECT 3 hrs
A broad-based review of musical topics ranging from a continuation of sight singing, ear training and keyboard harmony to technology-based courses such as Live Sound, and Music for Film.
Prerequisites: Permission of department chair.

Nursing

Associate in Applied Science Degree
Graduates of the program are granted an Associate in Applied Science degree and attain the academic requirements for application for the National Council Licensure Examination for Registered Nurses (NCLEX-RN). The program offers a balance of general education and nursing courses to prepare students for Registered Nurse positions. These graduates have a significant role in the delivery of nursing care in hospitals, long-term care facilities, community agencies and other healthcare institutions.

Nursing Program Flyers are available from the Office of Admissions or the Nursing Department or visit the County College of Morris (CCM) website at http://www.ccm.edu/academics/divdep/hns/nursing.aspx.

Students who wish to pursue admittance into the Nursing Program should apply to CCM and list Nursing as their requested major. Upon acceptance into the college, students are placed in the pre-professional phase and take all of the general education and science courses required for the Nursing major. Admission into the professional phase is not guaranteed once pre-professional course work is completed.

Students must file a Fundamentals of Nursing Professional Phase Application Form to be considered for acceptance into the professional phase. Acceptance into the professional phase is competitive. Student’s GPA must be 2.5 or higher, with a minimum grade of ‘C’ or better in all courses. The granting of a seat is based on a point system assigning points for Science and English grades.

All students accepted into the professional phase (clinical) must meet additional requirements as set forth by the healthcare facilities that are utilized to provide clinical experience. Established technical standards that are the minimum fundamental abilities necessary to perform the activities requisite to obtaining credit for education and subsequent entry-level employment in the nursing profession must be met. In addition, students will undergo a Criminal History Background Check and Urine Drug Screening. Students must obtain malpractice insurance at their own expense, carry personal health insurance that provides coverage for accident and sickness, obtain health clearance, including flu vaccination, and be CPR certified as a healthcare provider by the American Heart Association. All Nursing students are required to wear the County College of Morris Nursing uniform when in the clinical setting. Uniforms are obtained at the student’s expense. Transportation to the clinical facility must be provided by the individual student.

Several study tracks have been designed to accommodate individual learning needs. Please see the Nursing Program Flyer and the CCM website for an explanation of the study tracks. The curriculum requirements can be completed in a minimum of six sequential semesters (excluding summer) of study. For the professional (clinical) phase, a day class is admitted in the Fall Semester, and an evening class is admitted in the Spring Semester. The Fundamentals of Nursing Professional Phase Application Form must be filed in the Office of Records and Registration by September 15 for Spring Semester and March 1 for Fall Semester.

For more information, including the Nursing Program Flyer, visit the Nursing (http://www.ccm.edu/academics/divdep/hns/nursing) website.

Articulation Agreements
Students should check with the Transfer Office about articulation agreements with this program.

Accreditation
The Nursing Program at the County College of Morris is fully accredited and approved by the New Jersey Board of Nursing. This accreditation qualifies graduates of the Nursing Program to sit for the National Council Licensure Examination for Registered Nurses (NCLEX-RN). The program is additionally accredited by the Accreditation Commission for Education in Nursing, Inc.

State of New Jersey Division of Consumer Affairs
New Jersey Board of Nursing
124 Halsey Street
Newark, New Jersey 07101
973-504-6430

Accreditation Commission for Education in Nursing, Inc.
3343 Peachtree Road, NE, Suite 850
Atlanta, Georgia 30326
404-975-5000
www.acenursing.org (http://www.acenursing.org)

Degrees

AAS Nursing
(P3800)

General Education Foundation
Communication 6
ENG-111 English Composition I
ENG-112 English Composition II
Math-Science-Technology 3/4
Nursing

CHM-117  Introductory Chemistry Lecture
or CHM-12  General Chemistry I - Lecture
Technology  0/1
Social Science or Humanities  3
Choose from General Education course list  3
General Education Electives  8
BIO-101  Anatomy and Physiology I
BIO-102  Anatomy and Physiology II
General Education Foundation Credits  20
Nursing Core
Health & Wellness Elective  2
PSY-113  General Psychology  3
BIO-215  Microbiology  4
NUR-105  Foundations of Nursing  1
NUR-121  Fundamentals of Nursing  6
NUR-123  Basic Medical/Surgical Nursing  10
NUR-213  Maternal-Child/Mental Health Nursing  10
NUR-214  Advanced Medical/Surgical Nursing  10
NUR-224  Nursing Colloquium  1
Nursing Core Credits  47
Total Credits  67

Prerequisites and Co-requisites
NUR-121  Fundamentals of Nursing  6
Prerequisite: Permission of Department Chair
Pre/Co-requisite: BIO-101
Co-requisite: NUR-105
NUR-123  Basic Medical/Surgical Nursing  10
Prerequisite: NUR-121, BIO-101
Pre/Co-requisite: BIO-102, CHM-117 or CHM-125
NUR-213  Maternal-Child/Mental Health Nursing  3-10
or CHM-125  General Chemistry I - Lecture
Prerequisite: NUR-123, BIO-102, CHM-117 or CHM-125
Pre/Co-requisite: BIO-215
NUR-214  Advanced Medical/Surgical Nursing  10
Prerequisite: NUR-213, BIO-215
Co-requisite: NUR-224

Due to continual program revisions mandated by the accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisors when selecting courses.

Science courses completed by students prior to entering Fundamentals of Nursing must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

A statewide criminal record search through the New Jersey State Police and a National Criminal History Database Search are performed on all students upon initial acceptance into the professional phase of the program. If the test is positive for illegal substances, admission into the professional phase of the program is denied. In addition, illegal use of prescribed substances will result in denial of admission into the professional phase of the program.

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Assistant Professor, Nursing
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Suzanne Gilmore, R.N.
Assistant Chairperson, Associate Professor, Nursing
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Diploma, Reading Hospital School of Nursing
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Due to continual program revisions mandated by the accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisors when selecting courses.

Science courses completed by students prior to entering Fundamentals of Nursing must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

A statewide criminal record search through the New Jersey State Police and a National Criminal History Database Search are performed on all students upon initial acceptance into the professional phase of the program. If a record is found as a result of the criminal record searches, admission into the professional phase of the program may be denied. If there is no record upon admission but subsequent searches result in a record found, the student may be dismissed from the program.

When a graduate applies for licensure as a nurse in New Jersey, the New Jersey Board of Nursing requires a Criminal History Background Check. If the Criminal History Background Check reveals a criminal conviction, a review of the application by the Board of Nursing is required.

A Urine Drug Screening is performed on all students upon initial acceptance into the professional phase of the program. If the test is positive for illegal substances, admission into the professional phase of the program is denied. In addition, illegal use of prescribed substances will result in denial of admission into the professional phase of the program.
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M. Celeste Wayne, R.N., CNE
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MSN, Columbia University
BSN, Colegio de Sta. Isabel School of Nursing
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Courses

NUR-012. Nursing Transition: Advanced Placement Status. 0 Credits.
LECT 1 hr
This is a mandatory pre-requisite course required of all students granted advanced placement, prior to starting NUR-123, Basic Medical/Surgical Nursing. Emphasis is placed on the conceptual framework of the CCM Nursing program, use of the nursing process, communication skills, ethical and legal issues, and the role of the registered professional nurse. Physical assessment, patient safety, dosage calculation and medication administration are also reviewed and tested in a simulated laboratory environment. This course is a mandatory component in the advanced placement process and is designed to assess readiness and facilitate a smooth transition for the student.
Prerequisites: Advanced Placement students must meet admission criteria established by department.

NUR-105. Foundations of Nursing. 1 Credit.
LECT 1 hr
This course provides the foundational concepts on which nursing education and practice are built. Students apply basic knowledge of these concepts as they begin to learn the practice of nursing. Historical, sociocultural, ethical and legal tenets are studied. Students gain an appreciation for the profession of nursing as well as awareness of the responsibility and accountability expected. This course is offered as a traditional face-to-face, hybrid online or online course.
Prerequisites: Acceptance into NUR-121 and permission of department chair
Corequisites: NUR-121 and BIO-101.

NUR-106. Medical Terminology. 2 Credits.
LECT 2 hrs
This course is an online class with assignments and quizzes taken online. Mid-term and final exams are taken on campus at CCM. The course is open to any student interested in learning the basic construction of medical words. Students acquire a solid foundation to aid in retention of medical vocabulary and facilitate understanding of new terms. Prefixes, suffixes and root words are introduced in a logical manner. A brief outline of the anatomy and physiology of each body system is presented, followed by the related pathophysiology. Included are terms describing diseases, disorders and related surgical, diagnostic and treatment terms. Students become proficient in word building and recognition of medical terms as they relate to anatomy and physiology. Students become familiar with terminology relevant to pharmacology as well as psychiatry.

NUR-121. Fundamentals of Nursing. 6 Credits.
LECT 3 hrs, LAB 3 hrs, CLIN 6 hrs
This course serves as the foundation for all subsequent nursing courses. The nursing process is introduced with concentration on the assessment of man's basic health needs, which are identified as psychosocial, elimination, rest and activity, safe environment, oxygen and nutrition. The development and use of fundamental nursing skills and interventions are included. Concepts of clinical decision-making skills are introduced. Learning experiences are planned, using the classroom, campus laboratory and community clinical facilities.
Prerequisites: Permission of department chair
Corequisites: BIO-101 and NUR-105
Additional Fees: Course fee applies.

NUR-123. Basic Medical/Surgical Nursing. 10 Credits.
LECT 6 hrs, CLIN 12 hrs
This course focuses on the study of adults with a variety of commonly occurring medical-surgical problems that interfere with the ability to meet basic health needs. Students utilize the nursing process to prioritize and provide appropriate nursing interventions for patients with higher acuity. Students use assessment skills to develop appropriate nursing diagnoses, outcomes and plans of care. Related theory, therapeutic communication skills and nursing care skills are employed in the provision of patient care in clinical facilities. Clinical decision-making skills are further developed.
Prerequisites: BIO-101, NUR-105, NUR-121 and permission of department chair
Corequisites: BIO-102 and CHM-117 or CHM-125
Additional Fees: Course fee applies.
NUR-213. Maternal-Child/Mental Health Nursing. 10 Credits.  
LECT 6 hrs, CLIN 12 hrs  
The focus of this course shifts from the study of the adult to that of the family and community. Concentration is placed on the health needs/problems of psychiatric and maternal/child patients. Utilization of the nursing process with special populations to address patient problems is provided across a range of healthcare settings. Knowledge of community, psychiatric, and maternal/child nursing is developed through clinical decision-making skills, group projects, case studies and clinical experiences.  
Prerequisites: NUR-123, BIO-101, BIO-102, CHM-117 or CHM-125 and permission of department chair  
Corequisites: BIO-215  
Additional Fees: Course fee applies.

NUR-214. Advanced Medical/Surgical Nursing. 10 Credits.  
LECT 6 hrs, CLIN 12 hrs  
This course provides students with the ability to further develop and apply clinical decision-making skills to patient care. The PERSON approach is utilized to provide care for patients with health problems resulting when the ability to meet one or more health needs is severely compromised. Evaluation of the outcomes of care given is a significant focus. Appropriate learning experiences are planned involving patients with multiple acute and chronic problems using the classroom, campus laboratory and various health care facilities.  
Prerequisites: NUR-213, BIO-215 and permission of department chair  
Corequisites: NUR-224  
Additional Fees: Course fee applies.

NUR-220. Pharmacology for the Health Professional. 3 Credits.  
LECT 3 hrs  
This course is an online class with assignments and quizzes taken online. Midterm and final exams are taken on campus at CCM. The course is organized by drug classifications and emphasizes current usage, dosage recommendations, interactions, and implications for illness prevention and management. This course is useful for any professional who administers medications or who works with clients for whom medications are a treatment modality.

NUR-224. Nursing Colloquium. 1 Credit.  
LECT 1 hr  
This course involves an examination of selected topics and issues that students in the final semester of the professional phase of the Nursing Program will experience as they transition from the role of student nurse to graduate nurse. Topics concerning professional development and preparation for the workplace are addressed. Ethical, legal and professional issues that impact the practice of the graduate nurse are examined.  
Prerequisites: NUR-213 and permission of department chair  
Corequisites: NUR-214.

Occupational Therapy Assistant

Associate in Science Degree

This program’s mission is to prepare Occupational Therapy Assistants (OTA) to be professionals who contribute to the health and well-being of individuals. Disease, injury, depression, stroke, advanced age and other challenges prevent people from participating independently in activities of daily living. An Occupational Therapy Assistant makes it possible for these people to achieve independence and improve their quality of life. This degree prepares students for employment in healthcare, educational and other community settings.

Graduates of an accredited OTA Program are eligible to sit for a national certification exam; and once certified, the graduate can obtain state licensure to practice as a Certified Occupational Therapy Assistant (COTA) in New Jersey. This is a joint Associate in Science (A.S.) degree program in Occupational Therapy Assistant with the County College of Morris (CCM) and Rutgers, the State University of New Jersey. The curriculum includes a total of 74 credits. Thirty-two (32) General Education credits are completed at CCM and 42 additional credits of professional/clinical coursework is taken at Rutgers. Students completing the 32 required credits at CCM must complete a separate application into Rutgers at the Scotch Plains Campus to complete the 74 credits required for the A.S. in the Occupational Therapy Assistant Program. This is a highly competitive program. Students from CCM will be competing for admission to Rutgers with students from other institutions. Rutgers accepts only 20 students annually into the fall full-time program and only 10 students into the spring part-time program. Admission into Rutgers is based on: a minimum GPA of 2.5 (A GPA of 3.0 or better is strongly recommended.), two (2) Letters of Recommendation, 20 hours of OT Observation, an interview process, and an on-site writing component.

The Occupational Therapy Assistant (OTA) Program at Rutgers is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 4720 Montgomery Lane, Suite 200 Bethesda, MD 20814-3449. ACOTE’s telephone number c/o AOTA is 301-652-AOTA and its web address is www.acoteonline.org/ (http://www.acoteonline.org). For more information, visit the Occupational Therapy Assistant (http://www.ccm.edu/academics/degrees/ota.aspx) website.

Degrees

AS Occupational Therapy Assistant (P2155)

General Education Foundation

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG-111 English Composition I</td>
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<tr>
<td>ENG-112 English Composition II</td>
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<tr>
<td>BIO-101 Anatomy and Physiology I</td>
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<tr>
<td>BIO-102 Anatomy and Physiology II</td>
<td>3</td>
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<tr>
<td>MAT-124 Statistics or MAT-110 College Algebra</td>
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<td>PHL-114 Ethics</td>
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| Social Science | 3 |
| PSY-113 General Psychology | |

| Humanities | 3 |

| Social Science or Humanities | 3 |

Additional Fees: Course fee applies.

For more information, visit the Occupational Therapy Assistant website.
Personal Trainer

Certificate of Achievement

This program provides entry-level training to those interested in a career as a personal trainer in the fitness industry. Students gain background information about fitness and health sufficient to take one of several Personal Trainer certification examinations offered by various national organizations such as the American Council on Exercise, the American College of Sports Medicine, the National Academy of Sports Medicine, the National Strength and Conditioning Association and the Aerobic Fitness Association of America. The curriculum follows the American College of Sports Medicine guidelines.

For more information, visit the Personal Trainer (http://www.ccm.edu/academics/degrees/personaltrain.aspx) website.

Certificates of Achievement

Certificate of Achievement - Personal Trainer

(P0950)

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>HED-115</td>
<td>Personal and Family Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>HES-127</td>
<td>Weight Training</td>
<td>1</td>
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<td>HES-126</td>
<td>Personal Fitness</td>
<td>1</td>
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<td>HES-107</td>
<td>Program Design and Implementation</td>
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<td>HED-295</td>
<td>First Aid and Emergency Care</td>
<td>3</td>
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<td>HED-283</td>
<td>Cardiopulmonary Resuscitation</td>
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</tr>
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<td>HES-106</td>
<td>Personal Trainer Field Experience</td>
<td>1</td>
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</table>

The Personal Trainer Certificate of Achievement is awarded to students who achieve grades of C or better in all courses in the program.

Courses

HED-112. Drugs, Society and Human Behavior. 3 Credits.
LECT 3 hrs
This course examines the effects drugs have on the individual and society, taking a critical look at the most recent scientific data drawn from medical, sociological and student research. Topics include, but are not limited to, neurophysiology, pharmacology and the demographics of drug use, legal issues, and treatment and prevention programs. Different types of drugs are examined.

Additional Fees: Course fee applies.

HED-115. Personal and Family Nutrition. 3 Credits.
LECT 3 hrs
In this course, students study the relationships of nutrition and eating patterns to one's health, nutritive value and composition of foods, metabolism, functions and requirements of nutrients throughout life, and essentials of an adequate diet. Emphasis is placed on the practical application of nutrition concepts in everyday life.

Additional Fees: Course fee applies.

HED-128. Lifetime Wellness. 2 Credits.
LECT 1 hr, LAB 2 hrs
This course is designed to provide students with the knowledge and skills necessary to make intelligent decisions about health and wellness. Topics include nutrition and weight management, substance abuse, stress management, fitness, cardiovascular disease and sexually transmitted diseases. Students engage in personally selected programs to improve wellness.

Additional Fees: Course fee applies.

HED-130. Mind-Body Health. 3 Credits.
LECT 3 hrs
This course explores the relationship between the mind and the body. Emphasis is placed on relaxation, meditation, and yoga to enable students to reach a state of peace, calmness and self-awareness. Students explore the integration of the entire self in order to achieve an understanding and an awareness of their own selves and take control of their wellness.

Additional Fees: Course fee applies.

HED-132. Stress Management. 1 Credit.
LECT 1 hr
This course provides students with an understanding of the basic principles of the stress response, the General Adaptation Syndrome, stressors and stress management. Students participate in physical and cognitive exercises designed to reduce stress.

Additional Fees: Course fee applies.

HED-133. Weight Management. 1 Credit.
LECT 1 hr
This course covers information about lifetime weight management. The role of diet, exercise, behavior modification and stress management and their relationship to weight management are emphasized. Students analyze diets, set goals and apply a weight management program to themselves throughout the course.
HED-283. Cardiopulmonary Resuscitation. 1 Credit.
LAB 2 hrs
This course is taught according to American Heart Association (AHA) guidelines. Students learn about heart disease prevention, early recognition of heart attack and stroke, early access to Emergency Medical Services, and recognition and treatment for respiratory arrest, cardiac arrest and obstructed airway emergencies. Students who successfully complete the requirements will receive an AHA CPR card (BLS for Healthcare Provider CPR). This course is available through the Division of Corporate and Community Programs. Students enrolled in the majors of Nursing, Radiography, Respiratory Therapy, Exercise Science, and Early Childhood Education may request that they receive 1 credit toward their HED/HES requirement. Students must present a valid American Heart Association CPR card (BLS for Healthcare Provider CPR) to the Office of Records and Registration to receive credit. Course fees do not represent income to the AHA or any of its components.
**Additional Fees:** Course fee applies.

HED-286. Personal Health and Wellness. 3 Credits.
LECT 3 hrs
This course examines current health and wellness topics that have an impact on the individual in today’s society. Emphasis is on a wellness approach, examining the physical, emotional, intellectual, social and spiritual dimensions of health. Students engage in evaluations of their own wellness behaviors and investigate in detail at least one health issue of personal significance. (There is no substitution for this course in programs that require it for degree completion.)
**Additional Fees:** Course fee applies.

HED-293. Special Topics in Health Education. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Health Education. Topics may differ each time the course is offered. Students should consult the department chair for further information.
**Prerequisites:** A three-credit introductory course in Health Education.

HED-294. Special Topics in Health Education. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Health Education. Topics may differ each time the course is offered. Students should consult the department chair for further information.
**Prerequisites:** A three-credit introductory course in Health Education.

HED-295. First Aid and Emergency Care. 3 Credits.
LECT 3 hrs
A basic course in first aid which acquaints students with information about prevention of accident and injury and about emergency assessment, recognition and treatment of trauma and sudden illnesses. Upon successful completion of the requirements, the student will receive First Aid certification.
**Additional Fees:** Course fee applies.

HES-104. Foundations of Personal Training. 3 Credits.
LECT 3 hrs
This comprehensive class is ideal for anyone preparing for the ACSM, NASM or ACE Personal Trainer exam and those who want to pursue a career in personal training. Course content includes anatomy, applied exercise science, kinesiology, professional roles and responsibilities. ACSM course curriculum is followed. Open to Personal Trainer Certificate of Achievement (Curriculum 0950) students only.
**Prerequisites:** Permission of department chair
**Additional Fees:** Course fee applies.

HES-106. Personal Trainer Field Experience. 1 Credit.
COOP 1 hr
This course provides Personal Trainer Certificate of Achievement students with the opportunity to work with clients in the field. Students are linked with professionals in health clubs and commercial and corporate fitness centers who mentor their progress. Arrangements for this field experience must be coordinated through the field experience instructor. Students must accomplish a minimum of 45 hours in one semester in their field experience and write a report of the experience.
**Prerequisites:** HES-104, open to Personal Trainer Certificate of Achievement students only.

HES-107. Program Design and Implementation. 3 Credits.
LECT 3 hrs
This course provides students with the practical application of current testing procedures and instrumentation used in exercise testing. Students learn to perform and interpret the basic measurement protocols for cardiorespiratory endurance, muscular strength and endurance, flexibility, body composition, and blood pressure. Students learn the principles related to exercise prescription, develop the necessary skills to design and implement training programs as they relate to the components of fitness. Safeguards and effectiveness for all fitness levels are addressed.
**Prerequisites:** HES-104, open to Personal Trainer Certificate of Achievement students only
**Additional Fees:** Course fee applies.

HES-111. Introduction to Exercise Science. 3 Credits.
LECT 3 hrs
This course is recommended in the first semester. This is an introductory course to acquaint students with the development and structure of the field of exercise science. The current scientific development of the field is stressed, with emphasis on basic exercise physiology, health and fitness. Open to Exercise Science majors only.
**Prerequisites:** Permission of department chair
**Additional Fees:** Course fee applies.

HES-125. Stretching and Strengthening. 1 Credit.
LAB 2 hrs
This course provides a thorough presentation of exercises for improving strength and flexibility without the need for special equipment. Emphasis is on exercising safely and learning the importance of strength and flexibility in conditioning, injury prevention and rehabilitation. It is designed to give students the tools with which to create a personal exercise program. Students need to supply their own exercise mats.
**Additional Fees:** Course fee applies.
HES-126. Personal Fitness. 1 Credit.
LAB 2 hrs
Students design and practice an exercise program that develops selected components of physical fitness. Each student undertakes assessments of various components of fitness.
Additional Fees: Course fee applies.

HES-127. Weight Training. 1 Credit.
LAB 2 hrs
Basic principles of resistance (weight) training are taught, emphasizing training for general conditioning. Training programs for major muscle groups are developed and practiced. Equipment used includes free weights and some machines.
Additional Fees: Course fee applies.

HES-128. Yoga. 1 Credit.
LAB 2 hrs
This is an introductory course in yoga covering basic hatha yoga postures and exercises. Breathing techniques, flexibility and muscular endurance are enhanced. The course helps relieve stress and develop a sense of peacefulness and tranquility while improving fitness. Students need to supply their own exercise mats.
Additional Fees: Course fee applies.

HES-129. Self-Defense. 1 Credit.
LAB 2 hrs
This course provides students with the knowledge and skills to judge potential threats and react swiftly to defend themselves. Social and psychological effects of violence are discussed, along with legal issues of self defense. The basic techniques of Tae Kwon-Do, Ju-Jitsu and Aikido are introduced for everyday usage. A martial arts attitude is developed.
Additional Fees: Course fee applies.

HES-130. Tai Chi. 1 Credit.
LAB 2 hrs
Tai Chi is a low-impact form of oriental exercise that increases energy, balance and overall health. Total mind-body interaction is emphasized. This course is a gentle means to contribute to overall health and fitness.
Additional Fees: Course fee applies.

HES-131. Pilates. 1 Credit.
LAB 2 hrs
Pilates is a form of exercise that conditions the muscles through specific strength exercises without creating bulk. Based on the system introduced by Joseph Pilates over 70 years ago, exercises are done on both the mat and machines. Emphasis is on the core strength and flexibility of the abdomen and back, as well as other major body areas. Pilates is an exercise system that also concentrates on mind-body connection and correct postural alignment to gain optimal health and fitness. Students need to supply their own exercise mats.
Additional Fees: Course fee applies.

HES-132. Cardio Conditioning. 1 Credit.
LAB 2 hrs
This course provides the student with the underlying principles of cardiovascular fitness and the opportunity to participate in activities designed to improve cardiovascular fitness, firm muscles, reduce fat and cope with stress.
Additional Fees: Course fee applies.

HES-141. Personal Challenge I. 1 Credit.
LAB 2 hrs
This activity course focuses on the importance of reaching beyond the individual and utilizing group resources to solve problems through trust, teamwork, communications, self-esteem building, group problem-solving skills, decision making and fun. Students execute safety a series of adventure activities involving wall climbing, rope hanging, game playing and cable walking in order to enable the group to cross real and imaginary boundaries. All activities are individualized so that any student may successfully participate. Taught off-campus.
Additional Fees: Course fee applies.

HES-162. Basic Swimming. 1 Credit.
LAB 2 hrs
This course is designed for the non-swimmer or beginner swimmer who has had little or no instructional experience and who may feel uncomfortable in the water. Through this course, one gains basic swimming and diving skills progressing from shallow to deepwater swimming. The National American Red Cross Swimming Levels I-III is covered.
Additional Fees: Course fee applies.

HES-182. Golf I. 1 Credit.
LAB 2 hrs
A beginner's study and practice of the fundamental skills and basic rules of the game of golf. Topics include the make-up of the course, the grip, swing and stance, the equipment, and the rules. A portion of the course is held off campus at local golf facilities.

HES-186. Badminton. 1 Credit.
LAB 2 hrs
A beginning course which introduces the student to the basic strokes, rules and fundamental strategies of the game of badminton. Emphasis is placed on the utilization of newly acquired skills in game situations.
Additional Fees: Course fee applies.

HES-187. Volleyball. 1 Credit.
LAB 2 hrs
This course develops techniques, skills and strategies of volleyball. Emphasis is on the development of the basic skills essential for success and enjoyment.

HES-211. Kinesiology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course emphasizes the analysis of the principles of movement through human anatomical design. Major joints of the body, their actions and the muscles that do those actions are stressed. Application to physical exercise is stressed in lab work on strength, endurance and potential motion of major joints.
Prerequisites: BIO-101
Additional Fees: Course fee applies.
HES-212. Exercise Physiology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course includes the study of human responses and adaptations to exercise of varying levels of stress and intensity. Major topics include bioenergetics, the physiology of the circulatory, respiratory, muscular and nervous systems as they apply to exercise, and the underlying physiological basis of fitness. Laboratory experiences illustrate practical application of theoretical content with hands-on experiences to measure and apply what is learned in the lecture component of the course. 
**Prerequisites:** BIO-101, BIO-102 and HES-111, open to Exercise Science majors only
**Additional Fees:** Course fee applies.

HES-213. Exercise Measurement and Prescription. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course stresses the appropriate measurement of various aspects of human exercise. Measurement of body composition, cardiovascular efficiency, muscular strength and endurance and other physiological parameters are taught and practiced. Students learn how to develop individualized and properly designed exercise prescriptions for adults, including special populations.
**Prerequisites:** HES-212 (minimum grade of C) Open to Exercise Science majors only
**Additional Fees:** Course fee applies.

HES-291. Special Topics in Exercise Science. 1 Credit.
LAB 2 hrs
An examination of selected topics or issues in Exercise Science. Topics may differ each time the course is offered. Students should consult the department chair for further information.
**Prerequisites:** An introductory course in Exercise Science.

HES-292. Special Topics in Exercise Science. 1 Credit.
LAB 2 hrs
An examination of selected topics or issues in Exercise Science. Topics may differ each time the course is offered. Students should consult the department chair for further information.
**Prerequisites:** HES-111.

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**Photography Technology**

**Associate in Applied Science Degree**

The Photography Technology program provides graduates with entry-level employment skills in the rapidly changing professional photography field. Following a foundation year of basic photography, digital photography and general education, the second year includes specialized courses in lighting, post production techniques and color management. The emphasis is on hands-on experience to develop both the creative ability and the technical skills essential to photography careers. The Photography Technology degree has a highly successful transfer rate to regional and national four-year colleges and universities.

For more information, visit the Photography Technology (http://www.ccm.edu/academics/degrees/phototech.aspx) website.

**Degrees**

**AAS Photography Technology**
(P3550)

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**General Education Foundation**

<table>
<thead>
<tr>
<th>Category</th>
<th>Credit Hours</th>
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<tr>
<td>Communication</td>
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<tr>
<td>ENG-111  English Composition I</td>
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<td>ENG-112  English Composition II</td>
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<td>Math-Science-Technology</td>
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<td>Technology (0/1 CR)</td>
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<td>General Education Courses</td>
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<tr>
<td>PHO-113  History of Photography</td>
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<td>General Education Electives (6 CR)</td>
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**Photography Technology Core**

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<tr>
<td>PHO-116</td>
<td>Photography II</td>
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<td>PHO-119</td>
<td>Contemporary Photography</td>
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<td>PHO-114</td>
<td>Photographic Processes</td>
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<td>PHO-117</td>
<td>Color Photography I</td>
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<td>PHO-204</td>
<td>Digital Imaging I</td>
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<td>PHO-213</td>
<td>Documentary Photography</td>
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<td>PHO-216</td>
<td>Studio Lighting I</td>
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<td>PHO-224</td>
<td>Digital Imaging II</td>
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<td>PHO-227</td>
<td>Professional Studio Photography</td>
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**Total Credits** 64-66

**Faculty**

Nieves Gruneiro-Roadcap  
Assistant Professor, Photography Technology  
M.F.A., Mason Gross School of the Arts, Rutgers University  
B.F.A., New Jersey City University  
EH 113  973-328-5435  ngruneiro@ccm.edu

Hrvoje Slovenc  
Assistant Professor, Photography Technology  
M.F.A., Yale School of Art  
B.A., The City College of the CUNY  
EH 110  973-328-5440  hsolvenc@ccm.edu
Courses

PHO-110. Photography Appreciation. 3 Credits.
LECT 3 hrs
Through lectures, discussions, written analysis, projects and presentations, the student will gain an understanding and appreciation of the global and cultural impact of photography. Students focus on the formal development of photography and the role it plays in social and cultural production, gaining insight into how photographs produce visual representations across cultures and reflect social values. Students learn the fundamental visual elements of photographic form, critical skills necessary to interpret a variety of visual representations and to enhance visual literacy. Note: This is a lecture based course, not a studio art course and is not acceptable for majors of Photography, Graphic Design, or Fine Arts.

PHO-113. History of Photography. 3 Credits.
LECT 3 hrs
A survey of photographic history from its origin to the present day. Topics include the invention of photography, the photograph as document, the photograph as art, the natural landscape, the portrait, color photography and contemporary photography. Course requirements may include extensive use of Blackboard and other online components.

PHO-114. Photographic Processes. 3 Credits.
LECT 2 hrs, LAB 2 hrs
A studio course covering historical, traditional and digital photographic processes. The range topics for this course will include basic scientific principles regarding optics, the physics of light, camera design and reproduction problems. Lectures will identify and explain topics related to course content. Studio exercises will develop and reinforce the theoretical knowledge through practice in the shooting studio or darkroom. Students will work on a number of projects individually and in groups, during class time and open lab hours. This lab/studio environment will help students understand the course material through practice, exploration, and problem solving situations. The course will prepare students to apply scientific knowledge in an effective way by completing a summary project. Course requirements may include extensive use of Blackboard and other online components, including but not limited to, photo sharing sites.
Prerequisites: PHO-115 and MAT-007.

PHO-115. Photography I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A beginning photography studio course emphasizing the fundamentals of photographic language, digital camera systems and creative visual problem solving. Students will become familiar with the concept of the digital darkroom using image editing photographic production tools. Course requirements may include extensive use of Blackboard and other online platforms. The current software programs used in this course are Adobe Lightroom and Photoshop, subject to change based on technology advancement and availability. Note: Each semester there will be a section of PHO-115 designated for Photography Technology majors which will require that the student own or have unrestricted access to both film and digital 35mm cameras. No point and shoot cameras are allowed in this course section.
Additional Fees: Course fee applies.

PHO-116. Photography II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
An intermediate black and white photography course introducing the student to medium and large format camera systems in both commercial and fine art applications. Darkroom and digital technologies are covered in this course.
Prerequisites: PHO-115
Additional Fees: Course fee applies.

PHO-117. Color Photography I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
An introduction to color photographic materials. Topics include color perception, composition/design and color technology. Color theory, conventional image processing and digital image processing are covered. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Prerequisites: PHO-115
Additional Fees: Course fee applies.

PHO-119. Contemporary Photography. 3 Credits.
LECT 3 hrs
An in-depth look at photography and photographers practicing since 1950. Students gain an understanding of the philosophies that have shaped the current uses of the photographic image. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Prerequisites: PHO-115
Additional Fees: Course fee applies.

PHO-204. Digital Imaging I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
An introductory studio course providing an overview of various digital post production software applications used for digital photography. Non-destructive vs. destructive image manipulation, color management, workflow and image compositing basics are several of the topics covered in this course. Current software applications employed in the course include Adobe Photoshop and Adobe Lightroom. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Prerequisites: PHO-115
Additional Fees: Course fee applies.

PHO-213. Documentary Photography. 3 Credits.
LECT 2 hrs, LAB 3 hrs
An introduction to the methods, history, problems and opportunities of in-depth, fact-based photographic assignments and essays. Students learn how to plan, engage and complete in-depth documentary and journalistic photographic projects. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Prerequisites: PHO-115
Additional Fees: Course fee applies.
PHO-216. Studio Lighting I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
An introductory studio course covering the basic concepts and manipulation of artificial lighting for a range of subject matter, camera formats and applications. The course focuses on developing problem-solving skills that address technical and creative methods of crafting an image to achieve a desired goal. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Prerequisites: PHO-115 and PHO-204
Additional Fees: Course fee applies.

PHO-224. Digital Imaging II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This studio course is designed for experienced digital imaging users. Focusing on a semester long project, students learn how different media influence the way we see and capture the world. As technology and the role of the photographer evolve, methods of manipulation and presentation are explored. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Additional Fees: Course fee applies.

PHO-226. Portfolio Preparation. 3 Credits.
LECT 3 hrs
Students prepare a final portfolio, in both print and digital formats, showcasing examples of photographic skills acquired during their course of study in the Photography Technology program. Students focus on presentation, craftsmanship and the development of a personal style. Various outlets and methods of presentation are explored. Formal and informal critiques help students define strengths and career goals. This course should be taken in the student's final semester. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Prerequisites: PHO-216
Corequisites: PHO-227
Additional Fees: Course fee applies.

PHO-227. Professional Studio Photography. 3 Credits.
LECT 2 hrs, LAB 3 hrs
An advanced studio course focusing on the development of concepts and ideas within a studio environment through a variety of assignments. Emphasis is placed on developing light design strategies for various applications ranging from portraiture to architecture. Technical competency and professionalism are key components of this course. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Prerequisites: PHO-204 and PHO-216
Additional Fees: Course fee applies.

PHO-228. Cooperative Work Experience-Photography. 3 Credits.
COOP 3 hrs
Open to Photography Technology (3550) majors only. Students work in photography-related jobs, receiving training. Photography Technology faculty members individually supervise students.
Prerequisites: PHO-116
Corequisites: PHO-229.

PHO-229. Cooperative Work Experience-Photography Related Class. 1 Credit.
LECT 1 hr
Open to Photography Technology (Program 3550) majors only. Related class designed to supplement Cooperative Work Experience. Weekly meetings include discussion, written assignments and critical analysis of the work experience.
Prerequisites: PHO-116
Corequisites: PHO-228.

PHO-290. Independent Study I in Photography. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A project designed with a faculty advisor. The student is responsible for developing a statement of goals and objectives and submitting a summary project.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

PHO-291. Special Topics in Photography. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Topics in photography which are not included in the regularly scheduled curriculum. May include studio work, technical topics and/or critique.
Prerequisites: PHO-115
Additional Fees: Course fee applies.

PHO-292. Special Topics in Photography. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Studio work in selected topics or issues in photography.
Prerequisites: PHO-115
Additional Fees: Course fee applies.

PHO-293. Special Topics in Photography. 1 Credit.
LECT 3 hrs
Studio work in selected topics or issues in photography.
Prerequisites: PHO-115
Additional Fees: Course fee applies.

Public Administration

Associate in Science Degree
This curriculum is designed for students interested in careers in public service at the federal, state, county and municipal levels or in nonprofit and private organizations involved in public service. It is also an appropriate prelaw program. This transfer program is appropriate for a student seeking a bachelor's degree in public administration or political science. In today's complex society, preparation, training and qualification for selection and progression in a career in public service requires that the individual be knowledgeable in the social sciences and humanities, as well as trained in the specialized skills of the profession.

Partnerships
The County College of Morris and Rutgers University-Newark have partnered to allow CCM graduates and others who hold associate degrees to earn Rutgers baccalaureate degrees at CCM's Randolph campus, including degrees in Nonprofit and Public Administration.

Articulation Agreements
Students should check with the Transfer Office about other articulation agreements with this program.
For more information, visit the Public Administration (http://www.ccm.edu/academics/degrees/publicadmin.aspx) website.

### Degrees

**AS Public Administration**

(P2260)

**General Education Foundation**

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**Public Administration Core**

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<td>POL-222</td>
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**Public Administration Core Credits**

30

**Total Credits**

61-62

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**Faculty**

Dr. Michael Parrella  
Professor, History  
Chair, History and Political Science  
Ph.D., New York University  
M.A., Fairleigh Dickinson University  
B.A., Boston University  
DH 309  973-328-5640  mparrella@ccm.edu  
jbernardo@ccm.edu

**Courses**

**POL-111. American Government. 3 Credits.**

LECT 3 hrs  
A study of the myths and realities of the American political system. The course focuses on the constitutional development of the American system of government, the political, policymaking and implementing structures of American government, and the problem of representative government in the United States. Consideration is given to contemporary domestic and foreign policy issues.  
**Prerequisites:** POL-111.

**POL-222. Constitutional Law. 3 Credits.**

LECT 3 hrs  
This is a survey course which examines the constitutional development of the U.S., the growth of American constitutional doctrine and law, and the judicial process within which judicial decisions are formulated and given the force of law. The constitutional basis for the government's powers and the liberties of the individual are examined within this framework. Emphasis is given to landmark U.S. Supreme Court decisions.  
**Prerequisites:** POL-111.

**POL-231. State and Local Government. 3 Credits.**

LECT 3 hrs  
A survey of the governing structures, politics and policies of local and state governments, with special emphasis on New Jersey. Students become acquainted with many of the major challenges and state issues facing local government today.

**POL-240. International Politics. 3 Credits.**

LECT 3 hrs  
An introduction to the nature and problems of international politics. Analysis and consideration is given to the development and contemporary status of nation-states, their relationships and the elements of power politics. Emphasis is given to problems of war and peace, the nature of conflict and the various approaches to world peace.

**POL-245. Comparative Government. 3 Credits.**

LECT 3 hrs  
An examination of the variety of governmental systems, both western and non-western, whose importance is reflected in the increasing interdependent nature of the world community. The political systems of the traditional European powers (Great Britain, Germany and Russia) and strategically important non-western nation-states (Japan, China, India and Mexico) are reviewed. Trends in government in the developing countries are studied as well.
Public Health

Associate in Science Degree

The Associate in Science Degree in Public Health is offered through a consortium of the County College of Morris, Brookdale Community College, Mercer County Community College, and Middlesex County College. The program is designed to address the specific needs of students who are interested in transferring to four-year institutions to earn a baccalaureate degree or higher in public health. Students will develop background knowledge in public health through introductory coursework and training in laboratory science.

Public Health focuses on the health of the entire community rather than the individual. The health of the community involves populations at risk, education and prevention programs, methods of assuring access to appropriate and cost-effective care, and the formation of sound public policies. Public health professionals play a vital role in improving community health issues such as the quality of life for the elderly, drug, alcohol, and tobacco abuse, nutrition, food safety, water quality, vaccination programs, bio-terrorism, natural disasters, and infectious diseases.

According to the U.S. Bureau of Labor Statistics (BLS) data and projections, areas in healthcare have a positive growth rate. Predictions indicate that the healthcare industry will produce 3.2 million new jobs in the U.S. by 2019, more than any other industry. The BLS attributes the tremendous growth to advancement in medicine and medical technology in addition to the resultant increase in life expectancy. Significant growth in fields related to public health include health educators, epidemiologists, environmental science and protection technicians, medical and health service managers, environmental scientists and specialists, biological technicians, and occupational health and safety specialists.

Through a strong general education foundation and public health core, students in the program will begin to develop competencies for healthcare professionals. These competencies include analytic/assessment skills, policy development, program planning skills, communication skills, cultural competency skills, community dimensions of practice skills, public health science skills, financial planning and management skills, and leadership and systems thinking skills. PBH-101, Principles of Public Health, provides a broad overview of the many facets of public health.

Graduates of the program will be able to achieve the following outcomes: 1) demonstrate scientific foundation knowledge and skills appropriate for student seeking advanced study in the field of public health; 2) apply the scientific method of inquiry to gather and analyze data and use information relevant to major local, national and global health challenges; 3) conduct a literature search on health issues using a variety of academic and public resources; and 4) engage in collaborative approaches for improving the population’s health.

Degrees

AS Public Health

(P2156)

General Education Foundation

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Courses
PBH-101. Principles of Public Health. 3 Credits.
LECT 3 hrs
This course provides a broad overview of the many facets of public health, including, but not limited to historical perspectives, communicable disease, epidemiology, health policy, environmental health, emergency preparedness, and social, cultural, and behavioral aspects of health across the life span. It will describe public health infrastructure, delivery of services at the local, state and national levels, and the core competencies for public health professionals.

Radiography

Associate in Applied Science Degree

The Radiography program is a day program; there are no evening Radiography courses offered. A new Radiography class is selected for each Fall Semester.

The Associate in Applied Science (AAS) degree in Radiography is designed to provide students with the knowledge and skills to enter the field of radiography. The curriculum includes a general education foundation and 45 credits in courses pertinent to the development of competency in diagnostic radiography.

The Radiography program seeks to provide each student with the didactic, laboratory and clinical education to become a qualified entry level Radiologic Technologist. The program provides each student the opportunity to develop technical skills, enhance critical thinking and strengthen interpersonal behavior through educational activities.

The pre-professional phase is for students who are currently not enrolled in or eligible for admission into the professional phase of the Radiography program. Students in this phase can take all of the general education and speech fundamentals required for the Radiography major. They can study full or part-time and in the day or evening. In addition, summer courses can also be taken. Admission into the professional phase is not guaranteed once pre-professional course work is completed. All candidates must attend one of the seven mandatory Radiography sessions. The information sessions are held each month starting in June to February.

Acceptance into the professional phase is competitive. A student’s GPA must be 2.5 or higher. The granting of a seat is based on the number of general education courses completed, the grades received and the overall GPA at the time the candidate applies to the program. Applicants are ranked according to grades achieved in the required pre-professional courses. Values are assigned to grades achieved utilizing a point system. Science grades are weighted more heavily than non-science courses. All science courses must be less than seven years old. Grades for all prerequisite courses must be C or better. Students who have taken science courses prior to this seven-year cutoff must prove competency by testing provided at CCM or retake the course.

All students accepted into the professional (Radiography courses) phase of the program will undergo an annual Criminal History Background Check and Urine Drug Screening, annual flu vaccine, obtain malpractice insurance at their own expense, obtain

Faculty

Dr. Michael Paul
Assistant Chairperson, Health and Exercise Science
Associate Professor, Health and Exercise Science
Ph.D., University of Toledo
M.S., East Stroudsburg University
B.A., Rutgers University
HPE 225 973-328-5327 mpaul@ccm.edu
health clearance and be certified in CPR by the American Heart Association. In addition, students in the professional phase of the program are required to carry personal health insurance that provides coverage for accidents and sickness.

A statewide criminal record search through the New Jersey State Police and a National Criminal History Database Search are performed on all students upon initial acceptance into the professional phase of the program and annually thereafter. If a record is found as a result of the criminal record searches, admission into the professional phase of the program may be denied. If there is no record upon admission but subsequent searches result in a record found, the student may be immediately dismissed from the program.

The Radiography program maintains a zero-tolerance policy regarding substance abuse. The program faculty requires Radiography students to provide safe, effective and supportive care in the clinical setting. To fulfill this purpose, Radiography students must be free of chemical impairment during participation in any part of the Radiography program including classroom, laboratory and clinical settings. A Urine Drug Screening is performed on all students performing their clinical education at any of the program’s clinical affiliates upon initial acceptance into the professional phase of the program. Failure to submit to the Urine Drug Screening will result in dismissal from the program. If the test is positive for illegal substances, admission into the professional phase of the program is denied. In addition, illegal use of prescribed substances will result in denial of admission into the professional phase of the program.

All Radiography students are required to wear the County College of Morris Radiography uniform when in the clinical setting. Uniforms are obtained at the student’s expense.

Graduates of the two-year program are eligible to apply for New Jersey State licensure and for certification as a Registered Technologist by the American Registry of Radiologic Technologists.

The Radiography program is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT, 20 N Wacker Drive, Suite 2850, Chicago, IL 60606-3182; (312-704-5300) and the State of New Jersey Department of Environmental Protection – Radiologic Technology Board of Examiners P.O. Box 415, Trenton, NJ 08625; (609-984-5890).

The JRCERT publishes guidelines that a Radiography program must meet in order to be accredited. In order to be awarded and maintain accreditation status, the program must be in compliance with these guidelines. Since January 1, 2014, the Standards and Guidelines of an Accredited Educational Program for the Radiographers has been the guideline utilized for accreditation.

A detailed description of the program’s policies and procedures can be found in the Radiography Program Student Handbook available in the program’s office in the Department of Allied Health and in the Admissions Office. The program’s pregnancy policy can be found in the Radiography Program Student Handbook.

Due to continual program revisions mandated by the accrediting agencies, students should consult their academic advisors when selecting courses.

For more information, visit the Radiography (http://www.ccm.edu/academics/degrees/radiography.aspx) website.

**Degrees**

**AAS Radiography**

(P3840)

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Science courses completed by students prior to entering a Radiography course must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

**Faculty**

Denise Vill'Neuve, RT (R) (CT) (M)
Chairperson, Allied Health
Professor, Radiography
M.A., B.S., Montclair State University
AAS, Bergen Community College
CH 302  973-328-5354  dvillneuve@ccm.edu
Courses

RAD-100. Introduction to Radiography. 2 Credits.
LECT 2 hrs
Introduction to Radiography is the study of the fundamental elements of the health system, patient care and the profession of Radiography. The concepts of ethics, law, medical asepsis, vital signs, communicable disease and medical emergencies are presented in this course.
Prerequisites: Admission to Professional Phase and permission of department chair
Corequisites: RAD-104, RAD-107 and MAT-140.

RAD-104. Principles of Radiography I. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is designed to provide students with the necessary theory, concepts and hands-on experience in performing specific diagnostic procedures. Patient positioning, equipment manipulation, radiation protection techniques, appropriate patient care techniques and critique of radiographic images are presented in this course. Body areas covered include chest, abdomen, upper and lower extremities.
Prerequisites: Admission to Professional Phase; Department permission
Corequisites: RAD-100, RAD-107 and MAT-140
Additional Fees: Course fee applies.

RAD-107. Radiography Clinical Practice I. 1 Credit.
CLIN 8 hrs
This course provides students with an opportunity to apply concepts learned in Radiography I and Introduction to Radiography. Some of the tasks include operating equipment appropriately, applying basic patient care and positioning the patient accurately.
Prerequisites: Admission to Professional Phase - permission of department chair
Corequisites: RAD-100, RAD-104 and MAT-140
Additional Fees: Course fee applies.

RAD-110. Radiation Biology and Physics. 3 Credits.
LECT 3 hrs
The study of physics and electronics involved in the production, use and control of the various electromagnetic energies used in medical and diagnostic applications.
Prerequisites: RAD-100, RAD-104, RAD-107, MAT-140
Corequisites: RAD-114 and RAD-117.

RAD-114. Principles of Radiography II. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Principles of Radiography II reinforces basic concepts presented in Principles of Radiography I. Body areas covered include the hip, pelvis, bony thorax, entire spine, upper and lower GI tract, biliary system and the urinary system.
Prerequisites: RAD-100, RAD-104, RAD-107, MAT-140
Corequisites: BIO-102, RAD-110 and RAD-117
Additional Fees: Course fee applies.

RAD-117. Radiography Clinical Practice II. 2 Credits.
CLIN 16 hrs
Students are allowed the opportunity to put into practice the course material introduced in this and previous semesters. Opportunities for more responsibility and independence with previously learned procedures are provided. Students demonstrate competency of procedures learned in Radiography I. Also included is film critique in which the student evaluates radiographs.
Prerequisites: RAD-100, RAD-104, RAD-107, MAT-140
Corequisites: RAD-110 and RAD-114
Additional Fees: Course fee applies.

RAD-200. Pathology for Radiography. 2 Credits.
LECT 2 hrs
This pathology course is an assessment of medical and surgical diseases designed to familiarize the student with changes caused by disease in relationship to radiography. Student projects, associated film presentations and critiques are also included.
Prerequisites: RAD-120
Corequisites: RAD-204 and RAD-213.

RAD-204. Principles of Radiography III. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Principles of Radiography III is a study of the anatomy and positioning of the skull and facial bones. Pediatric, geriatric, trauma and mobile radiography are also included.
Prerequisites: RAD-100
Corequisites: RAD-207 and RAD-213
Additional Fees: Course fee applies.

RAD-207. Radiologic Special Imaging. 3 Credits.
LECT 3 hrs
This course provides students with a basic understanding of the more advanced and complex diagnostic procedures. Students are introduced to such procedures as, but not limited to, myelography, arthrogram, venography and hysterosalpingography. The basic concepts of pharmacology, venipuncture and contrast agents are included.
Prerequisites: RAD-120
Corequisites: RAD-204 and RAD-213.
RAD-210. Radiographic Exposure. 3 Credits.
LECT 3 hrs
This course will acquaint students with the many methods of routine and special technical factors available to radiographers to create diagnostic radiographs. Emphasizing the various accessory devices that may affect radiograph production, each student comes to understand how technique can significantly affect image quality. Students learn what technical factors can safely be used, aware that radiation physics, radiation protection and quality assurance are interfaced with the principles of radiographic exposure. In addition, upon completion of this course students are able to construct a functional safe technique chart.
Prerequisites: RAD-110, RAD-120
Corequisites: RAD-204 and RAD-207.

RAD-213. Radiography Clinical Practice III. 2 Credits.
CLIN 16 hrs
Students are allowed the opportunity to put into practice the course material introduced in this and previous semesters. The course also gives the student more responsibility and independence with procedures that have been deemed competent. Also included is film critique in which students evaluate radiographs.
Prerequisites: RAD-120, RAD-114, RAD-117
Corequisites: RAD-204, RAD-207 and RAD-210
Additional Fees: Course fee applies.

RAD-220. Principles of Radiography IV. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Students become acquainted with the various components to a Radiologic Quality Assurance Program stressing the significant role a quality assurance program must play in the field of Radiography. Students also study the effect of various appropriate types of electromagnetic radiation and their effect upon living tissues and learn the importance of radiation protection for patients and personnel. A complete review of all radiography procedures also is provided.
Prerequisites: RAD-200, RAD-204, RAD-207, RAD-210, RAD-213
Corequisites: RAD-227
Additional Fees: Course fee applies.

RAD-224. Advanced Imaging. 2 Credits.
LECT 2 hrs
The course presents the advanced imaging techniques required by nuclear medicine, diagnostic medical sonography, radiation therapy, mammography, computed tomography and magnetic resonance imaging. The basic concepts and principles of cardiac and vascular interventional radiography are also discussed.
Prerequisites: RAD-207, RAD-200, RAD-210, RAD-204, RAD-213

RAD-227. Radiography Clinical Practice IV. 2 Credits.
CLIN 16 hrs
This course provides students with an opportunity to refine skills learned in previous radiography clinical courses. Continuous practice is performed to improve technique and procedures. Students complete all remaining competencies for the program.
Prerequisites: RAD-200, RAD-204, RAD-207, RAD-210, RAD-213
Corequisites: RAD-220 and RAD-224
Additional Fees: Course fee applies.

RAD-230. Advanced Clinical Practice. 3 Credits.
CLIN 32 hrs
This 11-week course provides students the opportunity to exercise independent judgment and discretion in the technical performance of medical imaging procedures. Students complete the terminal competency evaluations for the program. This final session of clinical education ensures that the student is ready for employment.
Prerequisites: RAD-220, RAD-224, RAD-227
Additional Fees: Course fee applies.

Respiratory Therapy

Associate in Applied Science Degree

The general objective of the Respiratory Therapy program is to prepare graduates with the knowledge, skills, professional attitudes and behaviors necessary to attain state licensing and national credentialing for a career in respiratory therapy. Graduates become a vital part of the healthcare team in a variety of settings including hospitals, long-term care facilities, home health agencies, pulmonary rehabilitation centers and physician offices.

The program has two components: a pre-professional phase that includes all the general education and science prerequisites, and a professional phase that includes respiratory therapy specific course work and clinical education. Courses in the pre-professional phase of the program may be taken on a full-time or part-time basis during day or evening hours. Full-time day attendance is required for the professional phase of the program. Students seeking admission into the Respiratory Therapy program must have a GPA of 2.5 or better and a grade of C or better in all their pre-professional phase courses. Additionally, students must attend a program general orientation and complete an essay. Interested students should schedule an interview with the program director. An Allied Health Professional Phase Application Form must be filed in the office of Records and Registration by March 1 for admission into the professional phase in the Fall Semester.

A statewide criminal record search through the New Jersey State Police and a National Criminal History Database Search is performed on all students upon initial acceptance into the professional phase of the program and annually thereafter. If a record is found as a result of the criminal record searches, admission into the professional phase of the program may be denied. If there is no record upon admission but subsequent searches result in a record found, the student may be immediately dismissed from the program.

When a graduate applies for licensure as a respiratory care practitioner in New Jersey, the New Jersey Board of Respiratory Care requires a Criminal History Background Check. If the Criminal History Background Check reveals a criminal conviction, a review of the application by the Board of Respiratory Care is required.

Students accepted into the program are responsible for obtaining malpractice insurance and must have health clearance through the college’s Health Services. Certification in Basic Life Support (BLS) for Healthcare Providers by the American Heart Association is also required.

The Respiratory Therapy program maintains a zero-tolerance policy regarding substance abuse. Respiratory Therapy students must be free of chemical impairment during participation in all parts of
the Respiratory Therapy program including classroom, laboratory and clinical settings. A urine drug screening test is performed on all students upon initial acceptance into the professional phase of the program. If the test is positive for illegal substances, admission into the professional phase of the program is denied. In addition, illegal use of prescribed substances will result in denial of admission into the professional phase of the program.

For more information, visit the Respiratory Therapy (http://www.ccm.edu/academics/degrees/resptherapy.aspx) website.

**Degrees**

**AAS Respiratory Therapy**
(P3850)

**General Education Foundation**

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<td>General Psychology</td>
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**General Education Electives**

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<td>Anatomy and Physiology II</td>
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**General Education Foundation Credits**

20

**Respiratory Therapy Core**

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<td>Introductory Chemistry Laboratory</td>
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<td>BIO-215</td>
<td>Microbiology</td>
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<td>PHY-103</td>
<td>Concepts of Physics</td>
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**Respiratory Therapy Core Credits**

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**Professional Phase**

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<td>Cardiopulmonary Pharmacology</td>
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<td>Cardiopulmonary Pathophysiology</td>
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<td>Neonatal and Pediatric Respiratory Care</td>
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<td>Clinical Practice I</td>
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<td>RTH-208</td>
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**Professional Phase Credits**

32

**Total Credits**

67

Due to continual program revisions mandated by the accrediting agencies and/or changes in state mandated requirements, students should consult their academic advisors when selecting courses.

Science courses completed by students prior to entering a Respiratory Therapy course must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

The program is accredited through the Committee on Accreditation for Respiratory Care (COARC) (http://www.CoARC.com). Graduates are eligible to apply for New Jersey State licensure and advanced credentialing as a Registered Respiratory Therapist (National Board for Respiratory Care) (http://www.NBRC.org).

**Faculty**

John Rutkowski, RRT, FACHE, FAARC
Assistant Chairperson, Allied Health
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MPA, Seton Hall University
MBA, Fairleigh Dickinson University
B.A., Jersey City State College
A.S., St. Joseph Hospital and York College
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Director of Clinical Education
Assistant Professor, Respiratory Therapy Program
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A.A.S., Bergen Community College
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**Courses**

**RTH-199. Respiratory Therapeutics. 5 Credits.**
LECT 4 hrs. LAB 3 hrs

An introduction to respiratory care, including history of the profession, ethical and legal responsibilities of the respiratory therapist; medical terminology, basic respiratory care procedures including the physics, physiology and administration of medical gas therapy, basic patient communication and assessment skills. Basic respiratory care procedures, humidity and aerosol therapy, hyperinflation therapy, chest physiotherapy and bronchial hygiene; an overview of microbiology as applied to respiratory care; infection control; and equipment sterilization procedures. Course requires that students have completed the pre-professional phase of the Respiratory Therapy program and have permission of the program director to enroll.

**Prerequisites:** Permission of Program Director

**Additional Fees:** Course fee applies.

**RTH-202. Cardiopulmonary Pharmacology. 2 Credits.**
LECT 2 hrs

This course is an overview of general pharmacology, including routes of administration, federal regulations, dosages and calculations, and safety precautions. It provides an in-depth study of drugs administered to the respiratory patient, including chemical structure, mechanism of action, indications, contraindications, physiologic effects and side-effects.

**Prerequisites:** BIO-101, BIO-102, CHM-117 and CHM-118 and permission of program director.
RTH-203. Cardiopulmonary Physiology. 2 Credits.
LECT 2 hrs
A study of physiologic mechanisms of the cardiopulmonary system, including a review of the anatomy of the pulmonary and circulatory systems; ventilatory mechanics, gas diffusion, physiology of internal and external respiration, oxygen transport, carbon dioxide elimination, acid-base balance, ventilation perfusion relationships; and the neurologic control of ventilation.
Prerequisites: BIO-101, BIO-102 and permission of program director.

RTH-204. Cardiopulmonary Evaluation. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course will cover the techniques of patient assessment and diagnostic evaluation of the cardiopulmonary system. Topics covered include: arterial blood gas analysis, pulmonary function testing; non-invasive monitoring of oxygenation and ventilation, an overview of laboratory tests, chest radiographs, electrocardiograph interpretation and hemodynamic monitoring.
Prerequisites: RTH-199, RTH-202, RTH-203, RTH-210 and permission of Program Director
Corequisites: RTH-205, RTH-206 and RTH-211
Additional Fees: Course fee applies.

RTH-205. Cardiopulmonary Pathophysiology. 2 Credits.
LECT 2 hrs
An overview of the pathophysiology of diseases of the cardiopulmonary system with an emphasis on pathophysiologic processes such as hypoxemia, hypoventilation, diffusion defects and ventilation perfusion mismatch; a survey of diseases encountered by the respiratory therapist, including pathophysiology, diagnostic methods and findings, clinical manifestations, treatment and prognosis.
Prerequisites: RTH-203 and permission of program director.

RTH-206. Mechanical Ventilation. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Techniques of airway management and the provision of mechanical ventilation; includes types of airways and appropriate uses; the physics and physiology of mechanical ventilation; classification of mechanical ventilators; indications for clinical application and complications of mechanical ventilation; management and monitoring of the patient requiring ventilatory support; and appropriate methods of withdrawing ventilatory support.
Prerequisites: RTH-199, RTH-202, RTH-203, RTH-210 and permission of program director
Corequisites: RTH-204, RTH-205 and RTH-211
Additional Fees: Course fee applies.

RTH-207. Neonatal and Pediatric Respiratory Care. 2 Credits.
LECT 2 hrs
An overview of fetal development of the cardiopulmonary system with an emphasis on circulatory transitions and respiratory complications occurring at birth and in the neonatal period; a review of neonatal and pediatric respiratory disorders with an emphasis on clinical findings and treatment; a survey of respiratory care procedures as applied to the neonatal and pediatric patient, including oxygen therapy, humidity and aerosol therapy, diagnostic testing and mechanical ventilation.
Prerequisites: RTH-204, RTH-205, RTH-206, RTH-211 and permission of program director
Corequisites: RTH-208 and RTH-212.

RTH-208. Advanced Respiratory Care. 2 Credits.
LECT 2 hrs
A survey of current events and state-of-the-art modalities in respiratory care; includes respiratory care in non-traditional settings, cardiopulmonary rehabilitation, controversies in clinical practice, and changes in health care affecting the respiratory care profession. Students are required to complete advanced cardiac life support (ACLS) certification through the American Heart Association.
Prerequisites: RTH-204, RTH-205, RTH-206, RTH-211 and permission of program director
Corequisites: RTH-207 and RTH-212.

RTH-210. Clinical Practice I. 3 Credits.
CLIN 16 hrs
A supervised clinical application of the respiratory care procedures covered in Respiratory Therapeutics including chart review, patient and health professional communication, basic patient assessment, assembly and monitoring of oxygen therapy, aerosol and humidity therapy, aerosolized drug administration, hyperinflation therapy, bronchial hygiene and evaluation of patient response.
Prerequisites: Permission of program director
Corequisites: RTH-199, RTH-202 and RTH-203
Additional Fees: Course fee applies.

RTH-211. Clinical Practice II. 3 Credits.
CLIN 16 hrs
Continued refinement of the skills covered in Clinical Practice I, in a general care environment, with an emphasis on clinical competence in providing basic respiratory care; followed by an introduction to the critical care environment and to respiratory care of the critically ill patient, with an emphasis on patient assessment and monitoring skills, and patient safety. Supervised application of the skills covered in Mechanical Ventilation and Cardiopulmonary Evaluation, including specialty rotations in ECG, the operating room, pulmonary function testing and blood gas laboratory, and physician offices.
Prerequisites: RTH-199, RTH-202, RTH-203, RTH-210 and permission of program director
Corequisites: RTH-204, RTH-205 and RTH-206
Additional Fees: Course fee applies.

RTH-212. Clinical Practice III. 4 Credits.
CLIN 32 hrs
Continued refinement of the skills needed to function in a critical care environment with an emphasis on clinical competence in hemodynamic and advanced monitoring and management of the patient on mechanical ventilation. An emphasis is placed on interaction with other members of the healthcare team, patient care planning, clinical decision making and independent practice. Includes specialty rotations in neonatal and pediatric respiratory care, post open heart recovery and home care. The clinical fee includes the cost of the required National Board of Respiratory Care Self-Assessment Examination (NBRC SAE).
Prerequisites: RTH-204, RTH-205, RTH-206, RTH-211 and permission of program director
Corequisites: RTH-207 and RTH-208
Additional Fees: Course fee applies.

RTH-292. Special Topics in Respiratory Care. 2 Credits.
LECT 2 hrs
An examination of selected topics or issues in Respiratory Therapy. Topics differ each time the course is offered. Students should consult the program director for further information.
Prerequisites: Permission of program director.
Science and Mathematics

Associate in Science Degree

These curricula emphasize the physical and biological sciences and mathematics, as well as the liberal arts. They are designed for transfer to baccalaureate programs in mathematics and the sciences and are appropriate for students who plan careers in mathematics, biology, chemistry, physics, teaching, medicine, dentistry, allied health and other scientific programs. All programs include general education courses and advanced mathematics and science courses appropriate to the transfer major.

Options within the Science and Mathematics program include Biology, Chemistry and Mathematics. Students should consult with an academic advisor to select the curriculum which is appropriate for their transfer and career goals, as well as preparation for medical, dental and chiropractic schools. Transfer to science majors in four-year curricula which are more specialized, such as pharmacy and astronomy, can be accomplished with these programs with careful advisement.

Students may consult with the Biology and Chemistry chair for specific information and assignment to an academic advisor for options in Chemistry and Biology. Students interested in the Mathematics options may consult with the Mathematics chair.

Due to continual program revisions mandated by the accrediting agencies and/or changes in state-mandated requirements, students should consult with their academic advisors when selecting courses.

Premedical, Predental, Preveterinary Majors

Students preparing for medical, dental or veterinary medical schools should select the Chemistry major or the Biology major, preprofessional track. These schools require General Biology I and II, General Chemistry I and II, Organic Chemistry I and II, General Physics I and II, and mathematics, generally through Calculus I or further, to support these. Since there are prerequisites for these courses, it is important to see an academic advisor early in the process to plan the entire sequence of courses. Chiropractic, occupational therapy, physical therapy and physician's assistant programs should major in Biology and confer with an academic advisor to select the correct track and selection of courses.

Students with a previous non-science degree who plan to take only the science courses necessary for these schools should also see an advisor since proper sequencing can save time in the completion of the courses. Additionally, by transferring general education courses from the previous degree, a student can complete an A.S. degree in Chemistry or Biology without taking any additional courses. For further information, contact the Department of Biology and Chemistry.

Pharmacy

Pharmacy programs are often separate schools within a university. The appropriate major to prepare for pharmacy is Chemistry with appropriately selected courses. Students should consult with an academic advisor to select the correct sequencing of courses.

Degrees

- AS Science and Mathematics - Biology Option (p. 203)
- AS Science and Mathematics - Biology Option, Track 1: Traditional (p. 204)
- AS Science and Mathematics - Biology Option, Track 2: Health Related (p. 204)
- AS Science and Mathematics - Biology Option, Track 3: Preprofessional/Scientific (p. 204)
- AS Science and Mathematics - Biology Option, Track 4: Environmental (p. 205)
- AS Science and Mathematics - Biology Option, Track 5: Nutrition (p. 205)
- AS Science and Mathematics - Chemistry Option (p. 206)
- AS Science and Mathematics - Mathematics Option (p. 207)

Biology

An Option within Science and Mathematics

(P2160)

Note: Biology majors requiring developmental courses in Mathematics must complete MAT-016 Intermediate Algebra prior to taking courses in Biology and Chemistry.

Biology is one of the most rapidly developing sciences today. A tremendous rate of expansion in the understanding of life processes, along with unprecedented growth in medical and environmental technologies, has resulted in a growing need for trained professionals in new, as well as traditional, fields. This curriculum, with each of its five tracks, reflects this expanding science and its related technologies. It is a liberal arts program with emphasis on the sciences and mathematics. Students planning to transfer to baccalaureate programs or professional schools take courses that either parallel those required in the first two years of most baccalaureate programs in biology or those required for entry into the most popular professional programs.

Because of the complexity of career options and the diversity in requirements of baccalaureate and professional schools, it is recommended that students work closely with their academic advisors. Students who are preparing for medical, dental or veterinary medical schools should see an academic advisor in the Department of Biology immediately to plan their courses and sequencing of courses. The appropriate major is either Biology, preprofessional track, or Chemistry. Students who have a previous non-science degree should be able to complete either of these degrees by transferring general education courses and taking only the sciences required for the medical schools. College programs may differ widely in course offerings for various biology majors. In order to achieve maximum transfer of credits, it is absolutely essential that students speak to their academic advisors and consult the transfer institution regarding specific curriculum requirements.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.
Students considering a career in teaching should read about the County College of Morris Teacher Education Specialization in Biology.

The following are tracks within the major for purposes of advisement. Dissection is required in certain mandated courses.

**Traditional**

Track 1 is the traditional curriculum which, because of its general scope, is anticipated to continue to satisfy the needs of the majority of students. Students in this program can continue in virtually any direction, although in certain circumstances they may have to make up credits upon transferring.

**Traditional - Track 1**

**General Education Foundation**

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**Biological Traditional Core**

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*Students should consult with their academic advisors when selecting free electives.*

*Science courses completed by students prior to entering the Biology option must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.*

**Health Related**

Track 2 is intended for those students who are preparing to transfer directly to professional schools including occupational therapy and physician’s assistant programs. However, this program is not suitable for students wishing to apply to programs in medicine, dentistry, optometry or podiatry, which require a more traditional selection of courses. This track has a more narrow selection of courses than Tracks 1 and 3, and, thus, may restrict transfer options. It is essential that applicants to this program be accepted only with the approval of their faculty advisors.

**Health Related - Track 2**

**General Education Foundation**

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<td>or MAT-131</td>
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*Students should consult with their academic advisors when selecting the Biology elective.*

*Science courses completed by students prior to entering the Biology option must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.*

**Preprofessional/Scientific**

Track 3 is intended to meet the needs of those whose math and science skills are above average and who hope to transfer to the
more competitive baccalaureate programs, professional schools or medical, veterinary or dental schools. Students wishing to be admitted into this track can do so only with the approval of their faculty advisors.

Preprofessional/Scientific - Track 3

General Education Foundation

Communication 6

ENG-111 English Composition I
ENG-112 English Composition II

Math-Science-Technology 11

MAT-123 Precalculus

Biology Elective

Math-Science-Technology Elective

Social Science 3

Choose from General Education course list

Humanities 3

Choose from General Education course list

Social Science or Humanities 3

PSY-113 General Psychology

General Education Electives 6

Choose from General Education course list

General Education Foundation Credits 32

Biology Preprofessional Core

BIO-121 General Biology I 4
BIO-122 General Biology II 4

CHM-125 General Chemistry I - Lecture 3
CHM-126 General Chemistry I - Laboratory 1
CHM-127 General Chemistry II - Lecture 3
CHM-128 General Chemistry II - Laboratory 1

CHM-231 Organic Chemistry I - Lecture 3
CHM-232 Organic Chemistry I - Laboratory 1
CHM-233 Organic Chemistry II - Lecture 3
CHM-234 Organic Chemistry II - Laboratory 1

MAT-131 Analytic Geometry and Calculus I 4

Free Elective 4

Biology Preprofessional Core Credits 32

Total Credits 64

Students should consult with their academic advisors when selecting free electives.

Science courses completed by students prior to entering the Biology option must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

Environmental

Track 4 is designed to meet the needs of those who clearly are interested in a career in the environmental field. These programs are becoming increasingly more specialized in the array of courses required in the first two years. For this reason, students wishing to be admitted into this track will require the approval of their faculty advisors.

Environmental - Track 4

General Education Foundation

Communication 6

ENG-111 English Composition I
ENG-112 English Composition II

Math-Science-Technology 11

MAT-123 Precalculus

Biology Elective

Math-Science-Technology Elective

Social Science 3

Choose from General Education course list

Humanities 3

Choose from General Education course list

Social Science or Humanities 3

PSY-113 General Psychology

General Education Electives 6

Choose from General Education course list

General Education Foundation Credits 32

Environmental Science Core

BIO-121 General Biology I 4
BIO-122 General Biology II 4
BIO-202 Ecology 4
CHM-125 General Chemistry I - Lecture 3
CHM-126 General Chemistry I - Laboratory 1
CHM-127 General Chemistry II - Lecture 3
CHM-128 General Chemistry II - Laboratory 1
MAT-124 Statistics 3

Free Electives 9

Environmental Science Core Credits 32

Total Credits 64

Students should consult with their academic advisors when selecting free electives.

Science courses completed by students prior to entering the Biology option must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

Nutrition

Track 5 is designed to meet the needs of students who are interested in a career in nutrition (e.g., health and wellness, fitness or sports related nutrition). The track is intended for those students who are preparing to transfer directly to a four-year school with programs that offer a Registered Dietitian (RD) credential or Dietetic Technician, Registered (DTR) certification. The courses required for the first two years are very specific. Therefore, students wishing to be admitted into this track must meet with and get the approval of their academic faculty advisor.

Nutrition - Track 5

General Education Foundation

Communication 6

ENG-111 English Composition I
Chemistry

An Option within Science and Mathematics

(2152)

Note: Chemistry majors requiring developmental courses in Mathematics must complete MAT-016 Intermediate Algebra prior to taking courses in Biology and Chemistry.

Chemistry is a versatile subject area and the pursuit of a career in chemistry can be a most intellectually satisfying experience. No other basic science touches and shapes as many aspects of modern society as chemistry. From soft contact lenses and synthetic blood to alternative fuel sources and advances in medicine and biotechnology, the study of chemistry has provided the solution to complex problems and has improved the quality of all phases of human life.

The fact that chemists at all levels of education find a market for their skills and knowledge in every employment area is further demonstration of the scope of the science of chemistry. Chemists provide the backbone for manufacturing industries, such as pharmaceuticals, laboratories, environmental protection and for government positions in regulatory agencies.

Chemistry and biochemistry are the strongest preparation for professional schools in the health-related disciplines, such as medicine, dentistry and pharmacy, as well as the fields of environmental science, polymers and geology.

The Chemistry program at County College of Morris is designed to provide students with a strong foundation in all areas of modern chemistry. The core courses required for the A.S. degree prepare the student to transfer and attain a B.S. or B.A. degree, to attend health-related professional schools in medicine, dentistry, pharmacy, physical therapy and chiropractic, or to start a career in chemistry. The degree is also applicable for those students interested in the applications of chemistry to environmental problems. Students who are preparing for medical, dental or veterinary schools should see an academic advisor in the Department of Biology and Chemistry early in the process to plan their courses and sequencing of courses. Students who have a previous non-science degree should be able to complete this program by transferring general education courses and taking only the sciences required for medical schools.

The department is staffed with a dedicated teaching faculty, and many have industrial or medical experience. State-of-the-art equipment is used in all laboratory courses to maximize the students’ practical hands-on experience.

Students should consult with their advisors to ensure the proper sequencing of required and elective courses. Correct advisement is absolutely necessary to assure transferability.

The study of chemistry opens doors to satisfying careers and to a professional life in which the tendency to ask “why” can lead to rewarding endeavors.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

Students considering a career in teaching should read about the County College of Morris Teacher Education Specialization in Chemistry.

General Education Foundation

Communication

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<th>Credits</th>
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<td>Precalculus</td>
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<td>BIO-133</td>
<td>Human Biology</td>
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<td>CHM-117</td>
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Social Science

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Humanities

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General Education Electives

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Total Credits: 32

Chemistry Core

ChiM-125 | General Chemistry I - Lecture | 3

ChiM-126 | General Chemistry I - Laboratory | 3

Total Credits: 32
CHM-127  General Chemistry II - Lecture  3
CHM-128  General Chemistry II - Laboratory  1
CHM-231  Organic Chemistry I - Lecture  3
CHM-232  Organic Chemistry I - Laboratory  1
CHM-233  Organic Chemistry II - Lecture  3
CHM-234  Organic Chemistry II - Laboratory  1
Biology or Physics Elective  4
MAT-131  Analytic Geometry and Calculus I  4
Restricted Elective  4
Free Elective  4
Chemistry Core Credits  32
Total Credits  64

Students should consult with their academic advisors when selecting free and restricted electives.

Science courses completed by students prior to entering the Chemistry option must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake the courses.

Mathematics

An Option within Science and Mathematics
(P2150)

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

Students considering a career in teaching should read about the County College of Morris Teacher Education Specialization in Mathematics.

General Education Foundation

Communication  6
   ENG-111  English Composition I
   ENG-112  English Composition II
Math-Science-Technology  11
   Restricted Laboratory Science
   Technology Elective
   Restricted Laboratory Science
Social Science  3
   Choose from General Education course list
   Humanities  3
   Choose from General Education course list
Social Science or Humanities  3
   Choose from General Education course list
General Education Electives  6
   Choose from General Education course list
General Education Foundation Credits  32
Mathematics Core  15-16
   Select from following Mathematics course groups
   MAT-123  Precalculus
   MAT-131  Analytic Geometry and Calculus I
   MAT-132  Analytic Geometry and Calculus II
   MAT-230  Calculus III
   OR
   MAT-131  Analytic Geometry and Calculus I
   MAT-132  Analytic Geometry and Calculus II
   MAT-230  Calculus III
   MAT-232  Differential Equations
Free Electives  10
Select one of the following:  3-4
   Math Elective
   ENR-125  Computer Programming for Engineers
   Mathematics Core Credits  28-30
Total Credits  60-62

Students should consult with their academic advisors when selecting the Math and free electives.

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BIO-101. Anatomy and Physiology I. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A continuation of Anatomy and Physiology I. The circulatory, respiratory, digestive, urinary, endocrine and reproductive systems are studied. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.
Prerequisites: BIO-101 (Minimum grade of C)
Additional Fees: Course fee applies.

BIO-116. Animal Control Officer's Training Course. 3 Credits.
LECT 3 hrs
Preparation for New Jersey State Certification as an Animal Control Officer. Topics include legal authority for animal control (federal, state, local); courtroom procedures; animal behavior, capture and handling; disease recognition, prevention and control; shelter operations; and community relations.

BIO-118. Biomedical Ethics. 3 Credits.
LECT 3 hrs
This course introduces students to major ethical issues in areas of biomedicine in contemporary society. The focal point of the course is a process for ethical reasoning and ethical decision making. Students identify ethical problems, assess information relevant to decisions, identify stakeholders affected by decisions, recognize competing values, consider options, make decisions and realize the consequences of decisions. The process is applied to issues in such fields as genetics, death and dying, reproduction, public policy and medical decision making. This course does not fulfill a laboratory science requirement.

BIO-121. General Biology I. 4 Credits.
LECT 3 hrs, LAB 3 hrs
An introduction to the biological sciences through a study of concepts basic to the biology science major. Topics include the fundamentals of chemistry, cell structure and function, and the nature of biological molecules, bioenergetics, protein synthesis and photosynthesis. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.
Prerequisites: Placement basis or MAT-016 and ENG-007 or ENG-025 or ENG-022
Additional Fees: Course fee applies.

BIO-122. General Biology II. 4 Credits.
LECT 3 hrs
A continuation of General Biology I. Topics include homeostasis, animal reproduction, embryonic development, genetics, ecology and evolution. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.
Prerequisites: BIO-121 or BIO-180 (Minimum grade of C)
Additional Fees: Course fee applies.

BIO-123. Cell Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Fall semester only. An introduction to the fundamentals of cellular biology. Topics covered are the nature of biologically important molecules, molecular synthesis, energetics, cellular structure and function, cell reproduction, heredity, and basic laboratory techniques for cellular study. All remedial courses must be completed prior to taking this course.
Prerequisites: Placement basis or MAT-016 and ENG-007 or ENG-025 or ENG-022
Additional Fees: Course fee applies.
BIO-127. Biology of Environmental Concerns. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. A survey of ecological issues from a variety of perspectives. The course provides an awareness of environmental problems, a knowledge of cause-and-effect relationships of diverse activities on this planet and the basis for making informed judgments about the potential solutions to environmental problems. Major topics include the roots of our environmental problems, introductory concepts in ecology, human population dynamics and control, food resources and world hunger, renewable and nonrenewable energy resources, mineral resources and solid waste, wild plant and animal resources, water resources, air pollution, water pollution, pesticides and pest control, economics, politics and the environment, world views, and ethics and the environment. This course fulfills the general education laboratory science requirement.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.

BIO-132. Concepts in Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. A basic introduction to the study of biological science. Topics include the hierarchy of organization, life processes, cell theory, human genetics, theories of evolution, biochemistry and some principles of ecology. This course fulfills the general education laboratory science requirement.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.

BIO-133. Human Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. An introduction to the body systems and the factors which affect human physiology. Lectures include the basic anatomy and physiology of the major systems plus discussion topics emphasizing nutrition, exercise, sexuality, genetic engineering and recent advances in biotechnology. This course fulfills the general education laboratory science requirement.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.

BIO-180. General Biology I - Honors. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Fall Semester only. This is an introduction to the biological sciences through a study of principles and concepts basic to the major discipline of biology. Topics include fundamentals of chemistry, cell structure and function, the nature of biological molecules, energetics, synthesis and the morphology and physiology of animals and plants. Dissection is required as part of the laboratory syllabus. Lecture and laboratory use an investigatory approach which will emphasize both written and oral communication skills.
Prerequisites: Placement basis or MAT-016 and ENG-007 or ENG-022 or ENG-025 and permission of department chair or honors advisor
Additional Fees: Course fee applies.

BIO-181. General Biology II - Honors. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Spring Semester only. A continuation of BIO-180 General Biology I Honors. Topics include homeostasis, animal reproduction and embryonic development, genetics, ecology, and evolution. Dissection is required as part of the laboratory syllabus. Lecture and laboratory use an investigatory approach that emphasizes both written and oral communication skills.
Prerequisites: BIO-180 or BIO-121 and permission of honors advisor
Additional Fees: Course fee applies.

BIO-201. Genetics. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Spring Semester only. Provides the student with a broad knowledge of genetics from the molecular to the organismal level. Topics covered include the molecular and Mendelian concepts of heredity and their relationship to cell function, development, population changes and evolution, and biotechnology. Laboratory exercises emphasize a variety of techniques and skills used in genetic research and testing.
Prerequisites: BIO-121 and BIO-122 or BIO-180 and BIO-181(Minimum grade of C required for all prerequisites)
Additional Fees: Course fee applies.

BIO-202. Ecology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Fall Semester only. This course introduces the basic fundamentals of ecology, the study of the interrelationships between organisms and their environment. Topics include an introduction to ecosystem structure and function, abiotic factors in ecosystems, energy flow and mineral cycling, population and evolutionary ecology, community ecology, a comprehensive survey of aquatic and terrestrial ecosystems, and human ecology. Laboratories and field trips are designed to introduce students to techniques used in basic ecological research.
Prerequisites: Minimum grade of C required for either BIO-121 or BIO-180 or LHT-110
Additional Fees: Course fee applies.

BIO-215. Microbiology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A comprehensive study of microorganisms, including viruses, bacteria, fungi, protozoa and algae. Topics covered include microbial anatomy, physiology, genetics, ecology and methods of control. Research methods and modern immunological concepts also are discussed. Laboratory exercises in basic microbiological techniques and the study of living microorganisms are designed to supplement the theory presented.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025 and BIO-101 or BIO-121 or BIO-123 or BIO-180 (minimum grade of C) and CHM-117 or CHM-125 and CHM-126 (minimum grade of C)
Additional Fees: Course fee applies.

BIO-223. Cell and Molecular Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A comprehensive study of biological molecules and their functions. Emphasis will be placed on the mechanism and regulation of macromolecule synthesis. Laboratory exercises will focus on instrumentation and techniques used in biological research.
Prerequisites: BIO-121 or BIO-123 and CHM-125 and CHM-126
Minimum grade of C required for all prerequisites
Additional Fees: Course fee applies.
BIO-226. Cooperative Work Experience - Biology. 3 Credits.
COOP 3 hrs
This course provides selected students enrolled in the Biotechnology or Biology Major with job-oriented laboratory training and practical work experience in an unpaid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chairperson by the end of their second semester. Offered Fall, Spring and Summer, day.
Prerequisites: Fourth semester status as a Biotechnology or Biology major and permission of department chair.

BIO-228. Internship Work Experience - Biology. 3 Credits.
COOP 3 hrs
This course provides selected students enrolled in the Biotechnology or Biology Major with job-oriented laboratory training and practical work experience in an unpaid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chairperson by the end of their second semester. Offered Fall, Spring and Summer, day.
Prerequisites: Fourth semester status as a Biotechnology or Biology major and permission of department chair.

BIO-233. Independent Study in Biology. 3 Credits.
LECT 3 hrs
An opportunity for selected students to participate in biological research under close supervision of the biology faculty. Interested students should make their interest known early in the prior semester to the department chair, who will familiarize the students with criteria for selection and the steps to be taken to gain entrance to this course. This course does not fulfill any of the science requirements in biology but is offered as a free elective.
Prerequisites: Permission of department chair.
Additional Fees: Course fee applies.

BIO-274. Pathophysiology. 3 Credits.
LECT 3 hrs
Pathophysiology is a course which studies the physiological alterations associated with common disease processes which affect human beings across the lifespan. Common diseases of the major organ systems are covered as well as such general issues as infection, neoplasm, inflammation, fluid and electrolyte imbalance, trauma, and shock.
Prerequisites: BIO-101 and BIO-102 and CHM-117 Minimum grade of C required for all prerequisites.

BIO-295. Special Topics in Biology. 4 Credits.
LECT 4 hrs
An examination of selected topics or issues in biology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Biology and permission of department chair.
Additional Fees: Course fee applies.

CHM-100. Elements of Chemistry. 3 Credits.
LECT 3 hrs
A one-semester, introductory 3-credit, non-laboratory course designed for students with little or no background in chemistry. Emphasis is on preparing students for General Chemistry and Introductory Chemistry courses. The course encompasses chemical principles and calculations with a brief review of algebra.
Prerequisites: MAT-016 - minimum grade of C required.

CHM-105. Forensic Science. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. An introduction to the applications of the physical and biological sciences in analyzing and evaluating physical evidence as related to crime and the law.
Additional Fees: Course fee applies.

CHM-117. Introductory Chemistry Lecture. 3 Credits.
RECI 1 hr, LECT 3 hrs
An introduction to the basic concepts of inorganic, organic and biochemistry. The emphasis is on the relationship of these concepts to physiological chemistry and living systems. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or MAT-016 (minimum grade of C) and ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-117.

CHM-118. Introductory Chemistry Laboratory. 1 Credit.
LAB 1 hr
Laboratory experiments illustrate principles studied in CHM-117. Required for Landscape and Horticultural Technology, liberal arts majors and some Allied Health programs.
Prerequisites: Placement basis or MAT-016 (minimum grade of C) and ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-117.

CHM-125. General Chemistry I - Lecture. 3 Credits.
RECI 1 hr, LECT 3 hrs
A study of the fundamental principles of chemistry and their application to chemical reactions. Topics include the structure of the atom, concepts of matter, mass relationships for pure substances and chemical reactions, solutions, electronic structure, the chemical bond, nuclear reactions and gases. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement College Level Math test or MAT-110 (minimum grade of C) and Placement basis or ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-126.

CHM-126. General Chemistry I - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments illustrate principles studied in CHM-125. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement College Level Math test or MAT-110 (minimum grade of C) and Placement basis or ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-125

CHM-127. General Chemistry II - Lecture. 3 Credits.
RECI 1 hr, LECT 3 hrs
A continuation of General Chemistry I with emphasis on chemical equilibrium and energy changes in chemical reactions. Also included are acids, bases, buffers, chemical thermodynamics, kinetics, qualitative analysis and electrochemistry. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-125 (minimum grade of C), CHM-126 and placement basis or ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-128.
CHM-128. General Chemistry II - Laboratory. 1 Credit.  
LAB 3 hrs  
Laboratory experiments illustrate principles studied in CHM-127. All remedial courses listed must be completed prior to taking this course.  
Prerequisites: CHM-125 and CHM-126 (minimum grade of C required for both) and placement basis or ENG-007 or ENG-022 or ENG-025  
Corequisites: CHM-127  
Additional Fees: Course fee applies.  
CHM-136. Environmental Regulation. 3 Credits.  
LECT 3 hrs  
This course is an overview of critical environmental issues encountered by industry from a regulatory perspective. Various federal and New Jersey state regulations pertaining to air, water, hazardous waste and hazardous materials management are investigated. Students acquire knowledge on how industry complies with the diversity of regulatory requirements. Students are exposed to examples of instances where industrial non-compliance with applicable regulations has led to deleterious environmental and occupational health effects. Current issues and their significance to environmental and occupational health are discussed including, Clean Water Act, Clean Air Act, Environmental Cleanup and Responsibility Act (ECRA), Resource Conservation and Recovery Act (RCRA), Occupational Safety and Health Act (OSHA), Toxic Substance Control Act (TSCA), Asbestos, indoor air quality and underground storage tanks.  
Prerequisites: BIO-123 and CHM-125.  
CHM-204. Principles of Occupational Health and Safety. 3 Credits.  
LECT 3 hrs  
A survey course providing an overview of industrial hygiene and the roles that the industrial hygiene professional plays in recognizing, evaluating and controlling hazards in the workplace. This course provides an introduction to the qualitative and quantitative issues essential to comprehend occupational safety and health principles. Case studies and hands-on exercises are utilized to stress key concepts.  
CHM-210. Essentials of Organic Chemistry. 4 Credits.  
LECT 3 hrs, LAB 3 hrs  
Summer Semester only. This course is the study of the basic principles of structure, reactivity and nomenclature in organic chemistry. The laboratory develops basic work skills in the types of experiments performed in a typical organic chemistry laboratory with emphasis on the safe handling of laboratory chemicals and the proper presentation of experimental results.  
Prerequisites: CHM-117 and CHM-118 or CHM-127 and CHM-128 (minimum grade of C for all prerequisites)  
Additional Fees: Course fee applies.  
CHM-212. Biochemistry. 4 Credits.  
LECT 3 hrs, LAB 3 hrs  
An introduction to physiological chemistry. Lectures cover amino acids, proteins, lipids, nucleic acids, carbohydrates, molecular genetics, energetics and metabolic pathways. Lab reinforces concepts covered in lecture. All remedial courses listed must be completed prior to taking this course.  
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-117 (minimum grade of C) or CHM-125 (minimum grade of C)  
Additional Fees: Course fee applies.  
CHM-219. Quantitative Chemical Analysis. 5 Credits.  
LECT 3 hrs, LAB 6 hrs  
Fall Semester only. Principles of modern quantitative methods in chemistry, including the study of chemical equilibria, solubility, acidity and complex formation. The laboratory work involves practical applications of inorganic and organic analysis including volumetric, gravimetric, chromatographic and instrumental techniques. Emphasis is placed on the statistical treatment of data and report writing. All remedial courses listed must be completed prior to taking this course.  
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 (minimum grade of C) or equivalent  
Additional Fees: Course fee applies.  
CHM-220. Instrumental Methods of Analysis. 5 Credits.  
LECT 3 hrs, LAB 6 hrs  
Spring Semester only. This course covers theory and applications of modern instrumentation utilized to solve problems in chemical analysis. Laboratory work involves hands-on experience utilizing instruments such as gas(GC), liquid(HPLC) and ion chromatography; spectrophotometric methods including visible, ultraviolet, infrared(FTIR)and atomic absorption; ICP and other methods, including ion selective electrode methods; and electrophoretic methods including capillary electrophoresis(HPCE). Emphasis is placed on the comparison of methods, the collection and interpretation of laboratory data, technical report writing and record keeping. All remedial courses listed must be completed prior to taking this course.  
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 or equivalent (minimum grade of C)  
Additional Fees: Course fee applies.  
CHM-228. Cooperative Work Experience - Chemistry. 3 Credits.  
COOP 3 hrs  
This course provides selected students enrolled in the Chemical Technology or Chemistry programs with job-oriented laboratory training and practical work experience in a paid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chair by the end of their second semester. Offered Fall, Spring and Summer, day.  
Prerequisites: Fourth semester status as a Chemical Technology or Chemistry major and permission of department chair.  
CHM-229. Internship Work Experience - Chemistry. 3 Credits.  
COOP 3 hrs  
This course provides selected students enrolled in the Chemical Technology or Chemistry Major with job-oriented laboratory training and practical work experience in an unpaid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chairperson by the end of their second semester. Offered Fall, Spring and Summer, day.  
Prerequisites: Fourth semester status as a Chemical Technology or Chemistry major and permission of department chair.
CHM-231. Organic Chemistry I - Lecture. 3 Credits.
LECT 3 hrs
This course is an introduction to the chemistry of carbon compounds. Topics include a study of the fundamental concepts of structure and stereochemistry, physical properties of organic compounds and a functional approach to the interpretation of organic reactions. This course is designed for majors in Biology, Chemistry, Pharmacy, and for students preparing for medical, dental and veterinary schools. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 (minimum grade of C) and CHM-128 (minimum grade of C)
Corequisites: CHM-232.

CHM-232. Organic Chemistry I - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments stress techniques involved in the synthesis and purification of typical organic compounds using both macroscale and microscale techniques. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 (minimum grade of C) and CHM-128 (minimum grade of C)
Corequisites: CHM-231
Additional Fees: Course fee applies.

CHM-233. Organic Chemistry II - Lecture. 3 Credits.
LECT 3 hrs
A continuation of the study of organic compounds with further study of functional groups, reaction mechanisms including nucleophilic substitution and elimination reactions, and infrared and nuclear magnetic resonance spectroscopy. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-231 (minimum grade of C) and CHM-232 (minimum grade of C)
Corequisites: CHM-234.

CHM-234. Organic Chemistry II - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments involve the multi-step synthesis of organic compounds, which illustrate the principles of CHM-233, using macroscale and microscale techniques. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-231 (minimum grade of C) and CHM-232 (minimum grade of C)
Corequisites: CHM-233
Additional Fees: Course fee applies.

CHM-235. Independent Study in Chemistry. 3 Credits.
LECT 3 hrs
This course is an opportunity for selected students to participate in independent research under close supervision of a Chemistry faculty member. Interested students should make their interest known early in the prior semester to the department chair who will detail the criteria for selection.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CHM-295. Special Topics in Chemistry. 4 Credits.
LECT 3 hrs, LAB 3 hrs
An examination of selected topics or issues in chemistry. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Chemistry and permission of department chair
Additional Fees: Course fee applies.

CHM-296. Special Topics in Chemistry. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in chemistry. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Chemistry and permission of department chair.

MAT-006. Elements of Algebra. 0 Credits.
LECT 2 hrs, RECI 1 hr
Elements of Algebra integrates the fundamental operations of arithmetic and introductory Algebra. It is intended for students whose placement examination indicates a need for a review of arithmetic and basic Algebra skills. Topics include operations on whole numbers, fractions, decimals, percent and signed numbers, linear equations and inequalities in one variable, operations on polynomials, factoring, integer exponents, and graphing. The course incorporates a Support Lab where students will receive personal assistance with problems or questions assigned as homework to supplement the lectures.
Prerequisites: Appropriate score on a placement test
Additional Fees: Course fee applies.

MAT-007. Foundations of Algebra. 0 Credits.
LECT 2 hrs
This course integrates selected topics of arithmetic and introductory algebra, including operations on whole numbers, fractions, decimals, percent and signed numbers, linear equations and inequalities in one variable, operations on polynomials, factoring, integer exponents, and graphing. Students are required to complete a series of laboratory assignments, which are designed to reinforce concepts based on the placement test results.
Prerequisites: Appropriate score on a placement test.

MAT-009. Basic Mathematics Ia. 0 Credits.
LECT 1 hr
Three (3) hours per day for one week. This is an intensive one-week review of topics typically found on the computation placement test. A passing grade satisfies the Basic Mathematics requirement.
Prerequisites: Appropriate score on a placement test.

MAT-010. Basic Algebra 1A. 0 Credits.
LECT 1 hr
This is an intensive review of topics typically found on the basic algebra placement test. A passing grade satisfies the Basic Algebra requirement.
Prerequisites: Appropriate score on a placement test.

MAT-011. Basic Mathematics I. 0 Credits.
LECT 3 hrs
A preparatory course designed for students who need additional practice and review in arithmetic.
MAT-014. Basic Algebra I. 0 Credits.
LECT 3 hrs
A preparatory course in elementary algebra which includes rational numbers, polynomials, algebraic operations, first-degree equations, graphing, systems of linear equations, problem solving and an introduction to the quadratic equations.
Prerequisites: MAT-009 or MAT-011 and permission of department chair.

MAT-016. Intermediate Algebra. 0 Credits.
LECT 3 hrs
A second-level preparatory algebra course designed to prepare students for credit-level mathematics courses. Covered are selected topics, including systems of linear equations, polynomials, factoring, rational expressions, radicals and solving quadratic equations.
Prerequisites: MAT-007 or equivalent Minimum grade P.

MAT-050. Fundamentals of Mathematics. 0 Credits.
LECT 5 hrs
This course integrates selected topics of arithmetic and introductory algebra, including computation, topics in geometry, operations on signed numbers, solving linear equations in one variable, operations on polynomials, factoring, integer exponents and graphing.
Prerequisites: Appropriate score on a placement test.

MAT-060. Fundamentals of Algebra. 0 Credits.
LECT 6 hrs
An intensive one-semester course to prepare students for credit mathematics courses. Topics include computation, polynomials, exponents, linear equations, factoring, rational expressions, radicals and solving quadratic equations.
Prerequisites: Appropriate score on a placement test or permission of department chair.

MAT-110. College Algebra. 3 Credits.
LECT 3 hrs
An intensive course designed to prepare students for mathematics courses such as Calculus with Applications to Business and Economics and Precalculus. It covers selected algebra topics including exponents; rational expressions; polynomials, radicals, relations and functions; exponential and logarithmic functions, systems of equations.
Prerequisites: MAT-016 or MAT-060 (grade C or better) or equivalent.

MAT-113. Applied Calculus. 4 Credits.
LECT 4 hrs
A study of topics which provides a basis for continuing courses in mathematics and the physical sciences. This course includes trigonometric, exponential and logarithmic functions; analytic geometry; differentiation and integration.
Prerequisites: MAT-110 or MAT-123 or equivalent.

MAT-117. Mathematical Analysis for Business and Economics. 3 Credits.
LECT 3 hrs
Mathematical topics used in business and economics with emphasis on applications. Covered are polynomials, linear and quadratic models, systems of equations, matrix algebra, and linear programming including the Simplex Method.
Prerequisites: MAT-016, MAT-060 (grade of C or better) or equivalent.

MAT-118. Calculus With Application to Business And Economics. 3 Credits.
LECT 3 hrs
A course covering functions, derivatives and integration, with special consideration of applications to the business and economics areas. Partial differentiation is introduced.
Prerequisites: MAT-110 (grade of C or better) or equivalent.

MAT-120. Mathematics for the Liberal Arts. 4 Credits.
LECT 4 hrs
A course addressed to liberal arts students. Topics include the history of mathematics, probability, statistics, geometry, number theory, algebra, graphs and functions, and a choice of selected topics.
Prerequisites: MAT-007, MAT-014, MAT-050 or equivalent.

MAT-123. Precalculus. 4 Credits.
LECT 4 hrs
An intensive one-semester course to prepare students for Analytic Geometry and Calculus, including absolute values; relations; functions; equations; inequalities; polynomial, rational, trigonometric, inverse trigonometric, exponential and logarithmic functions; trigonometric equations and identities; and graphs.
Prerequisites: MAT-110 (grade of C or better) or equivalent.

MAT-124. Statistics. 3 Credits.
LECT 3 hrs
The fundamental principles of statistical methods. Descriptive statistics, correlation, regression, probability, binomial and normal distributions, sampling, elementary hypothesis testing, confidence intervals and ethical issues in statistics are included.
Prerequisites: MAT-016, MAT-060, MAT-120 or equivalent.

MAT-130. Probability and Statistics. 4 Credits.
LECT 3 hrs
The fundamental principles of statistical methods. Descriptive statistics, correlation, regression, probability, binomial and normal distributions, sampling, hypothesis testing, confidence intervals and ethical issues in statistics are included. An introduction to the use of statistical software to analyze data will be emphasized.
Prerequisites: MAT-016, MAT-060 or MAT-120 or equivalent.

MAT-131. Analytic Geometry and Calculus I. 4 Credits.
LECT 4 hrs
The first semester of a three-semester sequence. Analytic geometry in the plane, differentiation and applications, and integration are covered.
Prerequisites: MAT-123 (grade of C or better) or equivalent.

MAT-132. Analytic Geometry and Calculus II. 4 Credits.
LECT 4 hrs
A continuation of Analytic Geometry and Calculus I, which covers the calculus of inverse trigonometric functions, methods of integration, analytic geometry in the plane including polar coordinates and conic sections, hyperbolic functions, sequences and series, and parametric equations.
Prerequisites: MAT-131 (grade of C or better) or equivalent.
MAT-140. Math for Radiographers. 1 Credit.
LECT 1 hr
This course discusses the math skills that are crucial in the healthcare environment. It teaches the basis measurements, calculations, percents, ratios, and proportions, scientific notation, metric conversions, basic algebraic principles and basic geometric principles used in Radiology. It reviews whole numbers, fractions, decimals and exponents. Radiology units and numeric prefixes are also discussed.
Prerequisites: MAT-016 or MAT-060 and admission to the Radiography program
Corequisites: RAD-100, RAD-104 and RAD-107.

MAT-183. Honors Probability and Statistics. 4 Credits.
LECT 4 hrs
An introduction to the principles of statistical methods. The course will integrate spreadsheet software to cover such topics as descriptive statistics, correlation, regression, probability, binomial and normal distributions, sampling, elementary hypothesis testing and confidence intervals. This course will also cover ethical issues in statistics. Comprehensive case studies will be covered throughout the semester. An introduction to the use of statistical software to analyze large data sets will be emphasized.
Prerequisites: Permission of department chair or honors advisor.

MAT-210. Probability and Statistics II. 4 Credits.
LECT 4 hrs
This course is a continuation of statistical analysis from Probability and Statistics. Techniques for collection and analysis of data emphasizing estimation and hypothesis testing, analysis of variance and regression analysis are included. Also included are nonparametric testing and an introduction to multiple regression. A focus on analyzing large data sets using statistical software.
Prerequisites: MAT-124 or MAT-130 or MAT-183 or equivalent (grade of C or better).

MAT-225. Discrete Mathematics. 4 Credits.
LECT 4 hrs
This is a 4-credit course in discrete mathematics. It is offered to math & computer science majors in their first two years of study. The course outline shows it is an exposition of real-world and modern mathematics. Discrete Mathematics covers a breadth of unique topics in number theory, graph theory, set theory, probability and statistics, and propositional logic.
Prerequisites: MAT-131.

MAT-228. Linear Algebra. 3 Credits.
LECT 3 hrs
Selected topics including matrices and determinants, vectors and vector spaces, linear transformations, eigenvalues and eigenvectors, with applications from a variety of disciplines.
Prerequisites: MAT-132 (grade of C or better) or equivalent.

MAT-230. Calculus III. 4 Credits.
LECT 4 hrs
A continuation of Analytic Geometry and Calculus II which includes analytic geometry in three dimensions, functions of several variables, partial derivatives, multiple integrals, vectors and an introduction to vector analysis.
Prerequisites: MAT-132 (grade of C or better) or equivalent.

MAT-232. Differential Equations. 3 Credits.
LECT 3 hrs
Ordinary differential equations and methods of solution. Introduction to classical equations and their solutions, with some applications to geometry, physics and engineering.
Prerequisites: MAT-132 (grade of C or better) or equivalent.

MAT-270. Numbers and Operations for Middle Grades. 3 Credits.
LECT 3 hrs
This course prepares middle-grades mathematics teachers with a concrete understanding of numbers, number systems, operations with fractions, decimals and percent; there is special consideration to ratios, proportions, factors and multiples and including instructional techniques and calculator-structured lessons.
Prerequisites: Permission of department chair and Elementary School or N-2 subject matter endorsement.

MAT-271. Algebra for Middle Grades. 3 Credits.
LECT 3 hrs
This course explores topics from pre-algebra and algebra. The course prepares middle-grades mathematics teachers with a concrete understanding of patterns, relationships and functions, polynomials, algebraic operations, first degree equations, graphing and systems of linear equations and linear inequalities and including instructional techniques and calculator-structured lessons.
Prerequisites: Permission of department chair and Elementary School or N-2 subject matter endorsement.

MAT-272. Mathematics for Middle Grades. 3 Credits.
LECT 3 hrs
This course explores topics including history of mathematics, algebra, probability and statistics while infusing instructional techniques and uses of technology.
Prerequisites: Permission of department chair and Elementary School or N-2 subject matter endorsement.

MAT-273. Statistics for Middle Grades. 3 Credits.
LECT 3 hrs
An introduction to statistical methods and reasoning as applied to practical problems. Topics include collecting and summarizing data, histograms and other types of graphs, descriptive statistics, normal distributions, sampling, surveys, use of computers in statistics and interpretation of data.
Prerequisites: Permission of department chair and Elementary School or N-2 subject matter endorsement.

MAT-274. Geometry for Middle Grades. 3 Credits.
LECT 3 hrs
This course includes topics in geometry and measurements with use of Geometer Sketchpad Software. Formulas for perimeter, area, and volume for polygons and polyhedrons, properties of parallel lines and perpendicular lines, fundamental topics of measurements, measurement instruments, measurement errors are covered while infusing instructional techniques.
Prerequisites: Permission of department chair and Elementary School or N-2 subject matter endorsement.

Teacher Education

County College of Morris (CCM) offers 10 Teacher Education specializations designed to meet the requirements of the first two years of a baccalaureate-level teacher education program in elementary or secondary education (K-12). Teacher education
programs at four-year colleges and universities in New Jersey require that students pursue a major in an academic discipline in addition to professional education courses that are required for teacher certification. Students planning to pursue a teaching degree at a four-year college or university should enroll in one of the following CCM programs that will provide the foundation teacher education courses, as well as courses in the student’s intended major at the four-year college: Biology, Chemistry, English, History, Mathematics, Physical Education, Psychology, Sociology, Spanish, Visual Arts.

Students in the Teacher Education Specializations are advised by the Teacher Education advisor or by faculty advisors in each of the 10 areas of specialization. Students are required to maintain a 3.0 GPA or better in order to remain in the Teacher Education Program at CCM.

CCM's Teacher Education program follows the curricular model of teacher education typical at many four-year colleges. However, both general and professional education requirements often differ from college to college. Therefore, students are strongly encouraged to review the education program requirements with the four-year college BEFORE selecting courses at CCM.

Students may visit CCM’s Transfer Office (SCC 118) for assistance.

Articulation Agreements

Students should check with the Transfer Office about articulation agreements with this program.

For more information, visit the Teacher Education [website](http://www.ccm.edu/academics/degrees/teachered.aspx).

**Degrees**

- AS Teacher Education - Biology Education Track (p. 216)
- AS Teacher Education - Chemistry Education Track (p. 216)
- AA Teacher Education - English Education Track (p. 217)
- AS Teacher Education - Exercise Science Health/Physical Education Track (p. 217)
- AS Teacher Education - Mathematics Education Track (p. 218)
- AA Teacher Education - Social Studies (History) Education Track (p. 218)
- AA Teacher Education - Social Studies (Psychology) Education Track (p. 219)
- AA Teacher Education - Social Studies (Sociology) Education Track (p. 219)
- AA Teacher Education - Spanish Education Track (p. 220)
- AFA Teacher Education - Visual Arts Education Track (p. 220)

**Biology Education Track**

**Associate in Science Degree**

(P2160 TEBIO)

Note: Biology education majors requiring developmental courses in math must complete MAT-016 Intermediate Algebra prior to taking courses in Biology and Chemistry.

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (Biology) and professional education courses. Students are advised by either the Teacher Education advisor or by a faculty advisor from the Biology and Chemistry department.

**General Education Foundation**

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<th>Course</th>
<th>Credits</th>
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<tr>
<td>ENG-111 English Composition I</td>
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<td>ENG-112 English Composition II</td>
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<tr>
<td>MAT-123 Precalculus</td>
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<tr>
<td>COM-109 Communication</td>
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<td>CHM-125 General Chemistry I - Lecture</td>
<td>4</td>
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<td>CHM-126 General Chemistry I - Laboratory</td>
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<td>CHM-127 General Chemistry II - Lecture</td>
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<td>CHM-128 General Chemistry II - Laboratory</td>
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<td>BIO-121 General Biology I</td>
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**Biology Education Core**

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<td>BIO-202 Ecology (Fall Only)</td>
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**Total Credits**

64-65

**Chemistry Education Track**

**Associate in Science Degree**

(P2152 TECHM)

Note: Chemistry education majors requiring developmental courses in math must complete MAT-016 Intermediate Algebra prior to taking courses in Biology and Chemistry.

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (Chemistry) and professional education courses. Students are advised by either the Teacher Education advisor or by a faculty advisor from the Chemistry and Biology department.

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**Chemistry Education Core**

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<td>HED-286 Personal Health and Wellness</td>
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<td>EDU-111 Teaching in America</td>
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<td>EDU-211 Behavior Observation in Education</td>
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<td>PSY-217 Educational Psychology</td>
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**Total Credits**

64-65
This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (Chemistry) and professional education courses. Students are advised by either the Teacher Education advisor or by a faculty advisor from the Biology and Chemistry department.

### General Education Foundation

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<td>Communication</td>
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<td>ENG-111 English Composition I</td>
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<td>ENG-112 English Composition II</td>
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<td>COM-109 Speech Fundamentals</td>
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<td>Math-Science-Technology</td>
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<td>MAT-123 Precalculus</td>
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<td>CMP-101 Computer Information Literacy</td>
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<td>Social Science</td>
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<td>PSY-113 General Psychology</td>
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<td>See curriculum checksheet for History elective choices</td>
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<td>General Education Electives</td>
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<td>Literature Survey or Language Sequence</td>
<td></td>
</tr>
</tbody>
</table>

**General Education Foundation Credits**: 32-33

### Chemistry Education Core

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM-125</td>
<td>General Chemistry I - Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHM-126</td>
<td>General Chemistry I - Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHM-127</td>
<td>General Chemistry II - Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHM-128</td>
<td>General Chemistry II - Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHM-231</td>
<td>Organic Chemistry I - Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHM-232</td>
<td>Organic Chemistry II - Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHM-233</td>
<td>Organic Chemistry II - Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHM-234</td>
<td>Organic Chemistry II - Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>MAT-131</td>
<td>Analytic Geometry and Calculus I</td>
<td>4</td>
</tr>
</tbody>
</table>

**Chemistry Education Core Credits**: 20

### Teacher Education Core

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HED-286</td>
<td>Personal Health and Wellness</td>
<td>3</td>
</tr>
<tr>
<td>PSY-217</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>EDU-111</td>
<td>Teaching in America</td>
<td>3</td>
</tr>
<tr>
<td>EDU-211</td>
<td>Behavior Observation in Education</td>
<td>3</td>
</tr>
</tbody>
</table>

**Teacher Education Core Credits**: 12

### English Core

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG-246</td>
<td>English Classics From Beowulf to Paradise Lost: a Survey of Drama, Romances and Epics</td>
<td>3</td>
</tr>
<tr>
<td>ENG-247</td>
<td>Romantics, Victorians and Moderns- Major British Writers of the 19th and 20th Centuries</td>
<td>3</td>
</tr>
</tbody>
</table>

**English Core Credits**: 6

### Total Credits

**Total Credits**: 64-65

Science courses completed by students prior to entering the Chemistry option must be less than seven years old. If the science courses exceed the seven-year limit, students can prove their competency by testing or they must retake courses.

**Exercise Science Health/Physical Education Track**

**Associate in Science Degree**

(P2960 TEPED)

This program is designed for transfer to a four-year program leading to careers in Physical Education. Students will be advised by the
Teacher Education advisor or a faculty advisor from the Health and Physical Education Department.

**General Education Foundation**

Communication 9  
ENG-111 English Composition I  
ENG-112 English Composition II  
COM-109 Speech Fundamentals  
Math-Science-Technology 10-11  
Mathematics Restricted Elective (3-4 credits)  
CMP-135 Computer Concepts with Applications  
Science Restricted Elective - see curriculum checklist for choices  
Social Science 3  
PSY-113 General Psychology  
Humanities 3  
Choose from General Education course list Humanities or Social Science section  
General Education Electives 8  
BIO-101 Anatomy and Physiology I  
BIO-102 Anatomy and Physiology II  
General Education Foundation Credits 33-34  

**Teacher Education Physical Education Core**

HES-111 Introduction to Exercise Science 3  
HED-115 Personal and Family Nutrition 3  
HED-286 Personal Health and Wellness 3  
HES-211 Kinesiology 3  
HED-295 First Aid and Emergency Care 3  
HED-283 Cardiopulmonary Resuscitation 1  
HES-212 Exercise Physiology 3  
HES-213 Exercise Measurement and Prescription 3  
PSY-217 Educational Psychology 3  
EDU-111 Teaching in America 3  
EDU-211 Behavior Observation in Education 3  
Exercise Science Restricted Electives 2  
Teacher Education Physical Education Core Credits 33  

Total Credits 66-67

**Mathematics Education Track**

**Associate in Science Degree**  
(P2150 TEMAT)

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (Mathematics) and professional education courses. Students are advised by the Teacher Education advisor or a faculty advisor from the Mathematics department.

**General Education Foundation**

Communication 6  
ENG-111 English Composition I  
ENG-112 English Composition II  
COM-109 Speech Fundamentals  
Math-Science-Technology 12  
Choose from General Education course list Mathematics

**Teacher Education Core**

EDU-111 Teaching in America 3  
EDU-211 Behavior Observation in Education 3  
MAT-228 Linear Algebra 3  
HED-286 Personal Health and Wellness 3  
PSY-217 Educational Psychology 3  
Teacher Education Core Credits 15  

Total Credits 62-63

**Social Studies (History) Education Track**

**Humanities/Social Science Associate in Arts Degree**  
(P1130 TEHIS)

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (History) and professional education courses. Students are advised by the Teacher Education advisor or a faculty advisor from the History and Political Science department.

**General Education Foundation**

Communication 9  
ENG-111 English Composition I  
ENG-112 English Composition II  
COM-109 Speech Fundamentals  
Math-Science-Technology 12  
Choose from General Education course list Mathematics
**Laboratory Science**

- Technology
- Social Science
- PSY-113 General Psychology
- SOC-120 Principles of Sociology

**Humanities**

- Choose from General Education course list Humanities Section
- Literature Survey or Language Sequence
- Humanities Elective

**History**

- Select one of the following:
  - HIS-166 Emergence of America - U.S. History I
  - HIS-167 and Twentieth Century American History - U.S. History II
  - HIS-113 Early Modern Europe
  - HIS-114 and Modern Europe

**Diversity**

- Choose from General Education course list Diversity section

**General Education Foundation Credits**

- 45

**Teacher Education Core**

- EDU-111 Teaching in America
- EDU-211 Behavior Observation in Education
- PSY-217 Educational Psychology
- HED-286 Personal Health and Wellness

**Teacher Education Core Credits**

- 12

**History Core and Free Elective**

- HIS-204 History of the African-American Experience
- or HIS-209 History of American Women
- Free Elective

**History Core and Free Elective Credits**

- 6

**Total Credits**

- 63

---

**Social Studies (Psychology) Education Track**

**Humanities/Social Science Associate in Arts Degree**

*(P1130 TEPSY)*

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (Psychology) and professional education courses. Students are advised by the Teacher Education advisor or a faculty advisor from the Psychology and Education department.

**General Education Foundation**

- Communication
  - ENG-111 English Composition I
  - ENG-112 English Composition II
  - COM-109 Speech Fundamentals

**Math-Science-Technology**

- Choose from General Education course list

**Social Studies (Sociology) Education Track**

**Humanities/Social Science Associate in Arts Degree**

*(P1130 TESOC)*

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (Sociology) and professional education courses. Students are advised by the Teacher Education advisor or a faculty advisor from the Sociology, Economics and Anthropology department.

**General Education Foundation**

- Communication
  - ENG-111 English Composition I
  - ENG-112 English Composition II
  - COM-109 Speech Fundamentals

**Math-Science-Technology**

- Choose from General Education course list

**Social Science**

- PSY-113 General Psychology
- SOC-120 Principles of Sociology

**Humanities**

- Literature Survey or Language Sequence
- Humanities Elective (choose from the General Education course list Humanities section)
See curriculum checksheet for History sequence choices

History 6
  Choose from General Education course list
Diversity 3
  Choose from General Education course list Diversity section

General Education Foundation Credits 45

Teacher Education Core
EDU-111 Teaching in America 3
EDU-211 Behavior Observation in Education 3
PSY-217 Educational Psychology 3
HED-286 Personal Health and Wellness 3
Teacher Education Core Credits 12

Education Specialization Core
SPN-219 Advanced Spanish Composition 3
Choose from Specialization Core list
SPN-220 Spanish Literature 3
Education Specialization Core Credits 6

Total Credits 63

Spanish Education Track

Humanities/Social Science Associate in Arts Degree
(P1130 TESPN)

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (Spanish) and professional education courses. Students are advised by the Teacher Education advisor or a faculty advisor from the Languages and ESL department.

General Education Foundation

Communication 9
  ENG-111 English Composition I
  ENG-112 English Composition II
  COM-109 Speech Fundamentals
Math-Science-Technology 12
  Choose from General Education course list
Mathematics
Laboratory Science
Technology
Social Science 6
  PSY-113 General Psychology
  SOC-120 Principles of Sociology
Humanities 9
  SPN-218 Advanced Spanish Conversation
  SPN-223 Survey of Latin American Literature: Pre-Columbian to the Present
Humanities Elective
  Choose from General Education course list Humanities section
History 6
  See curriculum checksheet for History sequence choices
Diversity 3

General Education Foundation Credits 45

Teacher Education Core
EDU-111 Teaching in America 3
EDU-211 Behavior Observation in Education 3
PSY-217 Educational Psychology 3
HED-286 Personal Health and Wellness 3
Teacher Education Core Credits 12

Education Specialization Core
SPN-219 Advanced Spanish Composition 3
Choose from Specialization Core list
SPN-220 Spanish Literature 3
Education Specialization Core Credits 6

Total Credits 63

Visual Arts Education Track

Associate in Fine Arts Degree
(P4140 TEART)

This program is designed for transfer to a four-year program leading to certification for teaching and requires an academic major (Art) and professional education courses. Students are advised by the Teacher Education advisor or a faculty advisor from the Visual Arts department.

General Education Foundation

Communication 9
  ENG-111 English Composition I
  ENG-112 English Composition II
  COM-109 Speech Fundamentals
Math-Science-Technology 7-9
  Choose from General Education course list
Mathematics Elective
Laboratory Science Elective
Technology
Social Science 3
  PSY-113 General Psychology
General Education Courses 6
  ART-133 Art History I
  ART-134 Art History II
General Education Foundation Credits 25-27

Teacher Education Core
EDU-111 Teaching in America 3
EDU-211 Behavior Observation in Education 3
PSY-217 Educational Psychology 3
HED-286 Personal Health and Wellness 3
Teacher Education Core Credits 12

Visual Arts Core
ART-122 Drawing I 3
ART-123 Drawing II 3
ART-124 Figure Drawing 3
ART-130 Two Dimensional Design 3
ART-131 Color Theory 3
ART-132  Three Dimensional Design  3
ART-219  Painting I  3
ART-228  Sculpture I  3
or ART-241  Ceramics I  3
ART-230  Portfolio & Presentation  3
Visual Arts Core Credits  27
Total Credits  64-66

Faculty

Diana Aria
Assistant Professor, Psychology and Education
Special Projects Faculty, Teacher Education
Ed.S. Philadelphia College of Osteopathic Medicine
M.S. Philadelphia College of Osteopathic Medicine
B.A. Elizabethtown College
DH 323  973-328-5601  daria@ccm.edu

Courses

EDU-111. Teaching in America. 3 Credits.
LECT 3 hrs
This course presents the historical and philosophical foundations of American education and how they relate to contemporary issues facing teachers in America today. The goal is to provide students with a comprehensive understanding of the development of the teaching profession including both its roots and modern-day direction. The course offers theoretical and practical learning experiences including five hours of field experiences in public schools.
Prerequisites: All basic skills/remediation in English must be completed. GPA of 3.0 or higher and permission of the department chair or advisor (via petition).
Corequisites: PSY-113.

EDU-211. Behavior Observation in Education. 3 Credits.
LECT 3 hrs
This course uses weekly seminars and 20 hours of field experience in public schools to integrate theory and classroom observations in order for prospective teachers to understand curriculum development and instructional methods. Aspiring teachers learn how to use descriptive research methods to gain insight into the instructional needs of learners by observing them in their natural classroom settings. Armed with this experiential knowledge, students will use the seminar to report and discuss their observed findings, as well as relate this practical information to the theories of curriculum development and instructional strategies.
Prerequisites: EDU-111, PSY-113 and permission of department chair or advisor (via petition). Cumulative GPA of 3.0 or higher
Corequisites: PSY-217.

Technical Studies

Associate in Applied Science Degree

The focus of this program is to provide a vehicle for alternately trained professionals to attain their educational goals by awarding credit for those training, internship, apprenticeship and other educational experiences that can be adequately evaluated and measured.


Degrees

AAS Technical Studies
(P3510)

General Education Foundation

Communication 6
ENG-111  English Composition I
ENG-112  English Composition II
Math-Science-Technology 3-4
MAT-110  College Algebra
or MAT-124  Statistics
or MAT-130  Probability and Statistics
Social Science 3
SOC-120  Principles of Sociology
General Education Electives 12
Humanities Elective 1
Humanities Elective 2
Science Elective
PSY-113  General Psychology
General Education Foundation Credits 24-25

Technical Studies Core

Select from one of the following concentrations: 1 39
Computer Information Systems
Digital Media Technology
Telecommunications
Electronic Technology
Mechanical Technology
Electro/Mechanical Technology
Fire Science Technology
Technical Studies Core Credits 39
Total Credits 63-64

Three to 25 Technical Studies elective credits may be earned for corporate, industrial or military training programs after review by faculty assessor of related program.

1 Individuals must select at least four courses in one of the concentrations listed below to satisfy the Technical Studies credit requirements.

Select from one of the following concentrations:

Computer Information Systems
CMP-120  Foundations of Information Security
CMP-123  Systems Analysis and Design
CMP-124  Network Security
CMP-125  Information Security Management
CMP-128  Computer Science I
CMP-129  Computer Science II
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMP-200</td>
<td>Computer Operating Systems and Utilities</td>
</tr>
<tr>
<td>CMP-203</td>
<td>Computer Software Applications (ms Office)</td>
</tr>
<tr>
<td>CMP-205</td>
<td>Database Programming (MS Access)</td>
</tr>
<tr>
<td>CMP-207</td>
<td>Electronic Spreadsheets (MS Excel)</td>
</tr>
<tr>
<td>CMP-209</td>
<td>Introduction to UNIX</td>
</tr>
<tr>
<td>CMP-237</td>
<td>Visual Basic (VB.Net)</td>
</tr>
<tr>
<td>CMP-239</td>
<td>The Internet and Web Page Design</td>
</tr>
<tr>
<td>CMP-243</td>
<td>Ethical Hacking and Systems Defense</td>
</tr>
<tr>
<td>MED-110</td>
<td>Multimedia I</td>
</tr>
<tr>
<td>MED-113</td>
<td>Multimedia II</td>
</tr>
<tr>
<td>MED-114</td>
<td>Media Aesthetics</td>
</tr>
<tr>
<td>MED-119</td>
<td>Digital Media Production</td>
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<tr>
<td>MED-210</td>
<td>Digital Video Editing</td>
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<tr>
<td>MED-213</td>
<td>Multimedia Authoring and Design</td>
</tr>
<tr>
<td>MED-220</td>
<td>Animation</td>
</tr>
<tr>
<td>MED-240</td>
<td>Advanced Animation</td>
</tr>
<tr>
<td>CMP-108</td>
<td>Game Design Concepts</td>
</tr>
<tr>
<td>CMP-126</td>
<td>Computer Technology and Applications</td>
</tr>
<tr>
<td>CMP-239</td>
<td>The Internet and Web Page Design</td>
</tr>
<tr>
<td>CMP-244</td>
<td>Web Design II</td>
</tr>
<tr>
<td>CMP-245</td>
<td>Web Design Tools</td>
</tr>
<tr>
<td>TEL-109</td>
<td>Introduction to Telecommunications</td>
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<tr>
<td>TEL-110</td>
<td>Routing I (CISCO)</td>
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<tr>
<td>TEL-120</td>
<td>Routing II (CISCO)</td>
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<td>TEL-220</td>
<td>Routing III (CISCO CCNA3 &amp; CCNA4)</td>
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<td>TEL-233</td>
<td>Network Operating Systems</td>
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<td>TEL-234</td>
<td>Telecommunications Systems</td>
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<td>ELT-110</td>
<td>Digital Principles</td>
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<td>ELT-209</td>
<td>Advanced Digital and Microprocessors</td>
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<td>ENR-119</td>
<td>Technical Computer Applications</td>
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<td>ENR-120</td>
<td>Technical Computer Programming</td>
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<tr>
<td>ELT-110</td>
<td>Digital Principles</td>
</tr>
<tr>
<td>ELT-115</td>
<td>Active Circuit Components</td>
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<tr>
<td>ELT-201</td>
<td>Electricity and Electronics</td>
</tr>
<tr>
<td>ELT-213</td>
<td>Active Circuit Design</td>
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<tr>
<td>ELT-215</td>
<td>Industrial Electronics</td>
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<tr>
<td>ELT-231</td>
<td>Electronic Communication Systems</td>
</tr>
<tr>
<td>ENR-119</td>
<td>Technical Computer Applications</td>
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<tr>
<td>ENR-120</td>
<td>Technical Computer Programming</td>
</tr>
<tr>
<td>ENR-124</td>
<td>Instrumentation and Measurements</td>
</tr>
<tr>
<td>TEL-110</td>
<td>Routing I (CISCO)</td>
</tr>
<tr>
<td>CMP-101</td>
<td>Computer Information Literacy. 1 Credit.</td>
</tr>
<tr>
<td></td>
<td>LAB 2 hrs</td>
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<tr>
<td></td>
<td>This general education course provides</td>
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<tr>
<td></td>
<td>students with an introduction to basic</td>
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<td></td>
<td>computer concepts that include learning</td>
</tr>
<tr>
<td></td>
<td>the fundamentals of Windows, accessing</td>
</tr>
<tr>
<td></td>
<td>the Internet and using Microsoft Word.</td>
</tr>
<tr>
<td></td>
<td>Not for Computer Information Systems</td>
</tr>
<tr>
<td></td>
<td>majors. Students will not receive credit</td>
</tr>
<tr>
<td></td>
<td>towards graduation for more than one of</td>
</tr>
<tr>
<td></td>
<td>the following courses: CMP-101, CMP-110,</td>
</tr>
<tr>
<td></td>
<td>CMP-126, CMP-203 or BUS-119.</td>
</tr>
<tr>
<td></td>
<td>Additional Fees: Course fee applies.</td>
</tr>
<tr>
<td>CMP-108</td>
<td>Game Design Concepts. 3 Credits.</td>
</tr>
<tr>
<td></td>
<td>LECT 3 hrs</td>
</tr>
<tr>
<td></td>
<td>This course provides the student with an</td>
</tr>
<tr>
<td></td>
<td>introduction to fundamental game design</td>
</tr>
<tr>
<td></td>
<td>concepts. The range of topics includes</td>
</tr>
<tr>
<td></td>
<td>game worlds and settings, character</td>
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<td></td>
<td>creation, storytelling, game audio, game</td>
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<td></td>
<td>art and animation, gameplay and user</td>
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<tr>
<td></td>
<td>interface design. In addition, the history</td>
</tr>
<tr>
<td></td>
<td>of the game industry, social impact and</td>
</tr>
<tr>
<td></td>
<td>the future of gaming are discussed.</td>
</tr>
<tr>
<td></td>
<td>Students analyze various games and genres</td>
</tr>
<tr>
<td></td>
<td>and create their own game design</td>
</tr>
<tr>
<td></td>
<td>document. Additional Fees: Course fee</td>
</tr>
<tr>
<td></td>
<td>applies.</td>
</tr>
<tr>
<td>MEC-141</td>
<td>Strength of Materials for Engineering</td>
</tr>
<tr>
<td></td>
<td>Technology</td>
</tr>
<tr>
<td>MEC-155</td>
<td>Mechanical Components</td>
</tr>
<tr>
<td>MEC-236</td>
<td>Machine Design</td>
</tr>
<tr>
<td>Electromechanical Technology</td>
<td></td>
</tr>
<tr>
<td>ELT-110</td>
<td>Digital Principles</td>
</tr>
<tr>
<td>ELT-201</td>
<td>Electricity and Electronics</td>
</tr>
<tr>
<td>ELT-210</td>
<td>Electronic Fabrication</td>
</tr>
<tr>
<td>ENR-117</td>
<td>Computer-Aided Drafting I</td>
</tr>
<tr>
<td>ENR-119</td>
<td>Technical Computer Applications</td>
</tr>
<tr>
<td>ENR-124</td>
<td>Instrumentation and Measurements</td>
</tr>
<tr>
<td>MEC-110</td>
<td>Materials for Engineering Technology</td>
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<td>MEC-141</td>
<td>Strength of Materials for Engineering</td>
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<td>MEC-155</td>
<td>Mechanical Components</td>
</tr>
<tr>
<td>MEC-236</td>
<td>Machine Design</td>
</tr>
<tr>
<td>Fire Science Technology</td>
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<tr>
<td>FST-101</td>
<td>Introduction to Fire Science</td>
</tr>
<tr>
<td>FST-102</td>
<td>Fire Prevention and Related Codes</td>
</tr>
<tr>
<td>FST-201</td>
<td>Fire Service Management</td>
</tr>
<tr>
<td>FST-202</td>
<td>Hazardous Materials</td>
</tr>
<tr>
<td>FST-204</td>
<td>Fire Protection, Building Construction</td>
</tr>
<tr>
<td>FST-210</td>
<td>Current Issues in Fire Science/ Capstone</td>
</tr>
<tr>
<td></td>
<td>Experience</td>
</tr>
<tr>
<td>Diversity/Global Perspective (3 Credits)</td>
<td></td>
</tr>
<tr>
<td>FST or CJS</td>
<td>(restricted elective 16 credits)</td>
</tr>
</tbody>
</table>

**Age-of-Credit Policy:** Technology-based courses taken by a student at least seven years prior to the time the student applies for graduation may not be applied to a degree or certificate within the Department of Information Technologies.

**Courses**

**CMP-101. Computer Information Literacy. 1 Credit.**

LAB 2 hrs

This general education course provides students with an introduction to basic computer concepts that include learning the fundamentals of Windows, accessing the Internet and using Microsoft Word. Not for Computer Information Systems majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-101, CMP-110, CMP-126, CMP-203 or BUS-119.

**Additional Fees:** Course fee applies.

**CMP-108. Game Design Concepts. 3 Credits.**

LECT 3 hrs

This course provides the student with an introduction to fundamental game design concepts. The range of topics includes game worlds and settings, character creation, storytelling, game audio, game art and animation, gameplay and user interface design. In addition, the history of the game industry, social impact and the future of gaming are discussed. Students analyze various games and genres and create their own game design document.

**Additional Fees:** Course fee applies.
CMP-120. Foundations of Information Security. 3 Credits.
LECT 3 hrs
This course provides a principled introduction to the field of information security. History, characteristics and models of information and computer security are explored. Topics such as risk management, logical and physical security, continuity, cryptography, and architecture are discussed. The National Centers of Academic Excellence in Cyber Defense Education Knowledge Units and the CISSP CBK domains are incorporated into the course content affording the student reinforcement and mastery of information security terminology and concepts.
Additional Fees: Course fee applies.

CMP-123. Systems Analysis and Design. 3 Credits.
LECT 3 hrs
Techniques of object-oriented and structured systems analysis and design are examined in the context of the software development life cycle. Topics include project management, Unified Modeling Language (UML) diagrams, data flow diagrams, system flow charts, application and user-interface design. Class projects provide students with practice in using CASE tools in the analysis and design of application systems. Students participate in a semester-long team project to design an application.
Prerequisites: CMP-128 and one of the following: CMP-129, CMP-150, CMP-237, CMP-239
Additional Fees: Course fee applies.

CMP-124. Network Security. 3 Credits.
LECT 3 hrs
This course provides an in-depth study of network attack techniques and methods to defend against them. Areas of study include communication security, infrastructure security, cryptography, and operational and organizational security as it relates to network hardware, software and data. Topics include authentication, attacks, virtual private networks, email protection, web security, wireless, firewalls, intrusion detection, cryptography, disaster recovery and computer forensics regarding networked systems. Using a hands-on approach, powerful tools to diagnose and correct security breaches are investigated and manipulated. This course is mapped to the National Centers of Academic Excellence in Cyber Defense Education Knowledge Units and vendor-neutral certification exam.
Additional Fees: Course fee applies.

CMP-125. Information Security Management. 3 Credits.
LECT 3 hrs
This course entails identifying an organization's information assets and the development, documentation and implementation of policies, standards, procedures and guidelines that ensure confidentiality, integrity and availability of those assets. This course, which is mapped to the National Centers of Academic Excellence in Cyber Defense Education Knowledge Units, prepares students to understand the planning, organization and roles of individuals involved in security, to develop security policies, and to utilize management tools to identify threats, classify assets and rate vulnerabilities. A detailed, real-world security plan is developed using customized strategies.
Additional Fees: Course fee applies.

CMP-126. Computer Technology and Applications. 4 Credits.
LECT 3 hrs, LAB 2 hrs
This general education course teaches: (1) basic computer-use concepts such as hardware and peripherals, file organization and management, and operating system use; (2) Internet use, browsers and search engines; (3) software applications including word processing, spreadsheet, electronic slideshow presentations, database use and calendaring; (4) netiquette, ethics and copyright policies; (5) downloading and installing software and plug-ins; (6) communications technologies including email, blogs and Web technologies; (7) personal computer and information security; and (8) career exploration, job search strategies and portfolio development. Students are required to complete a series of laboratory assignments that illustrate skills and use technologies in the areas listed including a cross-applications/technologies project. Students will not receive credit towards graduation for more than one of the following courses: CMP-101, CMP-110, CMP-126, CMP-203 or BUS-119.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007
Additional Fees: Course fee applies.

CMP-128. Computer Science I. 3 Credits.
LECT 2 hrs, LAB 2 hrs
In this introductory course, students obtain fundamental computer science knowledge and develop programming skills using an object-oriented approach, incorporating security awareness, human-computer interactions and social responsibility. This course provides students with a basic foundation in computing history, computing careers, computer organization, operating system responsibilities, software development process, algorithm design and analysis, programming paradigms, and human interaction design.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

CMP-129. Computer Science II. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course is the second in a three-course sequence that provides students with a foundation in Computer Science. Students develop intermediate-level programming skills using an object-oriented approach with an emphasis on software development, fundamental algorithms and data structures, software assurance, and ethical conduct.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-130. Introduction to Information Technology. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This is the introductory course in the field of study of Information Technology. This course introduces the student to the software and hardware found in today’s computing environment and the basic skills and tools required to install, support and upgrade common information technology used by businesses, organizations and academic institutions. This course helps the student prepare for the CompTIA A+ certification examination. In addition, the basics of network architecture, database management, information security and web infrastructure are covered. At completion the student will be prepared for further study in the curriculum of Information Technology and equipped with the fundamental knowledge required of an IT Professional. The students use popular desktop applications to organize and perform IT laboratory activities.
Additional Fees: Course fee applies.
CMP-135. Computer Concepts with Applications. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This general education course is designed to provide familiarity with current software for word processing, spreadsheet, presentation and database applications. An introduction to web browsers, computer and information security, social impact of computing, concepts in computer hardware, and application and system software is also included. Students are required to complete a series of laboratory assignments that illustrate skills in using the above software applications. Students must allocate time to complete assignments using the same software (available on campus). Not for Computer Information Systems majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-135, CMP-126 or BUS-119.
Additional Fees: Course fee applies.

CMP-150. Game Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course covers fundamental game programming techniques using an industry-standard scripting language. Students learn how to use a popular game engine to build game programs. Topics include sprites, animation, collisions, timers, game state variables, player input, audio, user interface design and storyboarding. Laboratory work includes several game element programming exercises, leading up to a final game project.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-160. Digital Forensics I. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces the student to the fundamental concepts of computer forensics. By conducting a detailed examination of data media for structure, file system type, volumes, lost and hidden areas, the student will develop the ability to collect and analyze computer data for digital evidence. An understanding of specific resources and an exploration of software tools available for data recovery and forensic analysis will be conducted in a laboratory setting. Upon completion of this course the student will demonstrate various data recovery techniques as the basis for forensic evaluation.
Additional Fees: Course fee applies.

CMP-170. Mobile App Design. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces students to the design and development of mobile applications. Students will learn how to install and use a leading mobile app software development kit, design the user interfaces using different design patterns, create and edit app resources, and design and develop native source code. Students will strengthen their programming skills in user input, variables, operations, decision control structures, methods, lists and arrays. Audio, images, animation and other application controls will be incorporated into apps. Other topics include testing, deployment and publishing apps.
Prerequisites: CMP-128
Additional Fees: Course fee applies.

CMP-200. Computer Operating Systems and Utilities. 3 Credits.
LECT 3 hrs, LAB 1 hr
This is an introductory course in personal computer operating systems. Topics include the features and characteristics of operating system software; installation and configuration including customization, file organization and management; memory and storage management; control of peripheral devices; troubleshooting; networking wizards; and the use of utilities to monitor system performance, backup data and optimize disks. Laboratory assignments provide hands-on opportunities for students to apply the information related in lectures.
Additional Fees: Course fee applies.

CMP-205. Database Programming (MS Access). 3 Credits.
LECT 3 hrs, LAB 1 hr
It is recommended that students take CMP-207 Electronic Spreadsheets before taking CMP-205. This course is designed to develop skill in the use of a leading database management system. Topics include the design and maintenance of relational databases and their objects (tables, queries, forms and reports). Also covered is the use of macros to implement procedures. The final portion of the course covers automation techniques by introducing the Visual Basic for Applications programming language and the use of this code to create a user-friendly interface.
Additional Fees: Course fee applies.

CMP-207. Electronic Spreadsheets (MS Excel). 3 Credits.
LECT 3 hrs, LAB 1 hr
It is recommended that students take CMP-207 Electronic Spreadsheets before taking CMP-205. This is a course in problem solving using a popular spreadsheet program. Emphasis is on construction of elementary to moderately complex worksheets; charting worksheet data, database definitions and reporting; and using VBA (Visual Basic for Applications) to construct simple macros.
Additional Fees: Course fee applies.

CMP-209. Introduction to UNIX. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course combines lecture with hands-on training in the UNIX Operating System. Upon successful completion of this course, students are proficient in using the UNIX Operating System commands and utilities. Topics include purpose and functions of an operating system, hierarchical file system, the shell, vi editor, file security, process management, sorting, networking theory and communications, redirection, piping, and an introduction to shell scripts.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-217. Cooperative Work Experience-Information Technologies. 3 Credits.
COOP 3 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent career employment. This course may be taken in fulfillment of the Cooperative Information Systems elective. Interested students should consult with the department chair. Computer Information Systems majors only
Prerequisites: Permission of department chair
CMP-218. Cooperative Work Experience Information Technologies - Related Class. 1 Credit.
LECT 1 hr
A supplement to the Department of Information Technologies
Cooperative Work Experience, this course provides a variety
of exercises that further develop the students’ technical and
communication skills, occupational adjustment, and career planning.
This course is offered online. Computer Information Systems majors
only.
Prerequisites: Permission of department chair
Corequisites: CMP-217.
CMP-230. Computer Architecture and Assembly Language. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is an introduction to computer architecture and
assembly language programming. Topics covered include
digital logic and data representation, computer architecture and
organization, interfacing and input/output strategies, memory
architecture, functional organization, and multiprocessing. Students
are exposed to basic assembly language programming techniques
in laboratory assignments.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.
CMP-233. Data Structures and Algorithms. 3 Credits.
LECT 3 hrs, LAB 1 hr
The course includes advanced computer science topics dealing with
logical structures of data and the design and analysis of computer
algorithms operating on these structures. The course concentrates
on data structures such as linked lists, trees, queues, stacks, hash
tables and graphs. Algorithms covered include stacks, queues,
hash tables, trees, graphs, heaps, sorting and searching. Both
iterative and recursive algorithms are explored with analysis of their
efficiency. Problems and computer exercises implementing the
above structures and techniques are assigned.
Prerequisites: CMP-129 or equivalent and MAT-123 or higher
Additional Fees: Course fee applies.
CMP-235. Advanced UNIX. 3 Credits.
LECT 3 hrs, LAB 1 hr
This is a continuation course in UNIX programming with emphasis
on building upon the previously developed skills. Topics include
an in-depth coverage of shell scripts, system administration,
GUIs, differences and similarities between shells, higher-level
programming languages in the UNIX environment, the Internet,
sorting, and other advanced topics.
Prerequisites: CMP-209
Additional Fees: Course fee applies.
CMP-237. Visual Basic (VB.Net). 3 Credits.
LECT 3 hrs, LAB 1 hr
This is a fundamental course in object-oriented programming in
a Windows environment. Topics include form design, managing
controls, handling variables and constants, using decision and loop
structures to construct efficient code, handling built-in functions,
and simple debugging techniques for detecting errors. Basic
fundamentals of classes are introduced.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.
CMP-239. The Internet and Web Page Design. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is an in-depth study of the Internet and its various
services that allows students to appreciate the impact of the Internet
in society. Students create World Wide Web home pages using strict
Hypertext Markup Language, Cascading Style Sheets (CSS) and
XHTML. Other current specifications also are discussed.
Additional Fees: Course fee applies.
CMP-241. Database Programming (Oracle). 3 Credits.
LECT 3 hrs, LAB 1 hr
This course uses the rules and syntax of an “industrial-strength”
database programming language that can be used on all types of
computers. Topics include relational database aspects, data input
and validation, creation and maintenance of files, query, user control
center, and application generator. Emphasis is on development of
programs related to business database applications.
Prerequisites: CMP-113 or CMP-128 or equivalent or permission of
department chair
Additional Fees: Course fee applies.
CMP-243. Ethical Hacking and Systems Defense. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course combines an ethical methodology with the hands-
on application of security tools, techniques and methodologies in
performing computer system and network security vulnerability - risk
analyses - to better help students secure and defend their systems.
Topics to be covered include internal and external penetration
tests, risk analysis methodology, and security audits. Students are
introduced to common countermeasures that effectively reduce and/
or mitigate attacks. This class is designed to help students prepare
for professional careers in the information security field and the
Certified Ethical Hacker (CEH) certification exam.
Prerequisites: CMP-124
Additional Fees: Course fee applies.
CMP-244. Web Design II. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is a continuation of The Internet and Web Page Design
with an emphasis on more advanced concepts and techniques.
Topics include Cascading Style Sheets, forms, JavaScript and other
current scripting languages. Students learn to work with hosting
and web server technology. For their final project, students build a
website using these techniques.
Prerequisites: CMP-239
Additional Fees: Course fee applies.
CMP-245. Web Design Tools. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Students learn the leading web design and development tools
including the Adobe Creative Suite. Instruction and practice in the
suite provides seamless integration and a unified user interface
across all tools to streamline multimedia and web development.
Through hands-on practice, activities and relevant project
application, students develop competence in the use of industry-
leading development tools.
Prerequisites: CMP-108 or CMP-128 or CMP-239 or MED-110 or
GRD-111
Additional Fees: Course fee applies.
CMP-246. Operating Systems. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces students to operating systems and their uses and design concerns. Covered are the roles and responsibilities of operating systems including scheduling, concurrency and process synchronization, memory management, file organization and management, and control of peripheral devices. Security and protection topics are also addressed. Laboratory assignments provide interactive learning experiences which demonstrate operating system concepts using programming, operating system commands and scripting.
Prerequisites: CMP-129
Additional Fees: Course fee applies.

CMP-249. Advanced Web Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This advanced course in Web Development introduces the student to creating interactive and dynamic Web sites using current Web programming. Building on concepts and principles of computer programming and scripting languages, students will interact with Web server technologies and develop front end, advanced professional Web sites with fully functioning back end support.
Prerequisites: CMP-128 and CMP-244
Additional Fees: Course fee applies.

CMP-250. Game Production. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Working in teams, students combine their game design and programming skills to explore the practical challenges of managing the development of games. Industry-standard software and advanced programming are used in this capstone course to develop a functioning game of the highest professional quality. Emphasis is placed on the game design document, storyboarding, the game production process, user interface and game design, interactive storytelling, character development, 3D animation, special effects, audio, the collaborative process, and usability testing.
Prerequisites: CMP-150 or MED-220
Additional Fees: Course fee applies.

CMP-261. Digital Forensics II. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This advanced course in digital forensics will enable the student to understand advanced file system forensics, the theory of forensic procedures, review of identification, imaging, and authentication, review of FAT file system, NTFS and EXT3 file systems, partitioning, Window’s logical analysis, email analysis, and web history analysis conducted in a laboratory setting. Upon completion of this course the student will apply investigative methodology as it applies to data artifacts, including where they are found in computer operating systems, and how they are deployed in digital forensics. The student will perform forensic media acquisition and verification.
Prerequisites: CMP-160
Additional Fees: Course fee applies.

CMP-271. Mobile App Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This second course in a series of mobile app development courses covers advanced design elements and programming constructs. Topics include accessing device resources including the camera, accelerometer, and GPS; utilizing local and networked database services; animation and gaming; accessing background services; file management; designing for multiple devices including wearables; and localization/internationalization and accessibility design. Students will create apps individually and as part of a team and their learning will culminate with the development of a final project that will be of industry-level quality.
Prerequisites: CMP-170
Additional Fees: Course fee applies.

CMP-290. Independent Study in Information Technology. 3 Credits.
LECT 3 hrs
Students, in consultation with the department chair, undertake an in-depth analysis of a selected topic, problem or issue related to information technology or pursue additional computer-related work experience. Students are responsible for developing a statement of goals and strategies, maintaining a weekly log, and preparing a written and oral summary report. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-291. Special Topics in Information Technology. 3 Credits.
LECT 3 hrs, LAB 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-292. Special Topics in Information Technology. 3 Credits.
LECT 3 hrs, LAB 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course(s) is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-293. Special Topics in Information Technology II. 1 Credit.
LECT 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.
CMP-296. Cooperative Work Experience-Information Technology (45-100 hours). 1 Credit.
LECT 2 hrs, LAB 1 hr
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 45-100 hours in duration. The course may be taken in fulfillment of a Computer Information System(CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

CMP-297. Cooperative Work Experience-Information Technology (90-200 hours). 2 Credits.
LECT 3 hrs, LAB 2 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 90 to 200 hours in duration. The course may be taken in fulfillment of a Computer Information System(CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

CMP-298. Cooperative Work Experience-Information Technology (135-300 hours). 3 Credits.
LECT 3 hrs, LAB 3 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 135 to 300 hours in duration. The course may be taken in fulfillment of a Computer Information System(CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

ELT-110. Digital Principles. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course develops the fundamentals of the binary system. Circuit implementation from Boolean functions and map minimization. Course includes study of combinational logic, sequential logic circuits, flip-flops, counters and shift register. The laboratory allows the student to apply theory to practical digital circuits.
Additional Fees: Course fee applies.

ELT-115. Active Circuit Components. 3 Credits.
LECT 2 hrs, LAB 4 hrs
This course introduces the behavior of semiconductor electronic devices and develops the device characteristics. Some DC and AC circuit theory is expanded upon so that the active devices can be properly analyzed. Biasing techniques and models of amplifier configurations are stressed for the bipolar transistor and field effect devices. Diodes, rectifiers, filtering and switching circuit applications are studied. Laboratory includes the verification of device characteristics and the testing of basic amplifier and switching configurations.
Prerequisites: ELT-201
Additional Fees: Course fee applies.

ELT-121. Circuit Analysis. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course introduces the student to both DC and AC circuit theory. It includes Ohm's and Kirchoff's laws for analysis of series and parallel circuits. Computer circuit simulation of series-parallel, ladder and bridge networks in both DC and AC are analyzed. Resonance and frequency response are included along with some discussion of AC power and transformers. The laboratory experiments are designed to support the theory and obtain measurement skills.
Prerequisites: MAT-110 and ENR-124
Additional Fees: Course fee applies.

ELT-123. Studio Maintenance. 3 Credits.
LECT 2 hrs, LAB 2 hrs
For Music Recording majors only. This course provides students an introduction to music studio electronics. Basic skills of working with electronic components are covered, including soldering, the use of electronic measuring equipment and troubleshooting procedures. Studio cabling and infrastructure are dealt with extensively. Various wiring schemes and grounding techniques are examined to give the student an understanding of the typical music studio layout found in the professional environment. This course is for Music Recording majors only and does not serve as a technical elective for the Electronics Engineering Technology major. This course is offered in the Fall and Spring semesters.
Prerequisites: MUS-165
Additional Fees: Course fee applies.

ELT-200. Biomedical Electronics. 3 Credits.
LECT 3 hrs
This course is the study of the techniques and theory behind the instrumentation utilized in hospital and health-related laboratory work. Emphasis is placed on physiological signals derived from the body and the problems and safety issues associated with their measurement. Demonstrations are conducted in class.
Prerequisites: ELT-115 and ELT-201.

ELT-201. Electricity and Electronics. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is a fundamental study of electricity and electronics for Engineering Technology majors. The principles of electrical components and circuits are studied in class and laboratory. Topics include DC, AC series and parallel circuits, transformers and power supplies, solid state amplifiers and control components. The laboratory enables the student to apply the theory discussed in class and to gain some proficiency in the use of electronic measuring equipment.
Prerequisites: MAT-110 or equivalent and ENR-124
Additional Fees: Course fee applies.

ELT-209. Advanced Digital and Microprocessors. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is an extension of digital theory into the operation and interfacing of microprocessors. Major topics include sequential logic design, memory organization, microprocessor architecture, machine level programming, A/D and D/A conversion, and serial and parallel interfacing. An associated laboratory provides for hands-on microprocessor interfacing and the use of logic analyzers.
Prerequisites: ELT-110 and ENR-120 or CMP-128
Additional Fees: Course fee applies.
ELT-210. Electronic Fabrication. 1 Credit.
LECT 2 hrs, LAB 3 hrs
This course provides students with an opportunity to learn about the process involved in the fabrication of electronic circuit boards. Using computer-aided drafting tools, students create an electronic component layout and necessary art work for the construction of a printed circuit board. Students are introduced to project management concepts and techniques, soldering, test specifications and printed circuit board construction. A term project or a series of smaller projects enables students to manage, build and assemble a printed circuit board and develop test specifications.
Prerequisites: ENR-117
Additional Fees: Course fee applies.

ELT-213. Active Circuit Design. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course covers analysis and design of solid-state amplifiers using bipolar and field effect transistors. Topics include frequency response using Bode plots and feedback analysis as applied to operational amplifiers and oscillators. Laboratory verification includes transistors, amplifiers, power amplifiers, IC operational amplifiers and oscillators.
Prerequisites: ELT-115 and either ELT-121 or ELT-201
Additional Fees: Course fee applies.

ELT-215. Industrial Electronics. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course covers operational amplifiers in linear, non-linear and active filter applications, pulse and wave-shaping techniques, power supplies and regulators, thyristor control of power and transducers. The laboratory includes experiments in design and tests to support the above topics.
Prerequisites: ELT-209 and ELT-115
Additional Fees: Course fee applies.

ELT-227. Biomedical Clinical Experience. 3 Credits.
LECT 3 hrs
This course provides the student with a 200-hour internship at a local hospital. The student assists in the maintenance and calibration of biomedical electronic equipment. The student must abide by any rules and regulations stipulated in the affiliation agreement with the partnering hospital. As a minimum, the student is required to purchase liability insurance and agree to a criminal background check.
Prerequisites: ELT-200 and permission of department chair
Additional Fees: Course fee applies.

ELT-230. Optoelectronics. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course covers principles of light and linear optics characteristics of electro-optical light sources and detectors and their applications in industry, displays and communication (fiber optics). Lab experiments demonstrate electro-optical measurements and designs of typical applications of electro-optical devices.
Prerequisites: MAT-110
Additional Fees: Course fee applies.

ELT-231. Electronic Communication Systems. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course covers A.M., F.M., and single side-band communication systems, including an introduction to digital transmission. Designed to familiarize the student with transmitters, receivers, modems, noise analysis, information theory, pulse modulation, sampling, coding, multiplexing and other signal processing techniques used in commercial broadcasting and data transmission systems. The course includes some coverage of transmission lines, antennas, microwaves and satellites. Includes laboratory work involving communication system components and techniques using industrial grade equipment.
Prerequisites: ELT-201
Additional Fees: Course fee applies.

ELT-239. Cooperative Work Experience Electronics Engineering Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course provides a field experience in the laboratory facilities of an industrial firm. The course is designed for students in the Electronics Engineering Technology programs to obtain industrial experience as a supplement to their college studies prior to career employment. Seminar evaluation visitations are included. Students must have completed 35 credits to enroll.
Prerequisites: Permission of department chair.

ELT-291. Special Topics in Electronics Engineering Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course provides an examination of selected topics or issues in Electronics Engineering Technology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

ELT-292. Special Topics in Electronic Engineering Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course provides an examination of selected topics or issues in Electronics Engineering Technology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

ENR-103. Basic Engineering Graphics I. 1 Credit.
LECT 2 hrs
This course is an introduction to the concepts and operation of engineering drawing preparation using freehand sketching. Course includes developing orthographic views including auxiliary views, dimensioning, sectioning, tolerancing, threads, fasteners, springs and assembly drawings. Course includes creation of pictorial drawings.

ENR-117. Computer-Aided Drafting I. 2 Credits.
LECT 1 hr, LAB 4 hrs
This course is an introduction to the concepts and operation of engineering drawing preparation using CAD (computer-aided drafting). The emphasis is on how CAD can reduce drawing time and improve accuracy. Students learn to use the AutoCAD software program to prepare drawings.
Additional Fees: Course fee applies.
ENR-118. Computer-Aided Drafting II. 2 Credits.
LECT 1 hr, LAB 4 hrs
This course is a continuation and enhancement of Computer-Aided Drafting I. Topics include prototype drawings, blocks, attributes, x-reference, grips, paper space and development of 3-dimensional solid modeling.
Prerequisites: ENR-117
Additional Fees: Course fee applies.

ENR-119. Technical Computer Applications. 1 Credit.
LAB 3 hrs
This course provides an introduction to the various technical tools available to help solve problems in the field of engineering technology. This is a hands-on laboratory course designed to provide students with experience in using scientific calculators, Windows Operating System, Microsoft Office and Internet search tools. Special emphasis is placed on the development of technical reports using Microsoft Office’s EXCEL and Word programs.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

ENR-120. Technical Computer Programming. 2 Credits.
LECT 2 hrs, LAB 2 hrs
This course is an introduction to computer programming with application to engineering technology. Microcomputers are used to develop application programs in a programming language.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

ENR-121. Engineering Graphics. 2 Credits.
LECT 1 hr, LAB 3 hrs
This course is an introduction to computer aided design software and hardware. Covered are geometric constructions, multiview orthographic projection, dimensioning, sectioning, auxiliary view and axonometric projection and principles of descriptive geometry. A brief introduction to solid modeling is also included. This course is intended for Engineering Science students; Engineering Technology students take ENR-117.
Prerequisites: MAT-123
Additional Fees: Course fee applies.

ENR-123. Introduction to Engineering. 0 Credits.
LECT 1 hr
This course provides the entering engineering student with an overview of the engineering profession and the design process. Topics discussed include the engineering course of study, academic advisement and transfer processes, types of engineering disciplines, problem-solving techniques, typical software tools, reporting techniques, and study skills.

ENR-124. Instrumentation and Measurements. 2 Credits.
LECT 1 hr, LAB 3 hrs
This course is an introductory study in the concepts involving physical measurements utilizing hands-on electrical and mechanical measurement applications. Use of basic instruments and transducers, accuracy and precision, units and standards of measurements, accounting and presentation of errors in measurements.
Prerequisites: MAT-007 or equivalent
Corequisites: ENR-119
Additional Fees: Course fee applies.

ENR-125. Computer Programming for Engineers. 3 Credits.
LECT 2 hrs, LAB 2 hrs
A course in structured and object-oriented programming, emphasizing engineering applications and numerical methods in assignments. Program assignments are coded and are implemented on personal computers.
Prerequisites: MAT-123
Additional Fees: Course fee applies.

ENR-126. Computer Aided Design and Applications. 2 Credits.
LECT 1 hr, LAB 4 hrs
An introductory course in computer aided design using parametric solid modeling software. Creation of solid models of parts, generation of orthographic views, sectional views and auxiliary views are covered. Dimensioning and tolerancing of parts is emphasized along with development of appropriate files to make the parts for product development using rapid prototyping (3-D printing) and to manufacture parts using computerized numerical control machines.
Prerequisites: ENR-117
Additional Fees: Course fee applies.

ENR-220. Hydraulics and Fluid Power. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course is an exploration into the relationship between pressure, density and temperature as they relate to hydraulic and pneumatic systems. Topics include hydraulic pumps, motors and air compressors. The course emphasizes use of engineering standards and specifications for circuit design and component selection. Electrical controls and application to systems are covered. Lab sessions further expand upon lectures by providing students with physical evidence to support theories and ideas acquired in class.
Prerequisites: MAT-110
Additional Fees: Course fee applies.

ENR-222. Mechanics of Solids. 3 Credits.
LECT 3 hrs
Principles of strength of materials are derived for uniaxial stresses and strains, direct shear, torsion bending and combined stresses and column buckling. Also covered are axial force, shear moment and torque in structural members and in statically indeterminate systems. Elementary failure theory of structures and mechanical components is discussed.
Prerequisites: ENR-223.

ENR-223. Engineering Mechanics I (Statics). 3 Credits.
LECT 3 hrs
This course is a vector approach to statics in a plane and in three dimensions, equilibrium of particles and rigid bodies. Equivalent force systems, structural analysis, centroids and moments of inertia. Virtual work and applied engineering problems are incorporated.
Prerequisites: MAT-131 and PHY-130.

ENR-224. Engineering Mechanics II (Dynamics). 3 Credits.
LECT 3 hrs
This course is a calculus-based course in dynamics. Kinematics and kinetics of particles and rigid bodies, Newton’s laws, work, energy, impulse and momentum are covered. Practical engineering problems are incorporated.
Prerequisites: ENR-223.
ENR-230. Engineering Strength of Materials. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Principles of strength of materials are derived for uniaxial stresses and strains, direct shear, torsion bending, and combined stresses and column buckling. Elementary failure theory of structures and mechanical components is discussed. Laboratory covers a variety of tensile stress-strain, impact and hardness tests, as well as shear stress-strain and the techniques of report writing.
Prerequisites: ENR-223
Additional Fees: Course fee applies.

ENR-232. Materials Science. 3 Credits.
LECT 3 hrs
This course covers the properties and structure of materials: atomic bonding, molecular, crystalline, noncrystalline structures and crystalline imperfections. It also covers metallic phases, equilibrium and nonequilibrium reactions, processing and properties of ferrous and non-ferrous metals, polymers, ceramics and composites. In addition, corrosion phenomenon is discussed.
Prerequisites: CHM-125 and CHM-126 and PHY-130.

ENR-234. Independent Study in Technology. 3 Credits.
LECT 3 hrs
This course is for students in Engineering Technologies. The student selects an area of interest and proposes a plan of study to a sponsoring faculty member who supervises and evaluates the student's progress.
Prerequisites: Permission of department chair.

ENR-235. Engineering Circuit Analysis I. 3 Credits.
LECT 3 hrs
This first course in engineering circuit analysis covers DC circuit analysis including source transformations, mesh, nodal, superposition, Thevenin and Norton theorems, and the maximum power transfer theorem. Dependent as well as independent sources are included. Transient response of RC, RL and RLC circuits is introduced. Steady-state analysis of single and three phase AC systems is studied using phasor diagrams and the network theorems mentioned above. Real, reactive, apparent power and power factors are included. Use of the computer as a problem-solving tool is included in the course.
Prerequisites: MAT-132.

ENR-236. Engineering Circuit Analysis Laboratory I. 1 Credit.
LAB 3 hrs
This laboratory course includes experiments in DC, AC and transients to accompany the course work in Engineering Circuit Analysis I.
Corequisites: ENR-235
Additional Fees: Course fee applies.

ENR-237. Engineering Circuit Analysis II. 3 Credits.
LECT 3 hrs
This is a second course in engineering circuit analysis. Natural and step response of RL, RC and RLC circuits, mutual inductance, ideal transformers, series and parallel resonance are studied. Laplace transform theory is covered and includes step and impulse response in the S-domain. Bode diagrams of simple and quadratic factors are plotted and the computer is used for actual frequency and phase plots. Fourier Series are studied using both trigonometric and exponential forms.
Prerequisites: ENR-235
Corequisites: MAT-232.

ENR-238. Engineering Circuit Analysis Laboratory II. 1 Credit.
LAB 3 hrs
This laboratory course includes experiments on transformers, series and parallel resonance, filters and frequency/phase response plots, and two-port hybrid models to accompany the course work in Engineering Circuit Analysis II.
Prerequisites: ENR-236
Corequisites: ENR-237
Additional Fees: Course fee applies.

ENR-240. Engineering Technology Project. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course covers the design of products and processes considering functional requirements, manufacturing feasibility and economy, and the use of technical literature and catalogs. Includes design layout and working drawings and group and individual projects.
Prerequisites: ENR-117 and MEC-110 and MEC-141
Additional Fees: Course fee applies.

ENR-241. Instrumentation and Control. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is an introduction to the study of measuring systems and components, digital and analog signals and their characteristics. Mechanical and electromechanical transducer elements are used to measure pressure, temperature, displacement, velocity and acceleration. Static and dynamic performance of instruments, statistical analysis of experimental data are explored. A brief study of process controllers, programmable logic controllers and final control elements are also explored.
Prerequisites: ELT-201
Additional Fees: Course fee applies.

ENR-290. Special Topics in Technology. 1 Credit.
LECT 1 hr
This course is for students in Engineering Technologies. The student selects an area of interest and proposes a plan of study to a sponsoring faculty member who supervises and evaluates the student's progress when used for independent study. The course is also used to cover either current or future topics of interest in technology. Topics discussed will have relevance to either electronics technology, mechanical technology or both, and may vary each semester.
Prerequisites: Permission of department chair.

ENR-291. Special Topics in Engineering. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in engineering. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

ENR-292. Special Topics in Engineering. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in engineering. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.
FST-101. Introduction to Fire Science. 3 Credits.  
LECT 3 hrs  
This class is considered to be the foundation course for all students of Fire Science Technology. Students are introduced to the concept of the systems approach to fire protection by presenting the components of modern fire department responsibility including emergency incident management, public education, training, resource management and customer service. Students who have completed their Fire Fighter 1 will receive credit for this course.

FST-102. Fire Prevention and Related Codes. 3 Credits.  
LECT 3 hrs  
This course provides students with basic knowledge of federal, state and local codes related to building construction, fire and life safety requirements, and other codes. Includes New Jersey state fire safety regulations and related state requirements. National Fire Protection Association (NFPA) and other standards related to fire protection and life safety are examined. Students who have completed their Fire Fighter 1 will receive credit for this course.

FST-103. Fire Fighting Tactics and Strategy. 3 Credits.  
LECT 3 hrs  
Analysis of the basic rules of fire fighting strategy, defining engine company responsibilities, defining ladder company functions, correlating mutual aid fires and general fire problems. Studies the effective management of suppression forces at various fire situations. Includes consideration of pre-fire planning, problem identification and solution implementation.

FST-106. Fire Protection Systems. 3 Credits.  
LECT 3 hrs  
A study of the nature of public and private fire protection with an emphasis on analysis of systems of fire detection, fire alarm, fire communications, water distribution networks, fire service, hydraulics and fire suppression.  
Prerequisites: Permission of department chair.

FST-107. Fire Apparatus Specifications, Inspections and Maintenance. 3 Credits.  
LECT 3 hrs  
This course covers the principles of care, maintenance and operation of fire apparatus and pumps. Includes pump construction and accessories, pumping techniques, power development and transmission. Also includes driving, troubleshooting and producing effective fire streams.

FST-201. Fire Service Management. 3 Credits.  
LECT 3 hrs  
This course introduces the student to the principles of personnel management through the use of effective leadership techniques. Topics include overview of the fire service as an organization and the officer's role in it, interpersonal communications, personality typing, skill development, leadership techniques, group dynamics and principles of fire company management.  
Prerequisites: FST-101 or equivalent.

FST-202. Hazardous Materials. 3 Credits.  
LECT 3 hrs  
A comprehensive study of the physical, chemical and toxicological characteristics of hazardous materials. This course includes basic methods of recognition and identification based upon the chemical and physical properties of hazardous materials, basic safety procedures when utilizing specific types of protective clothing and equipment, and basic tactical information relating to scene management.  
Prerequisites: MAT-007 or passing score on the algebra section of the placement test.

FST-204. Fire Protection, Building Construction. 3 Credits.  
LECT 3 hrs  
This course introduces basic construction principles and the special characteristics of wood and ordinary construction as they concern the fire service. Primary emphasis is on improving the fire officer's ability to ensure firefighter safety by recognizing common causes and indicators of failure and other hazards relating to building construction. Course material enables the fire officer to better predict the overall reaction of a building to fire conditions.

FST-205. Fire Investigation. 3 Credits.  
LECT 3 hrs  
An in-depth course that defines successful methods for conducting fire investigations. Specific topics include basic chemistry of fire, point of origin, fire cause (both accidental and incendiary), motivation of the fire setter, fire scene investigations, evidence collection, photography, follow-up investigation and court testimony.

FST-206. Fire Hydraulics. 3 Credits.  
LECT 3 hrs  
This course is a concentrated study in the application of mathematics and physics to the properties of water as used in fire suppression operations. Classic hydraulics formulas are used to solve problems for flow velocity, nozzle reaction, friction loss, water distribution systems, fire flow testing, fire service pumps and fire ground hose evolutions.  
Prerequisites: MAT-007 or passing score on the algebra section of the placement test.

FST-207. Emergency Medical Technician. 6 Credits.  
LECT 4 hrs, LAB 4 hrs  
This course is designed to prepare the basic Emergency Medical Technician in accordance with the United States Department of Transportation curriculum and the New Jersey Department of Health guidelines. This course covers an introductory survey of emergency medical services including medical, legal/ethical aspects, role of the Emergency Medical Technician, patient assessment, care of wounds and fractures, airway maintenance, medical and environmental emergencies, patient transportation, emergency childbirth and basic extrication. After completion of this course, the student will be eligible to take the National Registry Examination for certification as an Emergency Medical Technician-Basic. Students who are already registered EMT-Basic in New Jersey will be given credit for this course.
FST-210. Current Issues in Fire Science/ Capstone Experience. 3 Credits.
LECT 3 hrs
A review of the current problems affecting the fire service with particular emphasis on resource allocation, planning and fiscal constraints. The capstone experience requires the student to author and present a scholarly research paper on a topic covered in this course. Students must have completed 40 credit hours in the Fire Science Curriculum or have permission of department chair.
Prerequisites: Permission of department chair.

MEC-104. Statics. 3 Credits.
LECT 3 hrs
This course provides an analysis of force systems acting on particles and rigid bodies; equilibrium in two and three dimensions; trusses, frames and machines; and friction, centroids and moment of inertia of areas.
Prerequisites: MAT-110, ENR-119 and ENR-124.

MEC-109. Manufacturing Process for Engineering Technology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is a study of the methods of prototyping including an introduction to precision measurements, elementary theory of cutting and machining methods with emphasis on the proper operation of the manual lathe and the vertical mill. The course will also provide the student with an introduction to the Computer-Aided Manufacturing (CAM) and the related field of Computerized Numerical Control (CNC). Topics include machine setup, CNC code, both manual and computer assisted, tool offsets and tool changing.
Additional Fees: Course fee applies.

MEC-110. Materials for Engineering Technology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course covers metallic, plastic and ceramic materials that are important to manufacturing. Topics include: molecular and microscopic structures in relationship to material properties, testing of mechanical and thermal properties with reference to ASTM standards, equilibrium diagrams and physical metallurgy emphasizing steel and aluminum, heat treatment of steel, molding and forming methods for plastics. A brief study of ceramics and composites is included.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

MEC-117. Mechanical Prototyping. 2 Credits.
LECT 1.5 hrs, LAB 1.5 hrs
This course is a study of the methods of prototyping including an introduction to precision measurements, elementary theory of cutting and machining methods with emphasis on the lathe operation, milling, drilling and grinding. This course runs for eight weeks.
Additional Fees: Course fee applies.

LECT 1.5 hrs, LAB 1.5 hrs
This course is a study of the methods of Computer-Aided Manufacturing (CAM) and the related field of Computerized Numerical Control (CNC). Topics include machine setup, CNC code, manual and post processed programs, rapid prototyping, tool offsets, and tool changing. This course runs for eight weeks.
Prerequisites: MEC-117 or industrial experience
Additional Fees: Course fee applies.

MEC-141. Strength of Materials for Engineering Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course studies the mathematical determination of stress and deflection for materials having applied loads of normal, shear, torsion, bending or combinations of these. The rational design of mechanical components, such as fasteners, weldments, tanks, shafts, beams and columns, to satisfy stress, deflection and stability criteria are studied. Also included are Mohr's circle and strain gauge techniques. This course is intended for Engineering Technology students; Engineering Science students should take ENR-230, Engineering Strength of Materials.
Prerequisites: MEC-104 and MAT-110
Additional Fees: Course fee applies.

MEC-155. Mechanical Components. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course develops the fundamentals of sketching, blueprint reading, dimensioning, tolerances, preferred sizes and fits, and evaluating product quality. It also introduces students to the theory of function of mechanical elements such as linkages, cam bearings, gears belt and chain drives, springs, brakes, clutches, welds, keys, fasteners and power screws.
Prerequisites: MAT-007 or equivalent.

MEC-204. Dynamics for Technology. 2 Credits.
LECT 2 hrs
This course provides an understanding of the mathematics of the motion of particles and rigid bodies, and of the relation of forces and motion of particles. Upon successful completion of this course, students will describe the motion of particles and rigid bodies as functions of time and position, develop their equations of motions due to applied forces, and determine post impact behavior.
Prerequisites: MAT-110, MEC-104
Corequisites: PHY-111.

MEC-209. Introduction to Advanced Manufacturing and CNC Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
A continuation in the manufacturing process using Computer Numerical Controlled (CNC) milling and turning. Students will learn about and develop advanced manual CNC programs as well as computer-assisted programs (post-processed) derived from CAD (Computer Aided Drafting) drawings. The CNC programs will focus mainly on operations involving three axis milling machines and two axis lathes, but will also touch on operations involving advanced fixture setup and control. Topics will include spindle controls, tool changes, linear and circular interpolation, drilling and tapping, subroutines, and G&M codes. In addition, the course will cover a variety of advanced manufacturing techniques in additive manufacturing (3D Printing), EDM (Electrical Discharge Machining), and reverse engineering techniques using scanners and the CMM (Coordinate Measuring Machine).
Prerequisites: ENR-117 and ((MEC-117 and MEC-118) or MEC-109)
Additional Fees: Course fee applies.
MEC-229. Cooperative Work Experience-Mechanical Engineering Technology. 3 Credits.
COOP 3 hrs
Registration is only upon written recommendation of advisor. This course is a field experience in the laboratory facilities of an industrial firm. It is designed for students in the Mechanical Engineering Technology program to obtain industrial experience as a supplement to college studies prior to career employment. Seminar evaluation visitations are included. Completion of 25 technical credits required to enroll.
Prerequisites: Permission of department chair.

MEC-235. Kinematics. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is a study of moving elements as used in the design and analysis of basic mechanisms in machines. Velocity and acceleration analysis on a plane, design and analysis of 4-bar linkages, cams, gears and other mechanisms using graphical and analytical methods are studied.
Prerequisites: MAT-110
Corequisites: PHY-111
Additional Fees: Course fee applies.

MEC-236. Machine Design. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is the rational design and selection of machine elements considering their economics and manufacturability. The principles of strength of materials and mechanics are applied to the design of bearings, shafts, gears, springs, brakes and other elements of importance in mechanical systems. Consideration of service criteria, operating environment and cost. Emphasis is placed on developing a systematic design philosophy.
Prerequisites: MEC-141
Additional Fees: Course fee applies.

MEC-291. Special Topics in Mechanical Engineering Technology. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in Mechanical Engineering Technology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Mechanical Engineering Technology.

MEC-292. Special Topics in Mechanical Engineering Technology. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in Mechanical Engineering Technology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Mechanical Engineering Technology.

MED-110. Multimedia I. 3 Credits.
LECT 3 hrs
Multimedia I is a survey course designed to allow students to explore, discuss, develop and use multimedia technology. This computer-based course offers an extensive overview of the technologies of multimedia. Students engage in issues related to usability, management and distribution. Topics include multimedia development and design, media elements, and emerging hardware and software trends. A multimedia prototype project that demonstrates conceptual and technical understanding is required.
Additional Fees: Course fee applies.

MED-113. Multimedia II. 3 Credits.
LECT 3 hrs
An advanced course designed to allow students to apply the theory and basic practical knowledge presented in Multimedia I. Students apply their knowledge productions for DVD, local networks or the Internet. Students incorporate traditional media production elements such as video and audio combined with the latest features and technologies. Conceptualization, user interface design and prototyping are key course elements. A multimedia prototype project that demonstrates conceptual and technical understanding is required.
Prerequisites: MED-110
Additional Fees: Course fee applies.

MED-114. Media Aesthetics. 3 Credits.
LECT 3 hrs
Media Aesthetics looks at the importance, influence and meaning of visual images designed for use in electronic media. Through current and historical examples, students learn the principles and significance of media aesthetics including light and color, space and structure, time and motion, and sound, and how they are used to optimize effective communication. Students learn how aesthetic elements of television and multimedia have been translated into vectors - forces that push or pull users in certain directions. Operationally, students learn how to interpret, order, clarify and intensify various communications including fiction, by applying appropriate aesthetic principles. Comparisons between television and multimedia images are closely examined. Students may apply knowledge of media aesthetics by producing projects using broadcast and digital media facilities.
Additional Fees: Course fee applies.

MED-117. Introduction to Broadcasting. 3 Credits.
LECT 3 hrs
This course offers a historical and content analysis approach to the study of broadcast and narrowcast communications. Included are the research and study of systems, regulations, program genres, social effects on audiences, and the future of the industry. This is accomplished via lectures and discussions, handouts, reading assignments and in-class viewing and listening assignments.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

MED-119. Digital Media Production. 3 Credits.
LECT 3 hrs
This course provides students with theory and training in the area of digital content development for digital media productions. Software and hardware training in digital video, audio, animation and graphics are introduced. In addition, the appropriate use of these areas of content in developing digital media productions and interface design are discussed.
Additional Fees: Course fee applies.
MED-210. Digital Video Editing. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Through hands-on learning, Digital Video Editing provides students with the fundamental principles of video editing with a focus on the techniques and technology used to achieve a superior final product. An in-depth exploration of non-linear editing concepts includes a deeper understanding of primary, secondary and tertiary motion, shot types, sequencing, transitions and continuity. Students learn to log and capture raw video, assemble shots on a timeline, create, add, and edit text, audio tracks, title animation, effects, transitions, continuity and video compositing. This course is ideal for students who wish to create and edit a professional video for broadcast, webcast and other motion media venues.
Prerequisites: MED-113 or MED-211
Additional Fees: Course fee applies.

MED-211. Television Production I. 3 Credits.
LECT 3 hrs
This course introduces students to the basic operation of a television studio and the production process. Students learn techniques and develop skills in various studio functions including camera, switching, sound, lighting, teleprompter, scriptwriting and directing. Collaboration and teamwork are emphasized.
Additional Fees: Course fee applies.

MED-212. Television Production II. 3 Credits.
LECT 3 hrs
Students employ skills learned in Television Production I and learn advanced production skills including studio and remote producing, remote-location video shooting, digital editing, advanced special FX generation and switching, and set design via a "live on tape" production of an actual television program.
Prerequisites: MED-211 and MED-114
Corequisites: MED-210
Additional Fees: Course fee applies.

MED-213. Multimedia Authoring and Design. 3 Credits.
LECT 3 hrs
Using industry-standard authoring software, students apply multimedia technology to assemble a real-world interactive multimedia project. Concepts and principles of user interface design, digital audio and video production, team production techniques and usability testing are employed. As members of a production team, students plan, manage and implement a complex multimedia production project to be used on DVD, a local network or the Internet for a participating business partner.
Prerequisites: MED-113
Additional Fees: Course fee applies.

MED-218. Video Magazine Production. 3 Credits.
LECT 3 hrs
Instruction and practice in news gathering and writing news stories for a video magazine, analysis of commercial video magazines and production of video magazines including graphics and post-production experience are objectives of this advanced media course.
Prerequisites: MED-211 or permission of instructor.

MED-220. Animation. 3 Credits.
LECT 3 hrs
This is an advanced production course utilizing 3D modeling and animation software to create animated imagery for video and multimedia applications. Software includes 3D Studio Max (3D animation) and Adobe Premiere and AfterEffects (digital video). Through assigned projects, students learn to combine live video and animation with compositing and bluescreening techniques.
Additional Fees: Course fee applies.

MED-224. Independent Study in Media. 3 Credits.
LECT 3 hrs
Students, in consultation with a media advisor, undertake an in-depth analysis of a selected topic, problem or issue related to media or pursue additional media-related work experience. Students are responsible for developing a statement of goals, maintaining a weekly log and preparing a written and oral summary report. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MED-228. Cooperative Work Experience-Media Stud. 3 Credits.
COOP 3 hrs
Actual applications of classroom learning in a supervised on-the-job training experience takes place daily. Students pursue their career objectives in the broadcasting arts or digital media area following a training plan with the assistance of the department chair and on-the-job supervisor. Interested students should consult with the Department of Information Technologies chair. Available only to Digital Media Technology majors.
Prerequisites: MED-212 or MED-213
Corequisites: MED-229.

MED-229. Cooperative Work Experience-Media Related Class. 1 Credit.
LECT 1 hr
This course provides a variety of exercises that further develop students’ technical skills, occupational adjustment and career development competencies. Exercises help to develop interpersonal and communication skills and help to ensure a positive cooperative work experience. This course is offered online. Available only Digital Media Technology majors.
Prerequisites: MED-212 or MED-213
Corequisites: MED-228.

MED-230. Media Internship. 3 Credits.
LECT 3 hrs
Practical experience in the media career field is gained working part-time in an approved, supervised media-related environment or on an approved media-related project under the supervision of a media instructor and/or on-the-job supervisor. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair.

MED-240. Advanced Animation. 3 Credits.
LECT 3 hrs
This advanced-level course is a continuation of MED-220 Animation and is designed to expose students to high-end 3-D modeling tools for digital animation, electronic post-production, digital special effects and digital multimedia. This course explores advanced applications in digital compositing, particle systems, Newtonian algorithms, kinemation, dynamation and 3-D characters.
Prerequisites: MED-220
Additional Fees: Course fee applies.
MED-291. Special Topics in Media. 1 Credit.
LECT 3 hrs
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MED-292. Special Topics in Media. 3 Credits.
LECT 1 hr
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MED-293. Special Topics in Media. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

TEL-107. Computers and Data Networks. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course is a continuation of topics introduced in earlier courses. Data networking, including concepts of essential computer components, data storage, network operating systems, computer networking models and communication framework for the transmission of voice, text and video data will be explored in greater detail. The laboratory component will cover topics on computer setup, network setup and integration and operating system utilities.
Prerequisites: CMP-130 and CMP-200.

TEL-109. Introduction to Telecommunications. 3 Credits.
LECT 3 hrs
This course is an introduction to the terminology and standard practices of the telecommunications industry, including concepts of integrating office automation procedures with telecommunications networks (wired and wireless) using voice, data, text and video information. Coverage includes various transmission and switching media as well as an understanding of message routing hierarchies. Issues of regulation and deregulation are discussed together with equipment selection and management topics. The mechanics of the Internet also are introduced with a description of Voice over Internet Protocol (VoIP). Other topics covered include laser communication links, teleconferencing, data network protocols and architectures and satellite technology.

TEL-110. Routing I (CISCO). 3 Credits.
LECT 2 hrs, LAB 3 hrs
The course follows CISCO's CCNA1 curriculum for Networking Basics. Lecture and laboratory assignments are an integral part of the course. The course focuses on network terminology and protocols, local area networks (LANs), wide area networks (WANs), Open System Interconnection (OSI) networking model, cabling, cabling tools, routers, router programming, Ethernet, Internet Protocol addressing/subnetting and network standards.
Additional Fees: Course fee applies.

TEL-120. Routing II (CISCO). 3 Credits.
LECT 2 hrs, LAB 3 hrs
The course follows CISCO's CCNA2 curriculum for Routers and Routing Basics. The course focuses on initial router configuration, CISCO IOS software management, routing protocol configuration, TCP/IP and access control lists (ACLs). Through lectures and laboratory assignments, students develop the skills to configure and maintain a router as well as the creation of software firewalls.
Prerequisites: TEL-110
Additional Fees: Course fee applies.

TEL-220. Routing III (CISCO CCNA3 & CCNA4). 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course follows CISCO's CCNA3 curriculum for Switching and Intermediate Routing and CISCO's CCNA4 curriculum for WAN Technologies. The first half of the course focuses on advanced IP addressing techniques (Variable Length Subnet Masking (VLSM), intermediate routing protocols (RIP v2, single-area OSPF, EIGRP), command-line interface configuration of switches, Ethernet switches, Virtual LANs (VLANs), Spanning Tree Protocol (STP) and VLAN Trunking Protocol (VTP). The second half of the course focuses on advances IP addressing techniques (Network Address Translation (NAT), Port Address Translation (PAT), and (DHCP), WAN terminology and technology, PPP, ISDN, DRR, Frame Relay, network management and an introduction to optical networking. Preparation is also given to the study of CISCO's CCNA certification examination. Students learn through lecture and laboratory assignments.
Prerequisites: TEL-120
Additional Fees: Course fee applies.

TEL-232. Data Communication. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is a study of systems and equipment used in the transmission of data, interfacing data links to computers and troubleshooting of data links. Topics include VoIP (Voice over Internet Protocol), wireless technology, optical networking, serial interfaces, routing, link analysis, modems, data link and protocols, networking. The laboratory makes extensive use of protocol analysis for diagnostics.
Prerequisites: ELT-209 or TEL-110
Additional Fees: Course fee applies.

TEL-233. Network Operating Systems. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is an introduction to various network operating systems. Emphasis is placed on the study of a server in a client/server computer network. Topics of study include installation of a network operating system, securing a system, creating users and groups, partitioning of hard drive, installation of transport protocols, creating and maintaining printers, event viewing, performance monitoring, registry modification, configuring a server, creating and maintaining the active directory and troubleshooting the network.
Additional Fees: Course fee applies.
TEL-234. Telecommunications Systems. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course includes the study of the elements of telecommunications systems, emphasizing both voice and digital communications. Telephone loop operation and signaling, central office interface, switching, routing, transmission protocols, network architecture, T1 multiplexing and high-speed transmission are major topics. Advanced telecommunications topics such as ISDN and DSL are studied. Laboratory includes configuration, maintenance and diagnostic telecommunication systems.
Prerequisites: ELT-209 or CMP-230 and TEL-110
Additional Fees: Course fee applies.

TEL-239. Cooperative Work Experience - Telecommunications Systems Technology. 3 Credits.
COOP 3 hrs
This course is a field experience in the laboratory facilities of an industrial firm. Designed for students in Telecommunication Systems Technology programs to obtain industrial experience as a supplement to their college studies prior to career employment. Seminar evaluation visitations are included. Completion of the first year of the program is required to enroll.
Prerequisites: Permission of department chair.

TEL-290. Independent Study in Telecommunications Systems Technology. 3 Credits.
LECT 3 hrs
Students, in consultation with a Telecommunications Technology advisor, undertake an in-depth analysis of a selected topic, problem or issue related to the telecommunications industry or pursue additional related work experience. Students are responsible for developing a statement of goals and strategies, maintaining a weekly log and preparing a written and oral summary report. Written permission must be obtained from the department before registering for this course.
Prerequisites: Permission of department chair.

TEL-291. Special Topics in Telecommunications Systems Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
These courses provide students with an examination of selected topics or issues in telecommunications systems technology. Topics may differ each time the course is offered. Students should consult a Telecommunications Technology advisor for additional information.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

TEL-292. Special Topics in Telecommunications Systems Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
These courses provide students with an examination of selected topics or issues in telecommunications systems technology. Topics may differ each time the course is offered. Students should consult a Telecommunications Technology advisor for additional information.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

Visual Arts

Associate in Fine Art Degree, Visual Arts Option
The Associate in Fine Arts (AFA) degree focuses on developing an understanding of the visual arts through the intensive study of technique, history, theory and hands-on approaches in studio work and/or performance.

The AFA degree is designed to provide students with the competencies necessary to achieve seamless articulation into a Bachelor of Fine Arts program. The program focuses on intensive technical training and artistic development.

Articulation Agreements
Students should check with the Transfer Office about articulation agreements with this program.

Degrees

AFA Visual Arts
An Option within Fine Arts
(P4140)
The AFA Visual Arts option offers students a solid foundation for advanced study in the areas of Studio Art (Drawing, Painting, Sculpture, Ceramics), Art Education, Art History and Art Therapy. Students may take studio electives in a variety of media. The Visual Arts curriculum is designed for transfer into B.F.A. and B.A. degree programs in Fine Arts, Art Education, Art Therapy, Art History, Photography, Design and Graphic Design at four-year colleges, universities, schools of design and institutes of art.

If you are considering a career in teaching, please read about the Teacher Education Specialization in Visual Arts (http://www.ccm.edu/academics/degrees/visartedspec.aspx) at CCM.

General Education Foundation

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<td>Choose from General Education course list</td>
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<td>Mathematics Elective (3/4 CR)</td>
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<tr>
<td>Laboratory Science Elective (4 CR)</td>
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<td>Technology (0/1 CR)</td>
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<tr>
<td>Social Science</td>
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<tr>
<td>PSY-113</td>
<td>General Psychology</td>
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<tr>
<td>or SOC-127Principles of Sociology</td>
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General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ART-133</td>
<td>Art History I</td>
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<td>ART-134</td>
<td>Art History II</td>
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<tr>
<td>COM-109</td>
<td>Speech Fundamentals</td>
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</tbody>
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General Education Foundation Credits | 25-27

Visual Arts Core

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ART-122</td>
<td>Drawing I</td>
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<tr>
<td>ART-123</td>
<td>Drawing II</td>
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<td>ART-124</td>
<td>Figure Drawing</td>
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<td>ART-130</td>
<td>Two Dimensional Design</td>
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<td>ART-131</td>
<td>Color Theory</td>
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<td>ART-132</td>
<td>Three Dimensional Design</td>
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<tr>
<td>ART-219</td>
<td>Painting I</td>
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</tbody>
</table>
ART-228 Sculpture I 3
ART-241 Ceramics I 3
ART-230 Portfolio & Presentation 3
Visual Arts Electives 6
Visual Arts Core Credits 36
Total Credits 61-63

Faculty
Todd Doney
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B.A., Thomas Edison State College
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Keith Smith
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MFA, BFA, California College of the Arts
EH130 973-328-5779 ksmith@ccm.edu

Courses
ART-101. Art Start - a Creative Experience. 3 Credits.
LECT 1 hr, LAB 3 hrs
Art Start is designed to introduce the novice, the absolute beginning student, to a basic history of art, the tools and techniques used to make art, and the simple pleasure and experience of working with a variety of materials to create expressive art objects. No talent or prior experience is required. Instruction emphasizes process over product and hands-on experience as an avenue to understanding art theory and philosophy. Art Start experiences include collage, assemblage, drawing, watercolor painting, acrylic painting, printmaking and clay sculpture. This course is aerobic for the brain and soul food for the creative artist hiding within every person.
Additional Fees: Course fee applies.

ART-114. Contemporary Art. 3 Credits.
LECT 3 hrs
Contemporary Art launches with a review of 19th and 20th century art and then brings students to the here and now, the art and the artists of today. In lectures, multimedia presentations and field experiences, students are exposed to the pluralism of the new global art world.

ART-122. Drawing I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Drawing I, beginning art students learn the methods, materials and visual information needed to draw what we see. In small steps, students are led through a series of simple exercises designed to build competence and confidence. The diversity and complexity of the subjects drawn gradually grows along with students’ drawing and visual skills. Students create a sketch book and a portfolio including still life drawings, landscape drawings, perspective drawings and portraiture. Materials used include pencil, charcoal, conte crayon and ink.
Additional Fees: Course fee applies.

ART-123. Drawing II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Drawing II is an intermediate-level drawing course designed for students who wish to build upon the skills and knowledge acquired in ART-122 Drawing I. Students explore a wide range of tools, mediums and surfaces. Larger scale drawings, the introduction of color in drawing and experimentation with subjects and visual space are encouraged. Drawing II also includes a study of basic anatomy for artists and an introduction to drawing from live nude models, both male and female. By semester end, successful students will have created a sketch book and diverse portfolio of competent and expressive drawings that complement student portfolios begun in ART-122 Drawing I.
Prerequisites: ART-122
Additional Fees: Course fee applies.

ART-124. Figure Drawing. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Figure Drawing, student artists draw from live nude models, both male and female, study in-depth anatomy for artists and explore a variety of methods and materials to create expressive drawings of the human figure. By the end of the semester, successful students will have created a wide selection of figure drawings to support the drawing portfolio begun in Drawing I and continued in Drawing II.
Prerequisites: ART-122, ART-123
Additional Fees: Course fee applies.

ART-130. Two Dimensional Design. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Two Dimensional Design, students learn, through lectures, multimedia presentations, and simple drawing, painting and collage projects, how to control and compose visual elements on a two-dimensional plane. These visual elements include line, shape, light, texture, scale and a brief introduction to color applied on two-dimensional surfaces such as paper, board and canvas-board. Student artists who successfully complete this course will have a solid initial portfolio and the fundamental knowledge and basic skills needed to create better, more effective photographs, drawings, paintings, prints, illustrations, designs and graphic designs.
Additional Fees: Course fee applies.
ART-131. Color Theory. 3 Credits.  
LECT 2 hrs, LAB 3 hrs  
In Color Theory students learn, through lectures, multimedia presentations and assigned projects using a variety of art mediums, how color affects the human eye, mind, body and spirit. Students who successfully complete this course will add a strong body of artwork that exhibits a working knowledge of color theory and its application in the visual arts, adding to the initial portfolio of artwork created in Drawing I and Two Dimensional Design.  
Prerequisites: ART-122, ART-130  
Additional Fees: Course fee applies.

ART-132. Three Dimensional Design. 3 Credits.  
LECT 2 hrs, LAB 3 hrs  
In Three Dimensional Design, students, through lectures, multimedia presentations and assigned projects using a variety of materials and the basic aspects of planning, sketching and modeling, learn to understand and control the visual and physical forces inherent in the creation of three-dimensional objects. Students who successfully complete this course will add a body of three-dimensional art work to their portfolios. Student artists will also possess the fundamental knowledge and basic skills needed to pursue further studies in sculpture, ceramics, design (product, industrial, interior, fashion) and architecture.  
Prerequisites: ART-122, ART-130  
Additional Fees: Course fee applies.

ART-133. Art History I. 3 Credits.  
LECT 3 hrs  
Art History I is a global survey of the major developments in painting, sculpture and architecture from the cave art of prehistory through the art of Africa, the Near East, South and South East Asia, Korea, China, Japan, Egypt, Greece and Rome, through the Gothic in Europe. Students explore, through lectures, multimedia presentations and a field experience at major art museums, the social, technological and spiritual changes that influenced the evolution of subjects, styles and ideas expressed in early art.  
ART-134. Art History II. 3 Credits.  
LECT 3 hrs  
Art History II explores the significant developments in painting, sculpture and architecture from the High Renaissance to the art of the late 20th century, and the art of Africa and the Americas. Political, religious, scientific, industrial and technological revolutions are mirrored in the powerful and dramatic changes that take place in the art world. Through lecture, visual presentations and a field experience, students discover important stylistic movements of the last half-millennium from around the world.  
ART-219. Painting I. 3 Credits.  
LECT 2 hrs, LAB 3 hrs  
Painting I introduces students to the technical, formal and creative aspects of painting in either oil or acrylic paint. Student artists work with diverse subject matter and explore a variety of methods, tools and materials.  
Prerequisites: ART-122, ART-130, ART-131  
Additional Fees: Course fee applies.

ART-220. Painting II. 3 Credits.  
LECT 2 hrs, LAB 3 hrs  
Painting II advances students in the technical, formal and creative aspects of painting in either oil or acrylic paint. Student artists work with diverse subject matter and explore a variety of methods, tools and materials.  
Prerequisites: ART-219  
Additional Fees: Course fee applies.

ART-223. Printmaking I. 3 Credits.  
LECT 2 hrs, LAB 3 hrs  
Printmaking I introduces students to the historical, technical, formal and creative aspects of printmaking. Student artists work with new nontoxic water-based materials in an exploration of printing methods such as monotypes, relief prints, silk-screens and etching.  
Prerequisites: ART-122, ART-130.

ART-224. Printmaking II. 3 Credits.  
LECT 2 hrs, LAB 3 hrs  
Printmaking II is a continuation of Printmaking I with greater emphasis on color, originality, personal style and self-expression. Student artists are challenged to create a connected body of prints or an artist's book.  
Prerequisites: ART-122, ART-130, ART-131, ART-223.

ART-228. Sculpture I. 3 Credits.  
LECT 2 hrs, LAB 3 hrs  
In Sculpture I, students explore space and form, and three-dimensional media in the creation of expressive sculptural objects. Students model, carve and construct in a variety of media such as clay, plaster, stone, wood, metal and paper.  
Prerequisites: ART-122, ART-130, ART-131, ART-132  
Additional Fees: Course fee applies.

ART-229. Sculpture II. 3 Credits.  
LECT 2 hrs, LAB 3 hrs  
Sculpture II builds on the basic skills acquired in prerequisite courses and Sculpture I. Sculpture II is an extension of Sculpture I with a greater emphasis on originality and personal style and self-expression. Student artists continue to develop their understanding of the human figure, form and of the media and techniques by which to represent them.  
Prerequisites: ART-228  
Additional Fees: Course fee applies.

ART-230. Portfolio and Presentation. 3 Credits.  
LECT 2 hrs, LAB 3 hrs  
Portfolio and Presentation guides students in the selection of artworks appropriate to include in final portfolios. Students improve, restore, repair or complete any work necessary to the portfolio. Students assemble, collate and document all work in physical and digital forms in preparation for submission to targeted transfer institutions, galleries, museums or prospective employers or clients. Students create written documents including resumes, cover letters and biographies to support professional activities. A final art exhibition and formal presentation of the portfolio and supporting materials are required.  
Prerequisites: ART-122, ART-130, ART-131 and ART-132  
Additional Fees: Course fee applies.
ART-233. Independent Study I. 1 Credit.
LECT 1 hr
Course study designed with a faculty advisor. The student is responsible for developing a statement of goals and objectives and submitting a summary project.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

ART-234. Independent Study II. 2 Credits.
LECT 2 hrs
A project designed with a faculty advisor. The student is responsible for developing a statement of goals and objectives, maintaining a weekly log and submitting a summary project.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

ART-237. Watercolor Painting. 3 Credits.
LECT 1 hr, LAB 4 hrs
In this course, students learn, through demonstration and experience, how to paint using the expressive medium of watercolor. Students create still life, landscape, figurative and abstract paintings. Students who successfully complete this course will have a portfolio of watercolor paintings and the fundamental knowledge and basic skills needed to effectively use the medium.

ART-238. Independent Study III. 3 Credits.
LECT 3 hrs
A project designed with a faculty advisor. The student is responsible for developing a statement of goals and objectives, maintaining a weekly log and submitting a summary project.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

ART-241. Ceramics I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
The study and practice of ceramics - the preparation of clay, hand building, wheel-throwing and glazing. Emphasis is placed on contemporary American techniques.
Additional Fees: Course fee applies.

ART-242. Ceramics II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
The study and practice of ceramics. Emphasis is placed on producing finished ceramic artworks.
Prerequisites: ART-241
Additional Fees: Course fee applies.

ART-291. Special Topics in Art. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Studio work in selected topics or issues in art.
Additional Fees: Course fee applies.

ART-292. Special Topics in Art. 3 Credits.
LECT 1 hr, LAB 4 hrs
Studio work in selected topics or issues in art.
Additional Fees: Course fee applies.

College Life
Attending class is just part of what going to college is all about. College is a time for meeting new people, exploring your interests and, yes, having some fun, too. At County College of Morris, you have endless opportunities to do what interests you.

To learn about all that is available to enhance your college experience, please review the links in the navigation area.

Athletics
Intercollegiate Athletics
Philosophy
The Athletics Program at County College of Morris (CCM) encourages the development and growth of students by providing programs in intercollegiate athletics, intramurals and recreational activities. A priority is to foster the overall growth and development of students, present a structured, well-rounded athletics program for men and women that provides healthy personal and social growth opportunities, and supports and reinforces the educational goals of each student-athlete. In addition to providing support services to student-athletes including, but not limited to, personal counseling, financial aid, tutoring and transfer assistance, the Athletics Program offers a professional, industrious and highly motivated coaching staff, modern up-to-date facilities and adequate support in the treatment, prevention and care of injuries.

Competition
The college believes strongly that a comprehensive athletics program contributes significantly to the overall program of an educational institution. Intercollegiate competition for both men and women now includes the following:

Fall Programs | Winter Programs | Spring Programs
--- | --- | ---
Women's Volleyball | Women's Basketball | Softball
Women's Soccer | Men's Basketball | Baseball
Men's Soccer | Men's Lacrosse | Golf

Membership
CCM is a member of the National Junior College Athletic Association, which consists of 24 geographical regions throughout the country. The college also competes in Region XIX, which encompasses the states of Delaware, New Jersey and eastern Pennsylvania, and the Garden State Athletic Conference.

Eligibility—Intercollegiate Athletics
All students interested in competing in the intercollegiate program are required to carry, as a regularly enrolled student, a minimum of 12 credit hours of college work as listed in the college catalog.

Students must maintain a satisfactory average as mandated by the college and/or the National Junior College Athletic Association.

Students must pass a complete medical examination by the college physician prior to each season of participation. All transfer students from either a two- or four-year college should contact the Director of Athletics regarding the status of their eligibility prior to competition.

Facilities
The college is proud of its athletic resources and the department staff consisting of 18 coaches, an Intramural director, a full-time trainer, an Aquatics supervisor, an equipment manager, and an administrative support staff person. Student-athletes, other students,
faculty and staff have full use of a modern weight room and Fitness Center housing the latest in weight-training equipment and exercise equipment. The Natatorium is a beautiful six-lane, 25-yard facility with spectator seating so that both recreational use and swimming competitions can be accommodated.

CCM’s 1,800-seat gymnasium, home for men and women’s basketball games, as well as the site of the Morris County High School Basketball Tournament championships, is an attractive arena. The college’s outdoor facilities include a baseball field, a softball field, two regulation soccer/lacrosse fields, a multipurpose practice field and eight recently renovated tennis courts. The college also contracts with the Picatinny Arsenal Golf Course for varsity golf.

Intramurals

Philosophy
The Intramural Program is designed to give students the opportunity to participate in some form of team or individual play and to keep them physically active and mentally prepared so that they may accomplish their primary goal in attending County College of Morris (CCM) — that of achieving a well-rounded education.

The successful program is dependent upon student interest in the organization and execution of the program. The goal of the total program is to encourage active participation of everyone. Through diverse programs, students enjoy the competition, sportsmanship and teamwork — all of which assists students in making new friends at CCM.

Organization
The Intramural Program is administered by the Intramural Director, who is under the direct supervision of the Director of Athletics. Student intramural assistants participate in the program by acting as umpires, officials and scorekeepers, as well as collecting and compiling all necessary records and results.

What Are Intramurals?
The Athletics Department offers on-campus intramural sports competition twice a week. Hours of competition vary so interested individuals should consult the semester schedule of intramural activities for specific details. Occasionally, CCM competes with other local college intramural programs in volleyball, bowling and flag football.

Is it Competitive or Just for Fun?
The philosophy of the Intramural Program is to offer programs that are both fun and competitive.

Who Can Play?
Any full-time or part-time student may participate in intramural sports activities. Students can sign up as an individual or as a team.

What Else will I Need to Know?
For all gym activities, students must have a valid CCM student ID card on them at all times, wear sneakers, shorts, T-shirts or sweat outfits.

Program Offerings
- Co-Ed Volleyball
- Whiffleball
- Badminton
- Tennis
- 3 on 3 Basketball
- Bowling

Please contact the Intramural Director in Room 125 of the Health and Physical Education Building or call 973-328-5255 for more information.

Campus Life

The Office of Campus Life has as its mission the enrichment of the academic programs of study at County College of Morris (CCM) and the enhancement of the overall educational experience of students through exposure to and participation in cultural, social, recreational, intellectual, and governance programs and activities. The department also serves as a resource and information center not only for the student organizations it oversees but also for the overall campus community. It supports many extracurricular and co-curricular needs of the college, providing services, programs, events, trips, activities and publications that enhance the college experience.

Services
Campus Life services include issuing student identification cards; managing planetarium reservations; selling discount recreational, cultural and ski area tickets; renting DVDs; issuing passes for area museums and attractions; and selling tickets for on-campus and off-campus events. Visit the Campus Life Information Window in the Student Community Center to take advantage of these services.

New Student Orientation
The college provides an orientation program for new students before the beginning of each semester. Students have the opportunity to explore the campus, learn about various college services, meet with members of the campus community and get information on extracurricular and co-curricular activities and programs.

Student Community Center
The Student Community Center is the facility on campus that serves as the center of campus life. In addition to housing most departments involved in the enrollment process (Admissions, Financial Aid, Academic Advisement, Records and Registration, and Bursar), the Student Community Center includes a lounge with modest performance space and a central fireplace, a large-screen TV, a game room, student organization offices, a TV lounge, several multipurpose rooms, the Campus Store and SCC Café. Additionally, the Office of Campus Life, the Office of Counseling and Student Success, the Women’s Center, the Office of Student Development and Enrollment Management, and the Dragonetti Auditorium are located in this building.
Campus Store

The Campus Store, located on the upper level of the Student Community Center, has all the required textbooks, supplements and other materials needed for classroom use, as well as tradebooks, study guides and reference books. It also has an extensive assortment of clothing, novelties, supplies, greeting cards, stationary, software, backpacks, CCM specialty logo items and candy.

The Campus Store (https://bookstore.ccm.edu) website offers textbooks and emblematic merchandise.

Extended hours are offered at the beginning of each semester and are posted at the Campus Store and online.

Regular Campus Store hours are as follows:
Monday and Thursday, 8:30 a.m. to 6:30 p.m.
Tuesday, Wednesday and Friday, 8:30 a.m. to 4:30 p.m.

Food Service

The SCC Café is located in the Student Community Center and offers a wide assortment of grilled items, pizza, daily entree specials, sandwiches, a salad bar, soups, beverages and desserts served in a relaxing setting.

Fall and Spring Hours for the SCC Café
Monday-Thursday, 7:30 a.m. to 3:30 p.m.
Friday, CLOSED

The Cohen Café features a full Quiznos station, “Chickendipity” and an assortment of “Grab and Go” items for the busy student including premade sandwiches and salads, breakfast choices, soups, beverages, desserts and snacks.

Fall and Spring Hours for the Cohen Café
Monday-Thursday, 7:30 a.m. to 8:30 p.m.
Friday, 7:30 a.m. to 2 p.m.

Summer Hours

Note: Only the Cohen Café is open for summer classes.

When day classes are in session:
Monday-Thursday, 7:30 a.m. to 2 p.m.
Friday, CLOSED

When Summer Late 5 starts and Summer Late 5 ends (June 27 - July 30):
Monday-Thursday, 7:30 a.m. to 2 p.m., and 2 p.m. to 7 p.m Grab & Go only.
Friday, CLOSED

For the most up-to-date information on Summer Hours, please visit the Food Service website at www.dineoncampus.com/ccm (http://www.dineoncampus.com/ccm).

Fall and Spring Hours for the LRC Café
Monday-Thursday, 7:30 a.m. to 4 p.m.
Friday, CLOSED

The LRC Café proudly brews Starbucks coffee. Assorted sandwiches, salads, snack and cold beverages also are available.

In addition, vending machines are located in a variety of areas across the campus, including the Student Community Center, all academic buildings, Henderson Hall and the Health and Physical Education building.

Hours for the SCC, Cohen and LRC cafés are limited during spring and holiday breaks. Please check postings or www.dineoncampus.com/ccm (http://www.dineoncampus.com/ccm) for any time changes during those days.

Library/Learning Resource Center

The Sherman H. Masten Learning Resource Center (LRC), named after the college’s first president, provides library, media services and information literacy instruction to the campus.

The library provides:

• Books, ebooks, articles, DVDs, databases and other resources
• Wireless network, computers for Internet access and general and college applications
• Expert research help for classes and for individuals – in person or by phone, email or chat
• Quiet study and group study space
• Off-campus access to research databases and guides 24/7 through the library website
• Copiers, printers and scanner
• Specialized collections in foundation grant material, federal government documents and County College of Morris history

The LRC’s Alex DeCroce Media Center consists of a professional television studio and related facilities for audio and video production and instructional activity and is home to Morris Educational Television, a 24-hour, seven-day-per-week educational access channel airing educational and local programming on Cablevision’s Channel 77 and Verizon FiOS Channel 40.

For more information, call 973-328-5296 or visit the LRC’s website at www.ccm.edu/library (http://www.ccm.edu/library).

Planetarium

The Madeline D. and Joseph J. Longo Planetarium is located in Cohen Hall. The state-of-the-art facility is used for credit and non-credit courses as well as private and public programs. Public programs are offered on weekends. Reservations are suggested and can be made by calling 973-328-5076. For a schedule of upcoming shows, visit the planetarium (http://www.ccm.edu/planetarium) website.
Student Clubs and Organizations

Part of college life is the personal enrichment obtained outside of the classroom through involvement in campus activities. Through participation in the various County College of Morris (CCM) academic, cultural, social, religious, governance and recreational organizations, students have the opportunity for self-exploration and self-discovery while developing relationships with fellow students, faculty members, staff and administrators. There are usually between 45 to 50 active student organizations in any given year. While the current group of student clubs serves a wide range of interests, new student organizations can be started at any time during the academic year.

For current student organization descriptions, visit (http://www.ccm.edu/studentLife/CLO/clublisting.aspx) Student Organization Descriptions.

College Activity Hour

Students who would like to participate in campus activities may want to plan their schedule around “College Activity Hour.” Each week, the college sets aside specific activity periods, 12:30 p.m. to 1:45 p.m. every Tuesday and Thursday. During these times, students may participate in many activities, including student club and organizational meetings, intramural activities, college committee meetings and college sponsored functions such as special lectures, films, festivals and celebrations. In most cases, classes scheduled during “College Activity Hour” can be taken at other times.

For current student news and events, visit http://www.ccm.edu/studentLife/UpcomingEvents.aspx.

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Accounting (ACC)

Courses

ACC-105. Computerized Accounting. 3 Credits.
LECT 3 hrs
This course is designed to introduce students to a widely used software program used to record and track accounting transactions and that simplifies financial tasks. By using QuickBooks, the students will analyze and record accounting transactions in a computerized environment.
ACC-108. Accounting for Hospitality. 3 Credits.
LECT 3 hrs
This course is an introduction to basic accounting principles and procedures for the hospitality student. This course integrates the accounting and financial practices of the hospitality industry with GAAP (generally accepted accounting principles). This course will include preparation of financial statements, budgeting, controlling food costs, pricing, and managing accounts payable and accounts receivable.

ACC-110. Elements of Accounting. 3 Credits.
LECT 3 hrs, LAB 1 hr
This is an introductory accounting course that focuses on accounting for small businesses. Emphasis is placed on recordkeeping from basic journalizing to year-end closing and financial statement preparation. Additionally, the course covers payroll and taxation issues related to small business operations.
Prerequisites: MAT-007 or equivalent

ACC-111. Principles of Accounting I - Financial Accounting. 3 Credits.
LECT 3 hrs, LAB 1 hr
Financial accounting is a service activity that functions to collect and communicate useful financial information about economic entities. The course will be concerned with processing accounting information assets and liabilities, accounting theory for corporations and financial statement analysis.
Prerequisites: MAT-016 or equivalent
Additional Fees: Course fee applies.

ACC-112. Principles of Accounting II - Managerial Accounting. 3 Credits.
LECT 3 hrs, LAB 1 hr
A segment of accounting that deals specifically with how accounting data and other financial information can be used in the management of business, governmental or not-for-profit entities. The course is specifically designed to assist internal management and deals with cost-volume-profit analysis, cost systems, budgeting and performance evaluation for goal congruence and statement analysis designed for future managers.
Prerequisites: ACC-111 minimum grade of C
Additional Fees: Course fee applies.

ACC-211. Intermediate Accounting I. 3 Credits.
LECT 3 hrs
A study of the complex aspect of financial accounting and reporting for persons outside the firm. The course includes the expanded treatment of generally accepted accounting principles (GAAP) underlying the preparation of financial statements and of cash and temporary investments, receivables, present value concepts, cash flow valuations of assets and inventories, methods of estimating the inventory depreciation and depletion.
Prerequisites: ACC-112.

ACC-212. Intermediate Accounting II. 3 Credits.
LECT 3 hrs
The course includes the study of financial accounting and reporting. Course includes expanded treatment of generally accepted accounting principles (GAAP) as they relate to long-term investments, liabilities (both current and long-term), leases, pensions, income taxes, earnings per share, financial statement analysis and other topics.
Prerequisites: ACC-211.

ACC-213. Tax Procedures. 3 Credits.
LECT 3 hrs
A study of the Internal Revenue Code and application of accounting principles for preparation of federal individual income tax returns. Limited business application.
Prerequisites: ACC-111.

ACC-215. Cost Accounting. 3 Credits.
LECT 3 hrs
This course covers the basic procedures and techniques of accounting for the production and distribution of goods. It provides an explanation of the cost components of manufacturing operations: direct materials, direct labor and factory overhead.
Prerequisites: ACC-112.

ACC-230. Principles of Auditing. 3 Credits.
LECT 3 hrs
This course integrates the most important concepts of auditing as well as certain practical aspects in a logical manner to assist students in understanding audit decision making and evidence accumulation. Coverage includes, but is not limited to, concepts of evidence accumulation; analytical procedures as audit tools; probability and risk and their effect on the audit; application of the auditing process to the sales and collection cycle and other cycles; audit reports and requirements for completion of the audit cycle.
Prerequisites: ACC-212.

ACC-231. Government and Not-For-Profit Accounting. 3 Credits.
LECT 3 hrs
This course involves financial analysis and reporting for government and not-for-profit organizations, including concepts, standards, and procedures designed to accommodate the uniqueness of the not-for-profit environment. The course deals specifically with financial accounting and reporting aspects applicable to (1) state and local governments and other special districts and public authorities; and (2) the Federal government agencies, universities and hospitals.
Prerequisites: ACC-212.

ACC-239. Special Topics in Accounting. 3 Credits.
LECT 3 hrs
This course offers students an opportunity to explore special topics or issues in Accounting. Topics may differ each time the course is offered and may include areas of negotiation or conflict resolution.

ACC-292. Special Topics in Accounting. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in accounting. Topics may differ each time the course is offered. Students should consult the department chairperson for further information.

American Sign Language (ASL)

Courses

ASL-111. American Sign Language I. 3 Credits.
LECT 3 hrs
This course is an introduction to the expressive and receptive skills required for communication in American Sign Language (ASL). Through active class use of basic vocabulary, grammar and syntax, students will begin exploration of deaf culture and begin to learn the language of that culture. This course is not intended for students with more than one year of previous study of this language at the high school level.
ASL-112. American Sign Language II. 3 Credits.
LECT 3 hrs
This course is a continuation to the basic expressive and receptive skills required for communication in American Sign Language (ASL). Through active class use of basic vocabulary, grammar, and syntax, students begin the exploration of Deaf culture and begin to learn the language of that culture. Students will be better informed about the appropriate course of action when encountering or assisting deaf individuals in our community. Students are expected to search the Internet to watch, evaluate and gather information from different modalities of ASL conversation. This course is not intended for students with more than two years of previous study of this language.
Prerequisites: ASL-111 or permission of department chair.

ASL-211. Intermediate American Sign Language I. 3 Credits.
LECT 3 hrs
Intermediate American Sign Language I expands the students' vocabulary and enhances their expressive and receptive skills through class discussions, pair/group work, simulations and presentations. The course is conducted mostly in American Sign Language. It also features extensive discussions of Deaf culture and requires students to write a paper on one of the topics discussed including ethical issues as accommodations and inclusion/exclusion in mainstream society. Students are expected to conduct research not only for this paper, but also for their final presentation. This course is not intended for students with three or more years of previous study of this language.
Prerequisites: ASL-112.

ASL-212. Intermediate American Sign Language II. 3 Credits.
LECT 3 hrs
Intermediate American Sign Language II further expands the students' vocabulary and enhances their expressive and receptive skills through class discussions, pair/group work, simulations, and presentations. This course is intended to build upon students' knowledge of the rules of ASL, including discourse markers, personal narratives, dynamic equivalencies, non-manual grammar, syntax, classifiers, temporalization, pronominalization, turn-taking, use of space, sentence structure and types, and gesture. This course will also include lessons on Deaf culture, history, and literature. The course is conducted mostly in American Sign Language. It also features extensive discussions of Deaf culture and requires students to research on-line and write a paper on one of the topics discussed including accommodations, and inclusion/exclusion in mainstream society. Students are also expected to conduct research for their final presentation. This course is not recommended for students with four or more years of previous study of this language.
Prerequisites: ASL-211.

Arabic (ARA)

Courses

ARA-111. Elementary Arabic I. 3 Credits.
LECT 3 hrs
This course is designed for students with little or no prior knowledge of Arabic. Coursework combines the use of a textbook and other relevant and authentic materials for writing, reading, speaking and listening comprehension. By the end of the course, students are expected to master the writing and sound systems of Arabic, understand and use basic grammatical structures, have use of basic vocabulary words, comprehend short reading passages and understand simple utterances. Not intended for native speakers.
Prerequisites: ARA-111 or permission of department chair.

ARA-211. Intermediate Arabic I. 3 Credits.
LECT 3 hrs
This course briefly reviews the grammar covered in Elementary Arabic II. It expands the Arabic vocabulary, grammar, reading and writing skills of those students wishing to attain intermediate knowledge of the Arabic language.
Prerequisites: ARA-112 or permission of department chair.

Art (ART)

Courses

ART-101. Art Start - a Creative Experience. 3 Credits.
LECT 1 hr, LAB 3 hrs
Art Start is designed to introduce the novice, the absolute beginning student, to a basic history of art, the tools and techniques used to make art, and the simple pleasure and experience of working with a variety of materials to create expressive art objects. No talent or prior experience is required. Instruction emphasizes process over product and hands-on experience as an avenue to understanding art theory and philosophy. Art Start experiences include collage, assemblage, drawing, watercolor painting, acrylic painting, printmaking and clay sculpture. This course is aerobics for the brain and soul food for the creative artist hiding within every person.
Additional Fees: Course fee applies.

ART-114. Contemporary Art. 3 Credits.
LECT 3 hrs
Contemporary Art launches with a review of 19th and 20th century art and then brings students to the here and now, the art and the artists of today. In lectures, multimedia presentations and field experiences, students are exposed to the pluralism of the new global art world.
ART-116. American Art. 3 Credits.
LECT 3 hrs
A survey and overview of the development of visual art traditions in America beginning with the colonization of the Americas and continuing through the Modern and Post-Modern periods. Arts, crafts and architecture are examined as well as Native American, African American, Hispanic and other cultural influences contributing to the development of a uniquely American experience and vision.

ART-122. Drawing I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Drawing I, beginning art students learn the methods, materials and visual information needed to draw what we see. In small steps, students are led through a series of simple exercises designed to build competence and confidence. The diversity and complexity of the subjects drawn gradually grows along with students' drawing and visual skills. Students create a sketch book and a portfolio including still life drawings, landscape drawings, perspective drawings and portraiture. Materials used include pencil, charcoal, conte crayon and ink.

Additional Fees: Course fee applies.

ART-123. Drawing II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Drawing II is an intermediate-level drawing course designed for students who wish to build upon the skills and knowledge acquired in ART-122 Drawing I. Students explore a wide range of tools, mediums and surfaces. Larger scale drawings, the introduction of color in drawing and experimentation with subjects and visual space are encouraged. Drawing II also includes a study of basic anatomy for artists and an introduction to drawing from live nude models, both male and female. By semester end, successful students will have created a sketch book and diverse portfolio of competent and expressive drawings that complement student portfolios begun in ART-122 Drawing I.

Prerequisites: ART-122

Additional Fees: Course fee applies.

ART-124. Figure Drawing. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Figure Drawing, student artists draw from live nude models, both male and female, study in-depth anatomy for artists and explore a variety of methods and materials to create expressive drawings of the human figure. By the end of the semester, successful students will have created a wide selection of figure drawings to support the drawing portfolio begun in Drawing I and continued in Drawing II.

Prerequisites: ART-122, ART-123

Additional Fees: Course fee applies.

ART-130. Two Dimensional Design. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Two Dimensional Design, students learn, through lectures, multimedia presentations, and simple drawing, painting and collage projects, how to control and compose visual elements on a two-dimensional plane. These visual elements include line, shape, light, texture, scale and a brief introduction to color applied on two-dimensional surfaces such as paper, board and canvas-board. Student artists who successfully complete this course will have a solid initial portfolio and the fundamental knowledge and basic skills needed to create better, more effective photographs, drawings, paintings, prints, illustrations, designs and graphic designs.

Additional Fees: Course fee applies.

ART-131. Color Theory. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Color Theory students learn, through lectures, multimedia presentations and assigned projects using a variety of art mediums, how color affects the human eye, mind, body and spirit. Students who successfully complete this course will add a strong body of artwork that exhibits a working knowledge of color theory and its application in the visual arts, adding to the initial portfolio of artwork created in Drawing I and Two Dimensional Design.

Prerequisites: ART-122, ART-130

Additional Fees: Course fee applies.

ART-132. Three Dimensional Design. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Three Dimensional Design, students, through lectures, multimedia presentations and assigned projects using a variety of materials and the basic aspects of planning, sketching and modeling, learn to understand and control the visual and physical forces inherent in the creation of three-dimensional objects. Students who successfully complete this course will add a body of three-dimensional art work to their portfolios. Student artists will also possess the fundamental knowledge and basic skills needed to pursue further studies in sculpture, ceramics, design (product, industrial, interior, fashion) and architecture.

Prerequisites: ART-122, ART-130

Additional Fees: Course fee applies.

ART-133. Art History I. 3 Credits.
LECT 3 hrs
Art History I is a global survey of the major developments in painting, sculpture and architecture from the cave art of prehistory through the art of Africa, the Near East, South and South East Asia, Korea, China, Japan, Egypt, Greece and Rome, through the Gothic in Europe. Students explore, through lectures, multimedia presentations and a field experience at major art museums, the social, technological and spiritual changes that influenced the evolution of subjects, styles and ideas expressed in early art.

ART-134. Art History II. 3 Credits.
LECT 3 hrs
Art History II explores the significant developments in painting, sculpture and architecture from the High Renaissance to the art of the late 20th century, and the art of Africa and the Americas. Political, religious, scientific, industrial and technological revolutions are mirrored in the powerful and dramatic changes that take place in the art world. Through lecture, visual presentations and a field experience, students discover important stylistic movements of the last half-millennium from around the world.

ART-219. Painting I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Painting I introduces students to the technical, formal and creative aspects of painting in either oil or acrylic paint. Student artists work with diverse subject matter and explore a variety of methods, tools and materials.

Prerequisites: ART-122, ART-130, ART-131

Additional Fees: Course fee applies.
ART-220. Painting II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Painting II advances students in the technical, formal and creative aspects of painting in either oil or acrylic paint. Student artists work with diverse subject matter and explore a variety of methods, tools and materials.
**Prerequisites:** ART-219
**Additional Fees:** Course fee applies.

ART-223. Printmaking I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Printmaking I introduces students to the historical, technical, formal and creative aspects of printmaking. Student artists work with new nontoxic water-based materials in an exploration of printing methods such as monotypes, relief prints, silk-screens and etching.
**Prerequisites:** ART-122, ART-130.

ART-224. Printmaking II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Printmaking II is a continuation of Printmaking I with greater emphasis on color, originality, personal style and self-expression. Student artists are challenged to create a connected body of prints or an artist's book.
**Prerequisites:** ART-122, ART-130, ART-131, ART-223.

ART-228. Sculpture I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Sculpture I, students explore space and form, and three-dimensional media in the creation of expressive sculptural objects. Students model, carve and construct in a variety of media such as clay, plaster, stone, wood, metal and paper.
**Prerequisites:** ART-122, ART-130, ART-131, ART-132
**Additional Fees:** Course fee applies.

ART-229. Sculpture II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Sculpture II builds on the basic skills acquired in prerequisite courses and Sculpture I. Sculpture II is an extension of Sculpture I with a greater emphasis on originality and personal style and self-expression. Student artists continue to develop their understanding of the human figure, form and of the media and techniques by which to represent them.
**Prerequisites:** ART-228
**Additional Fees:** Course fee applies.

ART-230. Portfolio and Presentation. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Portfolio and Presentation guides students in the selection of artworks appropriate to include in final portfolios. Students improve, restore, repair or complete any work necessary to the portfolio. Students assemble, collate and document all work in physical and digital forms in preparation for submission to targeted transfer institutions, galleries, museums or prospective employers or clients. Students create written documents including resumes, cover letters and biographies to support professional activities. A final art exhibition and formal presentation of the portfolio and supporting materials are required.
**Prerequisites:** ART-122, ART-130, ART-131 and ART-132
**Additional Fees:** Course fee applies.

ART-233. Independent Study I. 1 Credit.
LECT 1 hr
Course study designed with a faculty advisor. The student is responsible for developing a statement of goals and objectives and submitting proposed projects.
**Prerequisites:** Permission of department chair
**Additional Fees:** Course fee applies.

ART-234. Independent Study II. 2 Credits.
LECT 2 hrs
A project designed with a faculty advisor. The student is responsible for developing a statement of goals and objectives, maintaining a weekly log and submitting a summary project.
**Prerequisites:** Permission of department chair
**Additional Fees:** Course fee applies.

ART-237. Watercolor Painting. 3 Credits.
LECT 1 hr, LAB 4 hrs
In this course, students learn, through demonstration and experience, how to paint using the expressive medium of watercolor. Students create still life, landscape, figurative and abstract paintings. Students who successfully complete this course will have a portfolio of watercolor paintings and the fundamental knowledge and basic skills needed to effectively use the medium.

ART-238. Independent Study III. 3 Credits.
LECT 3 hrs
A project designed with a faculty advisor. The student is responsible for developing a statement of goals and objectives, maintaining a weekly log and submitting a summary project.
**Prerequisites:** Permission of department chair
**Additional Fees:** Course fee applies.

ART-241. Ceramics I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
The study and practice of ceramics - the preparation of clay, hand building, wheel-throwing and glazing. Emphasis is placed on contemporary American techniques.
**Additional Fees:** Course fee applies.

ART-242. Ceramics II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
The study and practice of ceramics. Emphasis is placed on producing finished ceramic artworks.
**Prerequisites:** ART-241
**Additional Fees:** Course fee applies.

ART-291. Special Topics in Art. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Studio work in selected topics or issues in art.
**Additional Fees:** Course fee applies.

ART-292. Special Topics in Art. 3 Credits.
LECT 1 hr, LAB 4 hrs
Studio work in selected topics or issues in art.
**Additional Fees:** Course fee applies.
Courses

BIO-100. Elements in Biology. 3 Credits.
LECT 3 hrs
A foundation providing necessary skills and concepts needed to pursue the biology major. The course stresses skill development in areas such as communication, classification, inquiry, mathematical measurement, data analysis and report writing. Skills then are applied to the study of the cell cycle and diverse life processes.
Additional Fees: Course fee applies.

BIO-101. Anatomy and Physiology I. 4 Credits.
LECT 3 hrs, LAB 3 hrs
The structure and function of the human organism is studied. Special emphasis is given to interrelationships of organs and organ systems. Cellular morphology and function are included for an appreciation of the adult form. The student is introduced to basic chemistry, the cell, basic tissues, the skeletal, muscular and nervous systems. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025 and MAT-016
Additional Fees: Course fee applies.

BIO-102. Anatomy and Physiology II. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A continuation of Anatomy and Physiology I. The circulatory, respiratory, digestive, urinary, endocrine and reproductive systems are studied. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.
Prerequisites: BIO-101 (Minimum grade of C)
Additional Fees: Course fee applies.

BIO-116. Animal Control Officer’s Training Course. 3 Credits.
LECT 3 hrs
Preparation for New Jersey State Certification as an Animal Control Officer. Topics include legal authority for animal control (federal, state, local); courtroom procedures; animal behavior, capture and handling; disease recognition, prevention and control; shelter operations; and community relations.

BIO-118. Biomedical Ethics. 3 Credits.
LECT 3 hrs
This course introduces students to major ethical issues in areas of biomedicine in contemporary society. The focal point of the course is a process for ethical reasoning and ethical decision making. Students identify ethical problems, assess information relevant to decisions, identify stakeholders affected by decisions, recognize competing values, consider options, make decisions and realize the consequences of decisions. The process is applied to issues in such fields as genetics, death and dying, reproduction, public policy and medical decision making. This course does not fulfill a laboratory science requirement.

BIO-121. General Biology I. 4 Credits.
LECT 3 hrs, LAB 3 hrs
An introduction to the biological sciences through a study of concepts basic to the biology science major. Topics include the fundamentals of chemistry, cell structure and function, and the nature of biological molecules, bioenergetics, protein synthesis and photosynthesis. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.
Prerequisites: Placement basis or MAT-016 and ENG-007 or ENG-025 or ENG-022
Additional Fees: Course fee applies.

BIO-122. General Biology II. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A continuation of General Biology I. Topics include homeostasis, animal reproduction, embryonic development, genetics, ecology and evolution. Dissection is required as part of the laboratory syllabus. All remedial courses must be completed prior to taking this course.
Prerequisites: BIO-121 or BIO-180 (Minimum grade of C)
Additional Fees: Course fee applies.

BIO-123. Cell Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Fall semester only. An introduction to the fundamentals of cellular biology. Topics covered are the nature of biologically important molecules, molecular synthesis, energetics, cellular structure and function, cell reproduction, heredity, and basic laboratory techniques for cellular study. All remedial courses must be completed prior to taking this course.
Prerequisites: Placement basis or MAT-016 and ENG-007 or ENG-025 or ENG-022
Additional Fees: Course fee applies.

BIO-127. Biology of Environmental Concerns. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. A survey of ecological issues from a variety of perspectives. The course provides an awareness of environmental problems, a knowledge of cause-and-effect relationships of diverse activities on this planet and a basis for making informed judgments about the potential solutions to environmental problems. Major topics include the roots of our environmental problems, introductory concepts in ecology, human population dynamics and control, food resources and world hunger, renewable and nonrenewable energy resources, mineral resources and solid waste, wild plant and animal resources, water resources, air pollution, water pollution, pesticides and pest control, economics, politics and the environment, world views, and ethics and the environment. This course fulfills the general education laboratory science requirement.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.

BIO-132. Concepts in Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. A basic introduction to the study of biological science. Topics include the hierarchy of organization, life processes, cell theory, human genetics, theories of evolution, biochemistry and some principles of ecology. This course fulfills the general education laboratory science requirement.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.
BIO-133. Human Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. An introduction to the body systems and the factors which affect human physiology. Lectures include the basic anatomy and physiology of the major systems plus discussion topics emphasizing nutrition, exercise, sexuality, genetic engineering and recent advances in biotechnology. This course fulfills the general education laboratory science requirement.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.

BIO-181. General Biology II - Honors. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Spring Semester only. A continuation of BIO-180 General Biology I Honors. Topics include fundamentals of chemistry, cell structure and function, the nature of biological molecules, energetics, synthesis and the morphology and physiology of animals and plants. Dissection is required as part of the laboratory syllabus. Lecture and laboratory use an investigatory approach which will emphasize both written and oral communication skills.
Prerequisites: Placement basis or MAT-016 and ENG-007 or ENG-022 or ENG-025 and permission of department chair or honors advisor
Additional Fees: Course fee applies.

BIO-180. General Biology I - Honors. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Fall Semester only. This is an introduction to the biological sciences through a study of principles and concepts basic to the major discipline of biology. Topics include fundamentals of chemistry, cell structure and function, the nature of biological molecules, energetics, synthesis and the morphology and physiology of animals and plants. Dissection is required as part of the laboratory syllabus. Lecture and laboratory use an investigatory approach which will emphasize both written and oral communication skills.
Prerequisites: Placement basis or MAT-016 and ENG-007 or ENG-022 or ENG-025 and permission of department chair or honors advisor
Additional Fees: Course fee applies.

BIO-201. Genetics. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Spring Semester only. Provides the student with a broad knowledge of genetics from the molecular to the organismal level. Topics covered include the molecular and Mendelian concepts of heredity and their relationship to cell function, development, population changes and evolution, and biotechnology. Laboratory exercises emphasize a variety of techniques and skills used in genetic research and testing.
Prerequisites: BIO-121 and BIO-122 or BIO-180 and BIO-181 (Minimum grade of C required for all prerequisites)
Additional Fees: Course fee applies.

BIO-202. Ecology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Fall Semester only. This course introduces the basic fundaments of ecology, the study of the interrelationships between organisms and their environment. Topics include an introduction to ecosystem structure and function, abiotic factors in ecosystems, energy flow and mineral cycling, population and evolutionary ecology, community ecology, a comprehensive survey of aquatic and terrestrial ecosystems, and human ecology. Laboratories and field trips are designed to introduce students to techniques used in basic ecological research.
Prerequisites: Minimum grade of C required for either BIO-121 or BIO-180 or LHT-110
Additional Fees: Course fee applies.

BIO-215. Microbiology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A comprehensive study of microorganisms, including viruses, bacteria, fungi, protozoa and algae. Topics covered include microbial anatomy, physiology, genetics, ecology and methods of control. Research methods and modern immunological concepts also are discussed. Laboratory exercises in basic microbiological techniques and the study of living microorganisms are designed to supplement the theory presented.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025 and BIO-101 or BIO-121 or BIO-123 or BIO-180 (minimum grade of C) and CHM-117 or CHM-125 and CHM-126 (minimum grade of C)
Additional Fees: Course fee applies.

BIO-223. Cell and Molecular Biology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
A comprehensive study of biological molecules and their functions. Emphasis will be placed on the mechanism and regulation of macromolecule synthesis. Laboratory exercises will focus on instrumentation and techniques used in biological research.
Prerequisites: BIO-121 or BIO-123 and CHM-125 and CHM-126
Minimum grade of C required for all prerequisites
Additional Fees: Course fee applies.

BIO-226. Cooperative Work Experience - Biology. 3 Credits.
COOP 3 hrs
This course provides selected students enrolled in the Biotechnology or Biology Major with job-oriented laboratory training and practical work experience in a paid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chairperson by the end of their second semester. Offered Fall, Spring and Summer, day.
Prerequisites: Fourth semester status as a Biotechnology or Biology major and permission of department chair.

BIO-228. Internship Work Experience - Biology. 3 Credits.
COOP 3 hrs
This course provides selected students enrolled in the Biotechnology or Biology Major with job-oriented laboratory training and practical work experience in an unpaid work environment prior to career employment. Students work a minimum of 135 hours. Students desiring to participate in this experience should make their interest known to the department chairperson by the end of their second semester. Offered Fall, Spring and Summer, day.
Prerequisites: Fourth semester status as a Biotechnology or Biology major and permission of department chair.
BIO-233. Independent Study in Biology. 3 Credits.
LECT 3 hrs
An opportunity for selected students to participate in biological research under close supervision of the biology faculty. Interested students should make their interest known early in the prior semester to the department chair, who will familiarize the students with criteria for selection and the steps to be taken to gain entrance to this course. This course does not fulfill any of the science requirements in biology but is offered as a free elective.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

BIO-274. Pathophysiology. 3 Credits.
LECT 3 hrs
Pathophysiology is a course which studies the physiological alterations associated with common disease processes which affect human beings across the lifespan. Common diseases of the major organ systems are covered as well as such general issues as infection, neoplasm, inflammation, fluid and electrolyte imbalance, trauma, and shock.
Prerequisites: BIO-101 and BIO-102 and CHM-117 Minimum grade of C required for all prerequisites.

BIO-295. Special Topics in Biology. 4 Credits.
LECT 4 hrs
An examination of selected topics or issues in biology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Biology and permission of department chair
Additional Fees: Course fee applies.

Business (BUS)

Courses

BUS-112. Introduction to Business. 3 Credits.
LECT 3 hrs
This course introduces both business and non-business majors to various fields of business study. Topics include foundations of business and economic systems, management and leadership styles, entrepreneurship, motivational theory and techniques, personnel and production management, accounting, information systems, business law, union/management relations and global issues. The course prepares students for higher-level business study and explores a variety of major options and career paths.

BUS-119. Business Information Systems and Applications. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course provides an introduction to the various technical tools available to help solve problems in the field of business technology. This is a hands-on laboratory course designed to provide the student with experience calculating Business transactions, Windows Operating System, Microsoft Office packages, such as Word, Excel, PowerPoint, Internet and marketing research tools. Special emphasis is placed on the accounting and other financial information reports using Microsoft Office’s Word, Excel and PowerPoint programs.
Additional Fees: Course fee applies.

BUS-135. Introduction to International Business. 3 Credits.
LECT 3 hrs
This course introduces students to the field of international business and trade. A broad range of topics prepares students for the rapidly evolving global business world and for advanced study in international business. Topics include an overview of international business, the global economy, international business environments, issues related to operating and managing an international business and concepts and theories related to the global marketplace.

BUS-136. Personal Finance. 3 Credits.
LECT 3 hrs
This course provides a practical introduction to personal finance and money management by focusing on realistic ways to effectively manage and protect personal assets, minimize taxes and provide for a secure retirement. Students may design a personal budget and learn to make appropriate decisions with regard to savings, investments, insurance, credit protection and estate planning. Students evaluate the cost of borrowed money, real estate investments, effective use of credit, tax implications and the effects of the economy on personal financial decisions. The use of financial periodicals may be required.
Prerequisites: MAT-016 or equivalent and ENG-025 or equivalent
Additional Fees: Course fee applies.

BUS-201. Human Relations in Business. 3 Credits.
LECT 3 hrs
This course provides a broad perspective dealing with human relations from the viewpoint of the manager. It treats the human aspect as it is encountered in the business organization. The behavior of individuals in interpersonal, intergroup and interorganizational situations as they relate to work is also studied.

BUS-205. Landscape Specifications and Estimating. 3 Credits.
LECT 3 hrs
Required for students in Landscape Management and Design Agribusiness and Turf and Turfgrass Management and recommended for others with an interest in landscape maintenance or landscape design and installation. The course focuses on developing systems for the identification of costs associated with the preparation of landscape estimates and bids. Topics include pricing, budgeting, understanding and writing specifications; contracts and related issues; insurance and accounting applications for landscape businesses; estimating with an emphasis on cost-finding processes; and client and employee relations.

BUS-211. Money and Banking. 3 Credits.
LECT 3 hrs
This course analyzes the organization and operation of our financial system. Included in the study are the money and capital markets, commercial banking and other financial institutions such as commercial finance companies. The relationship between financial and economic activity, including monetary and fiscal policy, is shown.
Prerequisites: MAT-016 or equivalent and ENG-025 or equivalent
Additional Fees: Course fee applies.
BUS-212. Principles of Finance. 3 Credits.
LECT 3 hrs
This course is a study of principles and practices followed in the financial organization and operation of a business organization, including financing new and growing businesses, sources of capital, banking and credit accommodations, and the handling of other financial matters.
Prerequisites: ACC-111 and ENG-025 or equivalent
Additional Fees: Course fee applies.

BUS-213. Business Law I. 3 Credits.
LECT 3 hrs
This course is a basic study of the fundamentals of legal liability, the growth of our legal system, and the legal rights, duties and obligations of the individual. Specifically covered are law and society, contracts, agency and employment. Where applicable, the Uniform Commercial Code is used as the basis for statutory interpretation.

BUS-215. Principles of Management. 3 Credits.
LECT 3 hrs
This course is a study of the basic managerial functions of planning, organizing, staffing, directing and controlling. Emphasis is placed on the theory of management, organization and executive leadership. Case studies of actual business situations present problems requiring executive decisions for solution.
Prerequisites: ENG-111, ENG-112 and BUS-119.

BUS-218. Investment Principles. 3 Credits.
LECT 3 hrs
This course introduces students to basic types of investment alternatives focusing on the mechanics of investing including online investing, researching and interpreting financial information, understanding risk/return tradeoffs, and reviewing investment strategies associated with various stock orders. The course offers a thorough review of the primary and secondary securities markets, securities regulations and ethics, and a general understanding of the impact of the economy and the Federal Reserve on investment decisions. The course objective is to develop students into independently sophisticated investors through a practical hands-on approach. The use of financial periodicals may be required.
Prerequisites: ENG-025 or non-course equivalent and MAT-016 or non-course equivalent
Additional Fees: Course fee applies.

BUS-219. Small Business Operations. 3 Credits.
LECT 3 hrs
This course focuses on all aspects of operating an existing business or starting a new venture, culminating in the preparation and simulated execution of a business plan. Study includes evaluations of both new and existing businesses, financing approaches, forms of ownership, traditional and Internet marketing and advertising, directing, staffing, purchasing, risk mitigation, cash management, tax obligations, bootstrapping techniques, and financial and breakeven evaluation. This is a hands-on pragmatic approach to small business management.

BUS-220. Small Business Planning and Finance. 3 Credits.
LECT 3 hrs
This course focuses on the planning and financing of small business ventures. Included is the development of a business plan. This includes market analysis and a resulting marketing plan, a comprehensive operations plan and the development of financial projections. Attention also is placed on attracting seed and growth capital from such sources as individuals, family, venture capital, investment banking and commercial banks. Bootstrapping or creative ways for obtaining greater impact of available funds is introduced. The end of the business cycle, business valuation and exit strategies are fully explored.
Prerequisites: ENG-025 or equivalent and MAT-016 or equivalent.

BUS-222. International Finance. 3 Credits.
LECT 3 hrs
International Finance provides a basic understanding of the relationship between the international business environment and the international financial markets. Topics to be covered include: international flow of funds, international capital markets, international monetary system, exchange rate behavior, and financial management of the multinational firm.
Prerequisites: ENG-025 or equivalent
Additional Fees: Course fee applies.

BUS-224. Cooperative Work Experience-Business. 3 Credits.
COOP 3 hrs
This course provides students enrolled in the Business curriculum with job-oriented training and practical work experience in a work environment prior to permanent employment. The course may be taken in fulfillment of a business elective in the Business Career curriculum. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their third semester.
Prerequisites: Permission of department chair
Corequisites: BUS-225.

BUS-225. Cooperative Work Experience Business-Related Class. 1 Credit.
LECT 1 hr
A supplement to the cooperative work experience program, this course provides a variety of experiences to further develop students’ career development and occupational adjustment. It also develops positive points of view toward human relationships and the responsibilities of both the employee and the employer.
Prerequisites: Permission of department chair
Corequisites: BUS-224.

BUS-226. Internship Work Experience-Business. 3 Credits.
COOP 3 hrs
This course provides students enrolled in the Business curriculum with job oriented training and practical work experience in a non-paid work environment prior to permanent employment. The course may be taken in fulfillment of a business elective. Students desiring to participate in this experience should make their intentions known to the department chair during the prior semester.
Prerequisites: Permission of department chair
Corequisites: BUS-225.

BUS-240. Small Business Planning and Finance. 3 Credits.
LECT 3 hrs
This course focuses on the planning and financing of small business ventures. Included is the development of a business plan. This includes market analysis and a resulting marketing plan, a comprehensive operations plan and the development of financial projections. Attention also is placed on attracting seed and growth capital from such sources as individuals, family, venture capital, investment banking and commercial banks. Bootstrapping or creative ways for obtaining greater impact of available funds is introduced. The end of the business cycle, business valuation and exit strategies are fully explored.
Prerequisites: ENG-025 or equivalent and MAT-016 or equivalent.
BUS-242. Customer Relations. 3 Credits.
LECT 3 hrs
This course focuses on customer relations as the measure of present and future business success. It begins with describing how business develops its business strategy on identified customer base. Recognizing the challenge of meeting customer expectations, the course defines customer satisfaction and introduces approaches to move from satisfying the customer to delighting the customer. A comprehensive customer relations process, customer relationship management, is introduced and its role discussed in the electronic business age.

BUS-291. Special Topics in Business. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in business areas of study. Topics may differ each time the course is offered. Students should consult with the Department of Business Administration chair for additional information.

BUS-292. Special Topics in Business. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in business areas of study. Topics may differ each time the course is offered. Students should consult with the Department of Business Administration chair for additional information. Prerequisites may be required dependent on topic of study.
Corequisites: BUS-224.

Chemistry (CHM)

Courses

CHM-100. Elements of Chemistry. 3 Credits.
LECT 3 hrs
A one-semester, introductory 3-credit, non-laboratory course designed for students with little or no background in chemistry. Emphasis is on preparing students for General Chemistry and Introductory Chemistry courses. The course encompasses chemical principles and calculations with a brief review of algebra.
Prerequisites: MAT-016 - minimum grade of C required.

CHM-105. Forensic Science. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Designed for the non-science major. An introduction to the applications of the physical and biological sciences in analyzing and evaluating physical evidence as related to crime and the law.
Additional Fees: Course fee applies.

CHM-117. Introductory Chemistry Lecture. 3 Credits.
RECI 1 hr, LECT 3 hrs
An introduction to the basic concepts of inorganic, organic and biochemistry. The emphasis is on the relationship of these concepts to physiological chemistry and living systems. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or MAT-016 (minimum grade of C) and ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-118.

CHM-118. Introductory Chemistry Laboratory. 1 Credit.
LAB 1 hr
Laboratory experiments illustrate principles studied in CHM-117. Required for Landscape and Horticultural Technology, liberal arts majors and some Allied Health programs.
Prerequisites: Placement basis or MAT-016 (minimum grade of C) and ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-117
Additional Fees: Course fee applies.

CHM-125. General Chemistry I - Lecture. 3 Credits.
RECI 1 hr, LECT 3 hrs
A study of the fundamental principles of chemistry and their application to chemical reactions. Topics include the structure of the atom, concepts of matter, mass relationships for pure substances and chemical reactions, solutions, electronic structure, the chemical bond, nuclear reactions and gases. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement College Level Math test or MAT-110 (minimum grade of C) and Placement basis or ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-126.

CHM-126. General Chemistry I - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments illustrate principles studied in CHM-125. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement College Level Math test or MAT-110 (minimum grade of C) and Placement basis or ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-125
Additional Fees: Course fee applies.

CHM-127. General Chemistry II - Lecture. 3 Credits.
RECI 1 hr, LECT 3 hrs
A continuation of General Chemistry I with emphasis on chemical equilibria and energy changes in chemical reactions. Also included are acids, bases, buffers, chemical thermodynamics, kinetics, qualitative analysis and electrochemistry. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-125 (minimum grade of C) and Placement basis or ENG-025 or ENG-022 or ENG-007
Corequisites: CHM-128.

CHM-128. General Chemistry II - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments illustrate principles studied in CHM-127. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-125 and CHM-126 (minimum grade of C required for both) and Placement basis or ENG-007 or ENG-022 or ENG-025
Corequisites: CHM-127
Additional Fees: Course fee applies.
CHM-136. Environmental Regulation. 3 Credits.
LECT 3 hrs
This course is an overview of critical environmental issues encountered by industry from a regulatory perspective. Various federal and New Jersey state regulations pertaining to air, water, hazardous waste and hazardous materials management are investigated. Students acquire knowledge on how industry complies with the diversity of regulatory requirements. Students are exposed to examples of instances where industrial non-compliance with applicable regulations has led to deleterious environmental and occupational health effects. Current issues and their significance to environmental and occupational health are discussed including, Clean Water Act, Clean Air Act, Environmental Cleanup and Responsibility Act (ECRA), Resource Conservation and Recovery Act (RCRA), Occupational Safety and Health Act (OSHA), Toxic Substance Control Act (TSCA), Asbestos, indoor air quality and underground storage tanks.
Prerequisites: BIO-123 and CHM-125.

CHM-204. Principles of Occupational Health and Safety. 3 Credits.
LECT 3 hrs
A survey course providing an overview of industrial hygiene and the roles that the industrial hygiene professional plays in recognizing, evaluating and controlling hazards in the workplace. This course provides an introduction to the qualitative and quantitative issues essential to comprehend occupational safety and health principles. Case studies and hands-on exercises are utilized to stress key concepts.

CHM-210. Essentials of Organic Chemistry. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Summer Semester only. This course is the study of the basic principles of structure, reactivity and nomenclature in organic chemistry. The laboratory develops basic work skills in the types of experiments performed in a typical organic chemistry laboratory with emphasis on the safe handling of laboratory chemicals and the proper presentation of experimental results.
Prerequisites: CHM-117 and CHM-118 or CHM-127 and CHM-128 (minimum grade of C for all prerequisites)
Additional Fees: Course fee applies.

CHM-212. Biochemistry. 4 Credits.
LECT 3 hrs, LAB 3 hrs
An introduction to physiological chemistry. Lectures cover amino acids, proteins, lipids, nucleic acids, carbohydrates, molecular genetics, energetics and metabolic pathways. Lab reinforces concepts covered in lecture. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-117 (minimum grade of C) or CHM-125 (minimum grade of C)
Additional Fees: Course fee applies.

CHM-219. Quantitative Chemical Analysis. 5 Credits.
LECT 3 hrs, LAB 6 hrs
Fall Semester only. Principles of modern quantitative methods in chemistry, including the study of chemical equilibria, solubility, acidity and complex formation. The laboratory work involves practical applications of inorganic and organic analysis including volumetric, gravimetric, chromatographic and instrumental techniques. Emphasis is placed on the statistical treatment of data and report writing. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 (minimum grade of C) or equivalent
Additional Fees: Course fee applies.

CHM-220. Instrumental Methods of Analysis. 5 Credits.
LECT 3 hrs, LAB 6 hrs
Spring Semester only. This survey course covers theory and applications of modern instrumentation utilized to solve problems in chemical analysis. Laboratory work involves hands-on experience utilizing instruments such as gas(GC), liquid(HPLC) and ion chromatography; spectrophotometric methods including visible, ultraviolet, infrared(FTIR) and atomic absorption; ICP and other methods, including ion selective electrode methods; and electrophoretic methods including capillary electrophoresis(HPCE). Emphasis is placed on the comparison of methods, the collection and interpretation of laboratory data, technical report writing and record keeping. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 or equivalent (minimum grade of C)
Additional Fees: Course fee applies.

CHM-228. Cooperative Work Experience - Chemistry. 3 Credits.
COOP 3 hrs
This course provides selected students enrolled in the Chemical Technology or Chemistry programs with job-oriented laboratory training and practical work experience in a paid work environment prior to career employment. Students work a minimum of 153 hours. Students desiring to participate in this experience should make their interest known to the department chair by the end of their second semester. Offered Fall, Spring and Summer, day.
Prerequisites: Fourth semester status as a Chemical Technology or Chemistry major and permission of department chair.

CHM-229. Internship Work Experience - Chemistry. 3 Credits.
COOP 3 hrs
This course provides selected students enrolled in the Chemical Technology or Chemistry Major with job-oriented laboratory training and practical work experience in an unpaid work environment prior to career employment. Students work a minimum of 153 hours. Students desiring to participate in this experience should make their interest known to the department chairperson by the end of their second semester. Offered Fall, Spring and Summer, day.
Prerequisites: Fourth semester status as a Chemical Technology or Chemistry major and permission of department chair.
CHM-231. Organic Chemistry I - Lecture. 3 Credits.
LECT 3 hrs
This course is an introduction to the chemistry of carbon compounds. Topics include a study of the fundamental concepts of structure and stereochemistry, physical properties of organic compounds and a functional approach to the interpretation of organic reactions. This course is designed for majors in Biology, Chemistry, Pharmacy, and for students preparing for medical, dental and veterinary schools. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 (minimum grade of C) and CHM-128 (minimum grade of C)
Corequisites: CHM-232.
CHM-232. Organic Chemistry I - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments stress techniques involved in the synthesis and purification of typical organic compounds using both macroscale and microscale techniques. All remedial courses listed must be completed prior to taking this course.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007 and CHM-127 (minimum grade of C) and CHM-128 (minimum grade of C)
Corequisites: CHM-231
Additional Fees: Course fee applies.

CHM-233. Organic Chemistry II - Lecture. 3 Credits.
LECT 3 hrs
A continuation of the study of organic compounds with further study of functional groups, reaction mechanisms including nucleophilic substitution and elimination reactions, and infrared and nuclear magnetic resonance spectroscopy. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-231 (minimum grade of C) and CHM-232 (minimum grade of C)
Corequisites: CHM-234.

CHM-234. Organic Chemistry II - Laboratory. 1 Credit.
LAB 3 hrs
Laboratory experiments involve the multi-step synthesis of organic compounds, which illustrate the principles of CHM-233, using macroscale and microscale techniques. All remedial courses listed must be completed prior to taking this course.
Prerequisites: CHM-231 (minimum grade of C) and CHM-232 (minimum grade of C)
Corequisites: CHM-233
Additional Fees: Course fee applies.

CHM-235. Independent Study in Chemistry. 3 Credits.
LECT 3 hrs
This course is an opportunity for selected students to participate in independent research under close supervision of a Chemistry faculty member. Interested students should make their interest known early in the prior semester to the department chair who will detail the criteria for selection.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CHM-295. Special Topics in Chemistry. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in chemistry. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Chemistry and permission of department chair
Additional Fees: Course fee applies.

CHM-296. Special Topics in Chemistry. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in chemistry. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Chemistry and permission of department chair.

**Chinese (CHI)**

Courses

CHI-111. Elementary Chinese I. 3 Credits.
LECT 3 hrs
This course is intended for students with no prior knowledge of, or with limited background in the language. Emphasis is on the fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar is incorporated. Students learn Mandarin Chinese using "pinyin" romanization and are introduced to simplified and traditional characters. Not for native speakers and not intended for students with two or more years of high school Chinese.

CHI-112. Elementary Chinese II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Chinese expand their abilities in speaking, reading and writing Chinese. Students develop a better usage of the Chinese language, characters and patterns.
Prerequisites: CHI-111 or permission of department chair.

CHI-211. Intermediate Chinese I. 3 Credits.
LECT 3 hrs
This course is a continuation of Elementary Chinese II. It expands the Chinese vocabulary, grammar, reading and writing skills of those students wishing to attain intermediate knowledge of the Chinese language. To that end, students are introduced to simple versions of Chinese literature.
Prerequisites: CHI-112 or permission of department chair.

CHI-212. Intermediate Chinese II. 3 Credits.
LECT 3 hrs
This course is a continuation of Intermediate Chinese I. It expands the Chinese vocabulary, grammar, reading and writing skills of those students wishing to attain intermediate knowledge of the Chinese language. Students are introduced to basic Chinese literature and philosophy along with advanced grammatical patterns.
Prerequisites: CHI-211 or permission of department chair.
CHI-291. Special Topics in Chinese I. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in Chinese language or culture. Topics may differ each time the course is offered. Students should contact the department chair for further information.
Prerequisites: An advanced course in Chinese or permission of department chair.

CHI-292. Special Topics in Chinese II. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in Chinese language or culture. Topics may differ each time the course is offered. Students should contact the department chair for further information.
Prerequisites: An advanced course in Chinese or permission of department chair.

College Student Success (CSS)

Courses
CSS-011. College Student Success. 0 Credits.
LECT 2 hrs
College Student Success CSS-011 is a college-wide course that is required for students that test into ENG-025 Writing Skills and whose major programs are in the Division of Liberal Arts. This course is designed to assist first year students in their adjustment and success with the college experience. Topics include academic expectations and developing skills to meet them, time management, introduction to campus resources, library use, career choices, computer resources, academic advisement, and selected seminar topics. This course will also introduce the development of leadership skills as an integral part of the learning process. This course is not designed for transfer purposes to four-year colleges. The course is designed to enhance students' academic skills to help increase the odds of succeeding in achieving their educational goals.

Communication (COM)

Courses
COM-101. Introduction to Communication. 3 Credits.
LECT 3 hrs
Survey of the field of communication within a variety of contexts including: Interpersonal, Group, Organizational, Mass Media, Intercultural and International Communication.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

COM-102. Advertising and Society. 3 Credits.
LECT 3 hrs
This is a survey course that follows the advertising industry from the early days of the Industrial Revolution through modern social media campaigns. There will be a strong emphasis on the cultural and societal effects of advertising messages on mass markets. There will also be a focus on advertising as a form of social communication, which has embedded impacts on socio-economic, political, and global communication. Students will acquire skills in media literacy and ethical reasoning with respect to advertising campaigns. By the end of the course students will be able to identify the current challenges to consumers and the advertising industry.
Prerequisites: Placement Basis or ENG-007, ENG-022 or ENG-025.

COM-103. Introduction to Public Relations. 3 Credits.
LECT 3 hrs
This course is a survey of the principles and practices in public relations. Students gain an understanding of the history, development and globalization of PR, the impact of PR criticism, the techniques and tactics of PR practitioners. They learn the concepts of "publics" and professionalism. Special emphasis is placed on the comprehension of the laws and ethics mandated for the PR industry and the goals and objectives necessary to the future credibility of PR.
Prerequisites: Placement basis or ENG-007, ENG-022 or ENG-025.

COM-104. Interpersonal Communication. 3 Credits.
LECT 3 hrs
Students in this course discover how to communicate effectively in everyday relationships through the study of both theoretical frameworks and practical application. Topics include self-perception, cultural influences, verbal and nonverbal messages, conflict management, as well as an in-depth look at communication within the family unit, friendships, romantic partners and the workplace.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

COM-105. Media Literacy. 3 Credits.
LECT 3 hrs
Media Literacy prepares students to better understand the 21st century media environment. Topics covered include media form, media content, media effects and influence, and media industries. There will be a particular focus on developing stronger critical and analytical skills to better use media for personal and professional benefit. We will investigate media through several perspectives with a concentration on how media works and how to better navigate and manage the information we receive.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025.

COM-109. Speech Fundamentals. 3 Credits.
LECT 3 hrs
This course introduces the fundamentals of organizing, outlining, and presenting narrative, informative and persuasive speeches. Specific attention is given to each student's verbal and nonverbal delivery in the communication of ideas, as well as to the development of creative abilities, critical insights and listening skills.
Prerequisites: Placement Basis or ENG-007 or ENG-022 or ENG-025.
COM-111. Introduction to Journalism. 3 Credits.
LECT 3 hrs
Instruction and practice in reporting and writing news stories across multimedia platforms. Topics include new media, writing, reporting, interviewing, researching, news judgment, Associated Press style, media ethics and media law. Students utilize computers in the classroom to research topics and complete assignments on deadline. The culmination of the course is an e-portfolio that utilizes a basic content management system and combines written articles with original photography. A one-time commitment of three hours of newspaper production is required.
Prerequisites: Placement Basis or ENG-007 or ENG-022 or ENG-025.

COM-112. Advanced Journalism. 3 Credits.
LECT 3 hrs
Instruction and practice in news reporting, computer-assisted reporting and writing techniques. Specialized topics include profile writing, government meetings, statistics/budgets, police, weather, tragedies, global issues, news conferences, speeches, media ethics and media law. Students utilize computers in the classroom to research topics and complete assignments on deadline. New media is incorporated throughout the semester. A one-time commitment of 6 hours of newspaper production on campus is required.
Prerequisites: COM-111 or permission of department chair.

COM-115. Introduction to Mass Media. 3 Credits.
LECT 3 hrs
Introduction to Mass Media is a survey course focusing on the history and consequences of mass media for the individual, society and culture. Specific areas of emphasis include the historical development of media forms, theories concerning the effects of media, and the evolving future of media. Special attention will also be paid to current events in the media and their social consequences.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025.

COM-120. Broadcast Journalism. 3 Credits.
LECT 3 hrs
Instruction and practice in broadcast reporting, writing and editing. Students utilize traditional broadcast skills within a multimedia environment. Topics include broadcast writing techniques and style, newscast organization, photojournalism, social media, new media, broadcast stories for online journalism, media ethics and media law. Students write broadcast scripts, maintain blogs and produce timed newscasts.
Prerequisites: COM-111
Additional Fees: Course fee applies.

COM-209. Editing and Publication Design. 3 Credits.
LECT 3 hrs
Instruction and practice in copy editing, layout, design, headline writing, photo editing, news evaluation, media ethics and media law. Students utilize computers, Adobe Photoshop and Adobe InDesign to complete assignments, and they help produce the student newspaper.
Prerequisites: COM-111 or permission of department chair
Additional Fees: Course fee applies.

COM-228. Cooperative Work Experience Communication. 3 Credits.
COOP 3 hrs
This course provides students in the Communications curriculum with job-oriented training and practical experience in a real work environment. This course is designed to supplement the student's academic coursework and to facilitate the career development and exploration process.
Prerequisites: Permission of department chair
Corequisites: COM-229.

COM-229. Coop. Work Experience - Related Class. 1 Credit.
LECT 1 hr
Prerequisites: Permission of Coordinator
Corequisites: COM-228.

COM-230. Communications Internship. 3 Credits.
COOP 3 hrs
The Communication Internship offers practical experience working part-time for an approved communication agency, organization or business under the supervision of a Communication faculty. Alternatively, it can be used to complete a significant research project under the guidance of a Communication faculty member. Students must have second year status, GPA of 3.5 or higher.
Prerequisites: Permission of department chair.

COM-234. Introduction to Film. 3 Credits.
LECT 3 hrs
Through the study of representative major works of world cinema, students are introduced to the history and development of film as a creative medium or artistic expression and mass communication. Topics include production practices, cinema as an industry, the relationship between history and cinema, the psychology of cinema, and socio-cultural factors related to cinema. Students are encouraged to approach film analytically and critically, to consciously examine the language and aesthetic forces of cinema, and to expand cinematic interest into realms beyond the Hollywood mainstream production.
Prerequisites: Placement basis or ENG-007 or ENG-025 or ENG-022.

COM-291. Special Topics in Communication. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Communication. Topics may differ each time the course is offered. Students should consult the assistant chair for further information.
Prerequisites: An introductory course in Communication.

COM-292. Special Topics in Communication. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Communication. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Communication.

Computer Information Systems
(CMP)
Courses

**CMP-101. Computer Information Literacy. 1 Credit.**
LECT 3 hrs,
LAB 2 hrs
This general education course provides students with an introduction to basic computer concepts that include learning the fundamentals of Windows, accessing the Internet and using Microsoft Word. Not for Computer Information Systems majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-101, CMP-110, CMP-126, CMP-203 or BUS-119.
**Additional Fees:** Course fee applies.

**CMP-108. Game Design Concepts. 3 Credits.**
LECT 3 hrs
This course provides the student with an introduction to fundamental game design concepts. The range of topics includes game worlds and settings, character creation, storytelling, game audio, game art and animation, gameplay and user interface design. In addition, the history of the game industry, social impact and the future of gaming are discussed. Students analyze various games and genres and create their own game design document.
**Additional Fees:** Course fee applies.

**CMP-120. Foundations of Information Security. 3 Credits.**
LECT 3 hrs
This course provides a principled introduction to the field of information security. History, characteristics and models of information and computer security are explored. Topics such as risk management, logical and physical security, continuity, cryptography, and architecture are discussed. The National Centers of Academic Excellence in Cyber Defense Education Knowledge Units and the CISSP CBK domains are incorporated into the course content affording the student reinforcement and mastery of information security terminology and concepts.
**Additional Fees:** Course fee applies.

**CMP-123. Systems Analysis and Design. 3 Credits.**
LECT 3 hrs
Techniques of object-oriented and structured systems analysis and design are examined in the context of the software development life cycle. Topics include project management, Unified Modeling Language (UML), data flow diagrams, system flow charts, application and user interface design. Class projects provide students with practice in using CASE tools in the analysis and design of application systems. Students participate in a semester-long team project to design an application.
**Prerequisites:** CMP-128 and one of the following: CMP-129, CMP-150, CMP-237, CMP-239
**Additional Fees:** Course fee applies.

**CMP-124. Network Security. 3 Credits.**
LECT 3 hrs
This course provides an in-depth study of network attack techniques and methods to defend against them. Areas of study include communication security, infrastructure security, cryptography, and operational and organizational security as it relates to network hardware, software and data. Topics include authentication, attacks, virtual private networks, email protection, web security, wireless, firewalls, intrusion detection, cryptography, disaster recovery and computer forensics regarding networked systems. Using a hands-on approach, powerful tools to diagnose and correct security breaches are investigated and manipulated. This course is mapped to the National Centers of Academic Excellence in Cyber Defense Education Knowledge Units and vendor-neutral certification exam.
**Additional Fees:** Course fee applies.

**CMP-125. Information Security Management. 3 Credits.**
LECT 3 hrs
This course entails identifying an organization's information assets and the development, documentation and implementation of policies, standards, procedures and guidelines that ensure confidentiality, integrity and availability of those assets. This course, which is mapped to the National Centers of Academic Excellence in Cyber Defense Education Knowledge Units, prepares students to understand the planning, organization and roles of individuals involved in security, to develop security policies, and to utilize management tools to identify threats, classify assets and rate vulnerabilities. A detailed, real-world security plan is developed using customized strategies.
**Additional Fees:** Course fee applies.

**CMP-126. Computer Technology and Applications. 4 Credits.**
LECT 3 hrs, LAB 2 hrs
This general education course teaches: (1) basic computer-use concepts such as hardware and peripherals, file organization and management, and operating system use; (2) Internet use, browsers and search engines; (3) software applications including word processing, spreadsheet, electronic slideshow presentations, database use and calendaring; (4) netiquette, ethics and copyright policies; (5) downloading and installing software and plug-ins; (6) communications technologies including email, blogs and Web technologies; (7) personal computer and information security; and (8) career exploration, job search strategies and portfolio development. Students are required to complete a series of laboratory assignments that illustrate skills and use technologies in the areas listed including a cross-applications/technologies project. Students will not receive credit towards graduation for more than one of the following courses: CMP-101, CMP-110, CMP-126, CMP-203 or BUS-119.
**Prerequisites:** Placement basis or ENG-025 or ENG-022 or ENG-007
**Additional Fees:** Course fee applies.
CMP-128. Computer Science I. 3 Credits.
LECT 2 hrs, LAB 2 hrs
In this introductory course, students obtain fundamental computer science knowledge and develop programming skills using an object-oriented approach, incorporating security awareness, human-computer interactions and social responsibility. This course provides students with a basic foundation in computing history, computing careers, computer organization, operating system responsibilities, software development process, algorithm design and analysis, programming paradigms, and human interaction design.  
Prerequisites: MAT-007 or equivalent  
Additional Fees: Course fee applies.

CMP-129. Computer Science II. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course is the second in a three-course sequence that provides students with a foundation in Computer Science. Students develop intermediate-level programming skills using an object-oriented approach with an emphasis on software development, fundamental algorithms and data structures, software assurance, and ethical conduct.  
Prerequisites: CMP-128 or equivalent  
Additional Fees: Course fee applies.

CMP-130. Introduction to Information Technology. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This is the introductory course in the field of study of Information Technology. This course introduces the student to the software and hardware found in today’s computing environment and the basic skills and tools required to install, support and upgrade common information technology used by businesses, organizations and academic institutions. This course helps the student prepare for the CompTIA A+ certification examination. In addition, the basics of network architecture, database management, information security and web infrastructure are covered. At completion the student will be prepared for further study in the curriculum of Information Technology and equipped with the fundamental knowledge required of an IT Professional. The students use popular desktop applications to organize and perform IT laboratory activities.  
Additional Fees: Course fee applies.

CMP-135. Computer Concepts with Applications. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This general education course is designed to provide familiarity with current software for word processing, spreadsheet, presentation and database applications. An introduction to web browsers, computer and information security, social impact of computing, concepts in computer hardware, and application and system software is also included. Students are required to complete a series of laboratory assignments that illustrate skills in using the above software applications. Students must allocate time to complete assignments using the same software (available on campus). Not for Computer Information Systems majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-135, CMP-126 or BUS-119.  
Additional Fees: Course fee applies.

CMP-150. Game Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course covers fundamental game programming techniques using an industry-standard scripting language. Students learn how to use a popular game engine to build game programs. Topics include sprites, animation, collisions, timers, game state variables, player input, audio, user interface design and storyboarding. Laboratory work includes several game element programming exercises, leading up to a final game project.  
Prerequisites: CMP-128 or equivalent  
Additional Fees: Course fee applies.

CMP-160. Digital Forensics I. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces the student to the fundamental concepts of computer forensics. By conducting a detailed examination of data media for structure, file system type, volumes, lost and hidden areas, the student will develop the ability to collect and analyze computer data for digital evidence. An understanding of specific resources and an exploration of software tools available for data recovery and forensic analysis will be conducted in a laboratory setting. Upon completion of this course the student will demonstrate various data recovery techniques as the basis for forensic evaluation.  
Additional Fees: Course fee applies.

CMP-170. Mobile App Design. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces students to the design and development of mobile applications. Students will learn how to install and use a leading mobile app software development kit, design the user interfaces using different design patterns, create and edit app resources, and design and develop native source code. Students will strengthen their programming skills in user input, variables, operations, decision control structures, methods, lists and arrays. Audio, images, animation and other application controls will be incorporated into apps. Other topics include testing, deployment and publishing apps.  
Prerequisites: CMP-128  
Additional Fees: Course fee applies.

CMP-200. Computer Operating Systems and Utilities. 3 Credits.
LECT 3 hrs, LAB 1 hr
This is an introductory course in personal computer operating systems. Topics include the features and characteristics of operating system software; installation and configuration including customization, file organization and management; memory and storage management; control of peripheral devices; troubleshooting; networking wizards; and the use of utilities to monitor system performance, backup data and optimize disks. Laboratory assignments provide hands-on opportunities for students to apply the information related in lectures.  
Additional Fees: Course fee applies.
CMP-205. Database Programming (MS Access). 3 Credits.
LECT 3 hrs, LAB 1 hr
It is recommended that students take CMP-207 Electronic Spreadsheets before taking CMP-205. This course is designed to develop skill in the use of a leading database management system. Topics include the design and maintenance of relational databases and their objects (tables, queries, forms and reports). Also covered is the use of macros to implement procedures. The final portion of the course covers automation techniques by introducing the Visual Basic for Applications programming language and the use of this code to create a user-friendly interface.
Additional Fees: Course fee applies.

CMP-207. Electronic Spreadsheets (MS Excel). 3 Credits.
LECT 3 hrs, LAB 1 hr
It is recommended that students take CMP-207 Electronic Spreadsheets before taking CMP-205. This is a course in problem solving using a popular spreadsheet program. Emphasis is on construction of elementary to moderately complex worksheets; charting worksheet data, database definitions and reporting; and using VBA (Visual Basic for Applications) to construct simple macros.
Additional Fees: Course fee applies.

CMP-209. Introduction to UNIX. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course combines lecture with hands-on training in the UNIX Operating System. Upon successful completion of this course, students are proficient in using the UNIX Operating System commands and utilities. Topics include purpose and functions of an operating system, hierarchical file system, the shell, vi editor, file security, process management, sorting, networking theory and communications, redirection, piping, and an introduction to shell scripts.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-217. Cooperative Work Experience-Information Technologies. 3 Credits.
COOP 3 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent career employment. This course may be taken in fulfillment of the Computer Information Systems elective. Interested students should consult with the department chair. Computer Information Systems majors only
Prerequisites: Permission of department chair

CMP-218. Cooperative Work Experience Information Technologies - Related Class. 1 Credit.
LECT 1 hr
A supplement to the Department of Information Technologies Cooperative Work Experience, this course provides a variety of exercises that further develop the students' technical and communication skills, occupational adjustment, and career planning. This course is offered online. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Corequisites: CMP-217.

CMP-230. Computer Architecture and Assembly Language. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is an introduction to computer architecture and assembly language programming. Topics covered include digital logic and data representation, computer architecture and organization, interfacing and input/output strategies, memory architecture, functional organization, and multiprocessing. Students are exposed to basic assembly language programming techniques in laboratory assignments.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-233. Data Structures and Algorithms. 3 Credits.
LECT 3 hrs, LAB 1 hr
The course includes advanced computer science topics dealing with logical structures of data and the design and analysis of computer algorithms operating on these structures. The course concentrates on data structures such as linked lists, trees, queues, stacks, hash tables and graphs. Algorithms covered include stacks, queues, hash tables, trees, graphs, heaps, sorting and searching. Both iterative and recursive algorithms are explored with analysis of their efficiency. Problems and computer exercises implementing the above structures and techniques are assigned.
Prerequisites: CMP-129 or equivalent and MAT-123 or higher
Additional Fees: Course fee applies.

CMP-235. Advanced UNIX. 3 Credits.
LECT 3 hrs, LAB 1 hr
This is a continuation course in UNIX programming with emphasis on building upon the previously developed skills. Topics include an in-depth coverage of shell scripts, system administration, GUIs, differences and similarities between shells, higher-level programming languages in the UNIX environment, the Internet, sorting, and other advanced topics.
Prerequisites: CMP-209
Additional Fees: Course fee applies.

CMP-237. Visual Basic (VB.Net). 3 Credits.
LECT 3 hrs, LAB 1 hr
This is a fundamental course in object-oriented programming in a Windows environment. Topics include form design, managing controls, handling variables and constants, using decision and loop structures to construct efficient code, handling built-in functions, and simple debugging techniques for detecting errors. Basic fundamentals of classes are introduced.
Prerequisites: CMP-128 or equivalent
Additional Fees: Course fee applies.

CMP-239. The Internet and Web Page Design. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is an in-depth study of the Internet and its various services that allows students to appreciate the impact of the Internet in society. Students create World Wide Web home pages using strict Hypertext Markup Language, Cascading Style Sheets (CSS) and XHTML. Other current specifications also are discussed.
Additional Fees: Course fee applies.
CMP-241. Database Programming (Oracle). 3 Credits.
LECT 3 hrs, LAB 1 hr
This course uses the rules and syntax of an "industrial-strength" database programming language that can be used on all types of computers. Topics include relational database aspects, data input and validation, creation and maintenance of files, query, user control center, and application generator. Emphasis is on development of programs related to business database applications.
Prerequisites: CMP-113 or CMP-128 or equivalent or permission of department chair
Additional Fees: Course fee applies.

CMP-243. Ethical Hacking and Systems Defense. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course combines an ethical methodology with the hands-on application of security tools, techniques, and methodologies in performing computer system and network security vulnerability - risk analyses - to better help students secure and defend their systems. Topics to be covered include internal and external penetration tests, risk analysis methodology, and security audits. Students are introduced to common countermeasures that effectively reduce and/or mitigate attacks. This class is designed to help students prepare for professional careers in the information security field and the Certified Ethical Hacker (CEH) certification exam.
Prerequisites: CMP-124
Additional Fees: Course fee applies.

CMP-244. Web Design II. 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is a continuation of The Internet and Web Page Design with an emphasis on more advanced concepts and techniques. Topics include Cascading Style Sheets, forms, JavaScript and other current scripting languages. Students learn to work with hosting and web server technology. For their final project, students build a website using these techniques.
Prerequisites: CMP-239
Additional Fees: Course fee applies.

CMP-245. Web Design Tools. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Students learn the leading web design and development tools including the Adobe Creative Suite. Instruction and practice in the suite provides seamless integration and a unified user interface across all tools to streamline multimedia and web development. Through hands-on practice, activities and relevant project application, students develop competence in the use of industry-leading development tools.
Prerequisites: CMP-108 or CMP-128 or CMP-239 or MED-110 or GRD-111
Additional Fees: Course fee applies.

CMP-246. Operating Systems. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces students to operating systems and their uses and design concerns. Covered are the roles and responsibilities of operating systems including scheduling, concurrency and process synchronization, memory management, file organization and management, and control of peripheral devices. Security and protection topics are also addressed. Laboratory assignments provide interactive learning experiences which demonstrate operating system concepts using programming, operating system commands and scripting.
Prerequisites: CMP-129
Additional Fees: Course fee applies.

CMP-249. Advanced Web Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This advanced course in Web Development introduces the student to creating interactive and dynamic Web sites using current Web programming. Building on concepts and principles of computer programming and scripting languages, students will interact with Web server technologies and develop front end, advanced professional Web sites with fully functioning back end support.
Prerequisites: CMP-128 and CMP-244
Additional Fees: Course fee applies.

CMP-250. Game Production. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Working in teams, students combine their game design and programming skills to explore the practical challenges of managing the development of games. Industry-standard software and advanced programming are used in this capstone course to develop a functioning game of the highest professional quality. Emphasis is placed on the game design document, storyboarding, the game production process, user interface and game design, interactive storytelling, character development, 3D animation, special effects, audio, the collaborative process, and usability testing.
Prerequisites: CMP-150 or MED-220
Additional Fees: Course fee applies.

CMP-261. Digital Forensics II. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This advanced course in digital forensics will enable the student to understand advanced file system forensics, the theory of forensic procedures, review of identification, imaging, and authentication, review of FAT file system, NTFS and EXT3 file systems, partitioning, Windows logical analysis, email analysis, and web history analysis conducted in a laboratory setting. Upon completion of this course the student will apply investigative methodology as it applies to data artifacts, including where they are found in computer operating systems, and how they are deployed in digital forensics. The student will perform forensic media acquisition and verification.
Prerequisites: CMP-160
Additional Fees: Course fee applies.

CMP-271. Mobile App Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This second course in a series of mobile app development courses covers advanced design elements and programming constructs. Topics include accessing device resources including the camera, accelerometer, and GPS; utilizing local and networked database services; animation and gaming; accessing background services; file management; designing for multiple devices including wearables; and localization/internationalization and accessibility design. Students will create apps individually and as part of a team and their learning will culminate with the development of a final project that will be of industry-level quality.
Prerequisites: CMP-170
Additional Fees: Course fee applies.
CMP-290. Independent Study in Information Technology. 3 Credits.
LECT 3 hrs
Students, in consultation with the department chair, undertake an in-depth analysis of a selected topic, problem or issue related to information technology or pursue additional computer-related work experience. Students are responsible for developing a statement of goals and strategies, maintaining a weekly log, and preparing a written and oral summary report. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-291. Special Topics in Information Technology. 3 Credits.
LECT 3 hrs, LAB 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-292. Special Topics in Information Technology. 3 Credits.
LECT 3 hrs, LAB 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course(s) is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-293. Special Topics in Information Technology II. 1 Credit.
LECT 1 hr
An examination of selected topics or issues in information technologies. Topics may differ each time the course is offered. Students should consult the department chair for additional information. Computer Information Systems majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

CMP-296. Cooperative Work Experience-Information Technology (45-100 hours). 1 Credit.
COOP 1 hr
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 45-100 hours in duration. The course may be taken in fulfillment of a Computer Information System (CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

CMP-297. Cooperative Work Experience-Information Technology (90-200 hours). 2 Credits.
COOP 2 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 90 to 200 hours in duration. The course may be taken in fulfillment of a Computer Information System (CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

CMP-298. Cooperative Work Experience-Information Technology (135-300 hours). 3 Credits.
COOP 3 hrs
This course provides students in the Department of Information Technologies programs with job training and practical experience in a work environment prior to permanent employment amounting to between 135 to 300 hours in duration. The course may be taken in fulfillment of a Computer Information System (CIS) elective. Students desiring to participate in this experience should make their intention known to the department at the beginning of their second semester. Computing majors only.
Prerequisites: Permission of department chair.

Criminal Justice (CJS)

Courses

CJS-110. Introduction to Policing. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course will provide an overview of policing, both from an historical and contemporary perspective. This will include an introduction to police organizations and operations, police culture and ethics, as well as providing relevant information about police hiring practices. Community relations, minorities in policing, and the law are also incorporated. It includes an element of health education training, including such topics as stress, nutrition, and physical fitness. This portion will include physical fitness activities that are intended to prepare the student for the physical training portion of the police academy recruit training program.
Prerequisites: CJS-116 and CJS-121.

CJS-115. Introduction to Security. 3 Credits.
LECT 3 hrs
The historical, philosophical and legal basis of security. The role of security and the security individual in modern society; the concept of professionalism; and the survey of the administrative, personnel and physical aspects of the security field.

CJS-116. Introduction to Criminology. 3 Credits.
LECT 3 hrs
The study of crime, crime statistics, theories of crime causation, crime typologies, the impact of crime, limits of criminal law, and society's reactions to criminal behavior.

CJS-120. Jurisprudence: The Philosophy of Law. 3 Credits.
LECT 3 hrs
Explores the principles upon which law is based. The course seeks to define, categorize and relate those principles to each other and ascertain not what the law is, but rather why it is, and its capacities and limits.
CJS-121. Criminal Justice System. 3 Credits.
LECT 3 hrs
A study of the overall system of criminal justice from its early historical development to its evolution within the United States. Identification of various sub-enforcement, courts and corrections; their role expectations and systems and components - law interrelationships; and basic premises of crime, punishment and rehabilitation.

CJS-122. Classics of Criminology. 3 Credits.
LECT 3 hrs
The goal of this course is to gain an intellectual understanding of criminology by reviewing its progress in the past 20 years. It presents the causes of crime and the effect of crime on society, victims and criminals. A review of the literature is accomplished by investigating sociological, psychological and biological theories of crime.

CJS-126. Introduction to Emergency Management. 3 Credits.
LECT 3 hrs
This course examines the necessity for Emergency Management. It covers the evolution of Emergency Management in the United States. The course covers an introduction to Disaster Preparedness, Response and Recovery. Employment in the Emergency Management Field is also discussed. The course also examines types of disasters that may be experienced.

CJS-127. Introduction to Homeland Security. 3 Credits.
LECT 3 hrs
This course examines the necessity for Homeland Security. It covers the development of the Department of Homeland Security (DHS) including its organization and function. The course covers an introduction to Disaster Preparedness, Response and Recovery. This course also gives a brief overview of International and Domestic Terrorism, and examines the future of Homeland Security.

CJS-131. Introduction to Corrections. 3 Credits.
LECT 3 hrs
An introduction and overview of fundamental process, trends and practices of probation, institutional treatment, parole and contemporary community-based correctional programs. Included is a review of the history and philosophy of corrections, with emphasis on the constitutional rights of offenders.

CJS-213. Police and the Community. 3 Credits.
LECT 3 hrs
This course focuses on the importance of and strategies for positive police-community interactions and addresses the internal and external communities the police serve. The interdisciplinary approach of the course draws data and discussions from a wide range of disciplines and gives students a well-rounded perspective to help them better recognize the importance of, appreciate, and practice positive police-community relations.
Prerequisites: CJS-121.

CJS-214. Juvenile Delinquency. 3 Credits.
LECT 3 hrs
A review of the historical reasons for the establishment of juvenile courts in the United States, an examination of the juvenile justice process, and an introduction to the functions of the various components of the system. Sociological concepts and theory of the adolescent subculture are explored. Delinquency prevention aspects, as well as treatment methodologies, are included.

CJS-215. Investigative Function. 3 Credits.
LECT 3 hrs
Fundamentals of reconstructing a chronological sequence of events as to if, when and how a crime was committed. This includes searching, collecting, preserving, evaluating and cross-comparing physical and oral evidence within the framework of accepted procedural and constitutional laws. Procedures using proven scientific methods and analysis to meet the ideal standards of an investigation to resolve the issue, identify the offenders and professionally present the findings in court are included.

CJS-221. Criminal Law and Procedure. 3 Credits.
LECT 3 hrs
This course consists of a fundamental overview of the historical development and philosophy of law including definitions, classifications, and Constitutional origins. Additional topics are case law, methodology, and the concept of law as a social force; a study of the rules of evidence with emphasis upon the nature of evidence, burden of proof, confessions, admissions and witnesses, as well as a consideration of judicial procedures and the application of legal concepts to the justice process.
Prerequisites: CJS-121.

CJS-222. Concepts of Criminal Law. 3 Credits.
LECT 3 hrs
Historical development and philosophy of law including definitions, classifications and Constitutional origins. Also covered are case law, methodology and the concept of law as a social force.

CJS-223. Criminal Evidence and Procedure. 3 Credits.
LECT 3 hrs
A study of the rules of evidence with emphasis upon the nature of evidence, burden of proof, confessions, admissions and witnesses. Included are a consideration of judicial procedures and the application of legal concepts to the justice process.

CJS-224. Introduction to Police Operations. 3 Credits.
LECT 3 hrs
This course provides the student with an opportunity to observe and interact with the fundamentals of police operations. The student is provided with a basis for resolving everyday operational dilemmas from a proactive and reactive perspective. The course emphasizes the need for officers to think critically and to be creative as they interact with citizens in their communities.
Prerequisites: CJS-121.

CJS-225. Probation and Parole. 3 Credits.
LECT 3 hrs
This course examines the history of the fields of probation and parole, detailing how it moved from a focus on treatment/rehabilitation and the indeterminate sentence, toward a model based on control/law enforcement and the determinate sentence. The course will discuss how the historical changes affected the roles and responsibilities of probation and parole officers. Additional, students will explore the use of cognitive behavior therapy and motivation interviewing, "broken windows"/community-based supervision, and the importance of evidence-based practice.
Prerequisites: CJS-121.
DAN-117. Introduction to Ballet. 1 Credit.
LAB 2 hrs
This course is for the student with little or no movement experience and is designed to develop the foundational technique of classical ballet. Specific attention is given to proper execution of barre exercises, anatomical alignment and stretching, and strengthening of specific muscle groups. Formal body positions, spatial directions and classical ballet terminology are taught. Discussion of ballet companies, significant ballet personalities and injury prevention are also integrated into the coursework. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.
Additional Fees: Course fee applies.

DAN-125. Jazz I. 1 Credit.
LAB 2 hrs
This course is for the student at a beginning experience level and is designed to introduce the jazz dance genre. Specific attention is given to exploring rhythms, body isolations and stylistic movements specific to jazz dance. The techniques of ballet and modern dance are integrated into the coursework and anatomical alignment is stressed for the purpose of injury prevention. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.
Additional Fees: Course fee applies.

DAN-126. Jazz II. 1 Credit.
LAB 2 hrs
This course is for the student at an intermediate experience level and is a continuation of Jazz I. More advanced movements including greater intricacy and faster rhythms are taught. Students synthesize these movements into choreographed jazz dance sequences. Specific attention is given to the development of style and theatricality. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.
Additional Fees: Course fee applies.

DAN-134. Dance History. 3 Credits.
LECT 3 hrs
This course follows the historical development of dance from the movement of prehistoric humans to the theatrical dancing of the 21st century. Videos and examples of dance styles are used to exemplify the different periods of dance development. Written examinations, research papers, projects and attendance at dance concerts are required.
Additional Fees: Course fee applies.
DAN-135. Dance Theater Workshop. 1 Credit.
LAB 2 hrs
Dance Majors only. This course is designed for the student interested in dance production. The course involves publicity work, costuming, design, auditions, rehearsals and possible performance. Practical experience is gained by participating in concerts at County College of Morris, on stage and/or backstage. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

DAN-136. Dance Theatre Workshop II. 1 Credit.
LAB 2 hrs
This class develops the student as a performer, choreographer and/or backstage production artist. It is a continuation of Dance Theatre Workshop I and serves as a vehicle for active participation in the County College of Morris Dance Theatre. Students earn credit by contributing to the productions through publicity work, budgeting, ticketing, programming, backstage lighting work and/or performing and presenting original student works. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-135, Dance majors only
Additional Fees: Course fee applies.

DAN-137. Ballet I. 2 Credits.
LAB 4 hrs
This course is for the student at a beginning experience level and is designed to develop the technical physical skills necessary for classical ballet. Specific attention is given to proper execution of barre and center exercises, anatomical alignment, and stretching and strengthening of specific muscle groups. Pirouettes, allegro jumping, transitional steps and ports de bras are taught. Formal body positions, spatial directions and classical ballet terminology are taught. Discussion of ballet companies, significant ballet personalities and injury prevention are also integrated into the coursework. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

DAN-138. Ballet II. 2 Credits.
LAB 4 hrs
This course is for the student at a low intermediate level and is a continuation of Ballet I. It is designed to more fully develop the skills necessary for classical ballet. Continued emphasis is given to pirouettes, petit and grand allegro jumping as well as utilizing transitional steps in longer enchainment. Discussion of ballet companies, significant ballet personalities and injury prevention are also integrated into the coursework. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.
Prerequisites: DAN-137 or permission of department chair
Additional Fees: Course fee applies.

DAN-141. Modern Dance I. 2 Credits.
LAB 4 hrs
This course is for the student at a beginning experience level and is designed to develop the technical physical skills necessary for modern dance. The emphasis is on developing the body as an articulate instrument for expressing contemporary art through dance. Specific attention is given to the movements of the spine, arms and legs while maintaining anatomical alignment. Stationary floor exercises, movement phrases across the floor and movement improvisation are given. Discussion of modern dance companies, significant modern dance personalities and injury prevention are also integrated into the coursework. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.
Additional Fees: Course fee applies.

DAN-142. Modern Dance II. 2 Credits.
LAB 4 hrs
This course is for the student at a low intermediate experience level and is a continuation of Modern Dance I. Emphasis is on creative explorations of movement already learned. Specific attention is given to more advanced use of the spine and development of core muscle strength. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.
Prerequisites: DAN-141 or permission of department chair
Additional Fees: Course fee applies.

DAN-146. Dance for Musical Theatre. 1 Credit.
LAB 2 hrs
This course is ideal for any student interested in Broadway theater. This course gives students a movement base for auditions, performance and choreography covering musical styles ranging from the 1920s through the millennium. Students spend additional time in the studio to satisfy course time requirements. This course is open to non-dance majors as well as dance majors.
Additional Fees: Course fee applies.

DAN-211. Intermediate Ballet. 3 Credits.
LAB 6 hrs
This course is for the student at the intermediate experience level and designed to continue the development of technical physical skills necessary for classical ballet. It builds upon the technical proficiencies achieved in Ballet I and II. Specific attention is given to more advanced footwork in allegro jumping, sustained movement in adagio exercises and more advanced pirouettes. Emphasis is given to developing style, theatrical quality and proper anatomical alignment. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-138 or permission of department chair
Additional Fees: Course fee applies.
DAN-212. Advanced Ballet. 3 Credits.
LAB 6 hrs
This course is for the student at the advanced experience level and is a continuation of Intermediate Ballet. Specific attention is given to developing performance quality and audition techniques. This course is recommended for those students wishing to transfer into a four-year degree program in dance or those seeking a career in dance performance or instruction. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-211 or permission of department chair
Additional Fees: Course fee applies.

DAN-216. Intermediate Modern Dance. 3 Credits.
LAB 6 hrs
This course is for the student at the intermediate experience level and is designed to continue the development of the technical physical skills necessary for modern dance. It builds upon the technical proficiencies achieved in Modern I and II. Emphasis is on creative movement and choreography, intricate combinations and movement for the stage. New techniques of contemporary artists are discussed and explored, with emphasis on technical mastery. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-216 or permission of department chair
Additional Fees: Course fee applies.

DAN-217. Advanced Modern Dance. 3 Credits.
LAB 6 hrs
This course is for the student at the advanced experience level and is a continuation of Intermediate Modern Dance. Specific attention is given to developing the dancing body in intricate combinations of creative movement and choreography. Emphasis is on performance quality and audition techniques. This course is recommended for those students wishing to transfer into a four-year degree program in dance or those seeking a career in dance performance or instruction. Written and practical assignments are given. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-216 or permission of department chair
Additional Fees: Course fee applies.

DAN-220. Dance Theatre Workshop III. 1 Credit.
LAB 2 hrs
This class continues to develop the student as a performer, choreographer and/or backstage production artist. It is a continuation of Dance Theatre Workshop II and serves as a vehicle for active participation in the County College of Morris Dance Theatre. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-136 - Dance Majors Only
Additional Fees: Course fee applies.

DAN-222. Dance Theatre Workshop IV. 1 Credit.
LAB 2 hrs
This class is the culmination of the dance student's participation in the County College of Morris Dance Theatre productions and a continuation of work done in Dance Theatre Workshop III. All aspects of dance production are covered with special emphasis on stage lighting. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-220 - Dance majors only
Additional Fees: Course fee applies.

DAN-224. Choreography I. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course focuses on both individual and group creativity of new movement phrases using improvisation and other choreographic tools leading to actual compositions by the students. Movement and written assignments are given and student and professional choreography are viewed. Students spend additional time in the studio to satisfy course time requirements.
Prerequisites: DAN-141
Additional Fees: Course fee applies.

DAN-226. Choreography II. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course continues to explore elements of creative dance learned in Choreography I. Musical interpretation, narrative, prop studies, etc. are stressed. Completed movement phrases leading to actual choreographed dances are developed and considered for the stage. Costuming, lighting and preparation for actual presentation are emphasized. Movement and written assignments, with a final presentation, are required. Students spend additional time in a laboratory setting as part of the course.
Prerequisites: DAN-224
Additional Fees: Course fee applies.

DAN-230. Dance Internship. 1 Credit.
LAB 2 hrs
Dance Majors only. This course enables the student to complete on- or off-campus work/study in the dance field related to the student's goals as a dance major. Experience is gained in the dance field workforce as a dancer, choreographer, instructor or pre-approved dance program off-campus or dance administrative work on or off campus. The work experience is documented by the student and overseen by the professor. Recommendations are given to prospective employers by the faculty observer. This class should be taken in the student's final semester.
Prerequisites: Permission of department chair.

Design (DSN)

Courses

DSN-110. History of Design. 3 Credits.
LECT 3 hrs
The History of Design is a survey of major developments of design as well as the methodology and cultural influences which impact particular designs. The nature, function and evolution of design are studied through innovations in the architectural, interior, industrial, decorative and fashion design realms. The development of concepts, their relationship to historical and cultural movements, and their impact on surrounding art and design communities will be explored.

DSN-115. Basic Drafting. 3 Credits.
LECT 1 hr, LAB 4 hrs
Basic Drafting is a beginner's course that provides a solid foundation for all design and engineering courses. The study of materials and techniques in this course introduces students to the many forms of graphical communication and how best to convey their ideas in a graphical form. A variety of techniques are explored from pencil on vellum to pen on Mylar with further rendering techniques offered to focus on the individual's Design discipline.
DSN-120. Design Concepts I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Design Concepts I is a detailed exploration of scale and proportion through two and three-dimensional sketch problems varying in levels of complexity and duration. Design projects explore relationships between historical and cultural systems and human proportion. Verbal and graphic communication skills are emphasized as a method of articulating the development of visual concepts and solutions to design problems. Communication tools such as perspective are explored in detail. Projects, which include architectural, interior design, fashion and industrial design are reviewed through juried presentations.
Prerequisites: ART-122, ART-130
Additional Fees: Course fee applies.

DSN-125. Design Rendering. 3 Credits.
LECT 1 hr, LAB 4 hrs
Design Rendering is an advanced-level studio course that builds on the work completed in Drawing I, II and Drawing for Designers. The course concentrates on producing virtual product, fashion, architecture and interior images through the means of controlled light. Emphasis is placed on setting up proper perspective and generating a line drawing as an underlay. Color marker techniques are stressed as well as color pencil. In addition, pen and ink techniques and pastel are explored. At the end of the course, each student has a collection of portfolio quality renderings that demonstrate a high level of competence in a chosen field of design.
Prerequisites: DSN-120, ART-122, ART-130
Additional Fees: Course fee applies.

DSN-135. Fashion Construction Technology I. 3 Credits.
LECT 1 hr, LAB 4 hrs
This course takes a hands-on approach to the design, construction and presentation of fashion apparel, custom made clothing and costuming for stage and screen. Construction techniques, fabrics, tools and equipment are explored in detail in the classroom and the community. Draping as a means of design and basic pattern drafting are explored. Students develop the skills necessary to construct and present projects of their own design to a panel of peers and professionals.
Additional Fees: Course fee applies.

DSN-145. Introduction to Fashion and Visual Merchandising. 3 Credits.
LECT 1 hr, LAB 4 hrs
This class explores the interrelationship between the consumer and the various sectors of the fashion industry. Students learn the principles and techniques that fashion merchandisers use in making key decisions on buying and product sourcing, store planning and layout. Students review actual case studies and take on projects that engage the merchandising planning and decision-making process. This course is highly recommended for design and business students with interest in fashion merchandising and store plan layout.
Prerequisites: ART-122, ART-130, ENG-111
Corequisites: DSN-120
Additional Fees: Course fee applies.

DSN-146. Fashion Merchandising II. 3 Credits.
LECT 1 hr, LAB 4 hrs
This course explores the interrelationship between the consumer and the various sectors of the fashion industry. Students learn the principles and techniques that fashion merchandisers use in making key decisions on buying and product sourcing, store planning and layout. Fashion as a retail component is also discussed. Students review actual case studies and take on project development projects designed to enhance their comprehension of the subject. Course introduces business math as an applied principle to merchandising.
Prerequisites: DSN-145
Additional Fees: Course fee applies.

DSN-155. Costume Design and Construction. 3 Credits.
LECT 1 hr, LAB 4 hrs
This is a course in advanced sewing techniques that builds on skills developed in Fashion Construction Technology I and II. With costume design, construction and creative problem-solving serving as the foundation, students learn advanced techniques in haute couture tailoring and further develop their designed fashion lines and portfolios.
Prerequisites: DSN-120, DSN-135, DSN-160
Additional Fees: Course fee applies.

DSN-160. Fashion Construction Technology II. 3 Credits.
LECT 1 hr, LAB 4 hrs
This intermediate course in fashion construction techniques concentrates on the details that set couture sewing apart from ready-to-wear and standard home sewing. The student explores hand-detailed sewing, speed techniques and embellishment while improving their skills in construction. Basic sewing knowledge is a must for this class.
Prerequisites: DSN-135 or permission of Design Advisor
Additional Fees: Course fee applies.

DSN-165. Drawing for Designers. 3 Credits.
LECT 1 hr, LAB 4 hrs
A studio course that introduces the design student to the many techniques of drawing required for a design professional. The course explores perspective, line quality and the graphic visualization process as well as method, materials and subject matter. Students learn to use rapid visualization skills in solving complex design problems.
Prerequisites: ART-122
Additional Fees: Course fee applies.

DSN-219. Advanced CAD 3D Modeling. 3 Credits.
LECT 1 hr, LAB 4 hrs
Upon completing CAD I and CAD II, students are next expected to acquire advanced skills in 3D modeling. This course expands on the lessons learned in CAD I and II and teaches the students valuable skills that are critical to the product and build environments. Working with advanced digital imaging software like Adobe Revit, students learn to generate modeled images with a critical determination.
Prerequisites: ENR-117, ENR-118, DSN-120.
Early Childhood Education (CDC)

Courses

CDC-110. Early Childhood Development. 3 Credits.
LECT 3 hrs
This course studies the growth and development of the child from birth through age ten. It will cover a variety of factors that influence child development such as diversity, culture, health, economic and family environment. Also it provides an overview of the major theorists in the field of human development. There will be discussion regarding these theorists' contributions to understanding how children grow and learn. Students will have the opportunity to observe and report on a variety of teaching and learning venues.
**Economics (ECO)**

**Courses**

**ECO-113. Elements of Economics. 3 Credits.**
LECT 3 hrs
This is a one semester course that combines abstract principles, simple geometric approaches, applied problems and their analysis for those students seeking an understanding of some fundamental economic principles and laws. This understanding is enhanced by exploring the mechanics, operations and usefulness of economics to consumer, businesses, governments, both nationally and internationally.

**ECO-120. Economics and Economic Issues. 3 Credits.**
LECT 3 hrs
This course combines economic principles with applications to contemporary problems. Emphasis is placed on using economic concepts to analyze and understand social, political, philosophical and diversity issues. This course is a social science elective.

**ECO-211. Principles of Economics I Macroeconomics. 3 Credits.**
LECT 3 hrs
Macroeconomics is the study of aggregate economic behavior. National income, employment, price stability and economic growth are analyzed. Fiscal and monetary policies to alleviate inflation and unemployment are also studied.
Prerequisites: MAT-016 or equivalent.

**ECO-212. Principles of Economics II Microeconomics. 3 Credits.**
LECT 3 hrs
Microeconomics is the study of prices and markets. Product and resource markets under competitive and non-competitive conditions are analyzed. Behavior of the firm in the determination of price, output and employment of the factors of production is examined. This course includes an introduction to international economics.
Prerequisites: ECO-211.

**ECO-217. Economics of Labor. 3 Credits.**
LECT 3 hrs
Labor economics analyzes the structure and performance of the market for labor and public policy as it affects the employment and remunerations of labor. Among the many multifaceted issues that may be explored are: demand for labor, supply of labor, employment and unemployment, inflation and wages, effects of unions on wages and employment, wage differentials, discrimination in the labor market, human capital theory, migration, job search, and the effects of international trade on domestic output, employment and wages.
Prerequisites: ECO-211
Corequisites: ECO-212.

**ECO-291. Special Topics in Economics. 3 Credits.**
LECT 3 hrs
This course examines selected topics or issues in economics. Topics may differ each time the course is offered. Students should consult the department chairperson for further information. This course is not offered every semester.

**ECO-292. Special Topics in Economics. 3 Credits.**
LECT 3 hrs
This course examines selected topics or issues in economics. Topics may differ each time the course is offered. Students should consult the department chairperson for further information. This course is not offered every semester.
Prerequisites: Permission of department chair.

**Education (EDU)**

**Courses**

**EDU-111. Teaching in America. 3 Credits.**
LECT 3 hrs
This course presents the historical and philosophical foundations of American education and how they relate to contemporary issues facing teachers in America today. The goal is to provide students with a comprehensive understanding of the development of the teaching profession including both its roots and modern-day direction. The course offers theoretical and practical learning experiences including five hours of field experiences in public schools.
Prerequisites: All basic skills/remediation in English must be completed. GPA of 3.0 or higher and permission of the department chair or advisor (via petition).
Corequisites: PSY-113.

**EDU-211. Behavior Observation in Education. 3 Credits.**
LECT 3 hrs
This course uses weekly seminars and 20 hours of field experience in public schools to integrate theory and classroom observations in order for prospective teachers to understand curriculum development and instructional methods. Aspiring teachers learn how to use descriptive research methods to gain insight into the instructional needs of learners by observing them in their natural classroom settings. Armed with this experiential knowledge, students will use the seminar to report and discuss their observed findings, as well as relate this practical information to the theories of curriculum development and instructional strategies.
Prerequisites: EDU-111, PSY-113 and permission of department chair or advisor (via petition). Cumulative GPA of 3.0 or higher
Corequisites: PSY-217.
Electronics Engineering Technology (ELT)

Courses

ELT-110. Digital Principles. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course develops the fundamentals of the binary system. Circuit implementation from Boolean functions and map minimization. Course includes study of combinational logic, sequential logic circuits, flip-flops, counters and shift register. The laboratory allows the student to apply theory to practical digital circuits.
Additional Fees: Course fee applies.

ELT-115. Active Circuit Components. 3 Credits.
LECT 2 hrs, LAB 4 hrs
This course introduces the behavior of semiconductor electronic devices and develops the device characteristics. Some DC and AC circuit theory is expanded upon so that the active devices can be properly analyzed. Biasing techniques and models of amplifier configurations are stressed for the bipolar transistor and field effect devices. Diodes, rectifiers, filtering and switching circuit applications are studied. Laboratory includes the verification of device characteristics and the testing of basic amplifier and switching configurations.
Prerequisites: ELT-201
Additional Fees: Course fee applies.

ELT-121. Circuit Analysis. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course introduces the student to both DC and AC circuit theory. It includes Ohm’s and Kirchhoff’s laws for analysis of series and parallel circuits. Computer circuit simulation of series-parallel, ladder and bridge networks in both DC and AC are analyzed. Resonance and frequency response are included along with some discussion of AC power and transformers. The laboratory experiments are designed to support the theory and obtain measurement skills.
Prerequisites: MAT-110 and ENR-124
Additional Fees: Course fee applies.

ELT-123. Studio Maintenance. 3 Credits.
LECT 2 hrs, LAB 2 hrs
For Music Recording majors only. This course provides students an introduction to music studio electronics. Basic skills of working with electronic components are covered, including soldering, the use of electronic measuring equipment and troubleshooting procedures. Studio cabling and infrastructure are dealt with extensively. Various wiring schemes and grounding techniques are examined to give the student an understanding of the typical music studio layout found in the professional environment. This course is for Music Recording majors only and does not serve as a technical elective for the Electronics Engineering Technology major. This course is offered in the Fall and Spring semesters.
Prerequisites: MUS-165
Additional Fees: Course fee applies.

ELT-200. Biomedical Electronics. 3 Credits.
LECT 3 hrs
This course is the study of the techniques and theory behind the instrumentation utilized in hospital and health-related laboratory work. Emphasis is placed on physiological signals derived from the body and the problems and safety issues associated with their measurement. Demonstrations are conducted in class.
Prerequisites: ELT-115 and ELT-201.

ELT-201. Electricity and Electronics. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is a fundamental study of electricity and electronics for Engineering Technology majors. The principles of electrical components and circuits are studied in class and laboratory. Topics include DC, AC series and parallel circuits, transformers and power supplies, solid state amplifiers and control components. The laboratory enables the student to apply the theory discussed in class and to gain some proficiency in the use of electronic measuring equipment.
Prerequisites: MAT-110 or equivalent and ENR-124
Additional Fees: Course fee applies.

ELT-209. Advanced Digital and Microprocessors. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is an extension of digital theory into the operation and interfacing of microprocessors. Major topics include sequential logic design, memory organization, microprocessor architecture, machine level programming, A/D and D/A conversion, and serial and parallel interfacing. An associated laboratory provides for hands-on microprocessor interfacing and the use of logic analyzers.
Prerequisites: ELT-110 and ENR-120 or CMP-128
Additional Fees: Course fee applies.

ELT-210. Electronic Fabrication. 1 Credit.
LAB 3 hrs
This course provides students with an opportunity to learn about the process involved in the fabrication of electronic circuit boards. Using computer-aided drafting tools, students create an electronic component layout and necessary art work for the construction of a printed circuit board. Students are introduced to project management concepts and techniques, soldering, test specifications and printed circuit board construction. A term project or a series of smaller projects enables students to manage, build and assemble a printed circuit board and develop test specifications.
Prerequisites: ENR-117
Additional Fees: Course fee applies.

ELT-213. Active Circuit Design. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course covers analysis and design of solid-state amplifiers using bipolar and field effect transistors. Topics include frequency response using Bode plots and feedback analysis as applied to operational amplifiers and oscillators. Laboratory verification includes transistors, amplifiers, power amplifiers, IC operational amplifiers and oscillators.
Prerequisites: ELT-115 and either ELT-121 or ELT-201
Additional Fees: Course fee applies.
ELT-215. Industrial Electronics. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course covers operational amplifiers in linear, non-linear and active filter applications, pulse and wave-shaping techniques, power supplies and regulators, thyristor control of power and transducers. The laboratory includes experiments in design and tests to support the above topics.
Prerequisites: ELT-209 and ELT-115
Additional Fees: Course fee applies.

ELT-227. Biomedical Clinical Experience. 3 Credits.
LECT 3 hrs
This course provides the student with a 200-hour internship at a local hospital. The student assists in the maintenance and calibration of biomedical electronic equipment. The student must abide by any rules and regulations stipulated in the affiliation agreement with the partnering hospital. As a minimum, the student is required to purchase liability insurance and agree to a criminal background check.
Prerequisites: ELT-200 and permission of department chair
Additional Fees: Course fee applies.

ELT-230. Optoelectronics. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course covers principles of light and linear optics characteristics of electro-optical light sources and detectors and their applications in industry, displays and communication (fiber optics). Lab experiments demonstrate electro-optical measurements and designs of typical applications of electro-optical devices.
Prerequisites: MAT-110
Additional Fees: Course fee applies.

ELT-231. Electronic Communication Systems. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course covers A.M., F.M., and single side-band communication systems, including an introduction to digital transmission. Designed to familiarize the student with transmitters, receivers, modems, noise analysis, information theory, pulse modulation, sampling, coding, multiplexing and other signal processing techniques used in commercial broadcasting and data transmission systems. The course includes some coverage of transmission lines, antennas, microwaves and satellites. Includes laboratory work involving communication system components and techniques using industrial grade equipment.
Prerequisites: ELT-201
Additional Fees: Course fee applies.

ELT-239. Cooperative Work Experience Electronics Engineering Technology. 3 Credits.
This course provides a field experience in the laboratory facilities of an industrial firm. The course is designed for students in the Electronics Engineering Technology programs to obtain industrial experience as a supplement to their college studies prior to career employment. Seminar evaluation visitations are included. Students must have completed 35 credits to enroll.
Prerequisites: Permission of department chair.

ELT-291. Special Topics in Electronics Engineering Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course provides an examination of selected topics or issues in Electronics Engineering Technology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

ELT-292. Special Topics in Electronic Engineering Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course provides an examination of selected topics or issues in Electronics Engineering Technology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

Engineering Science and Engineering Technology (ENR)

Courses

ENR-103. Basic Engineering Graphics I. 1 Credit.
LAB 3 hrs
Students learn fundamentals of engineering drawing through freehand sketching. Course includes developing orthographic views including auxiliary views, dimensioning, sectioning, tolerancing, threads, fasteners, springs and assembly drawings. Course includes creation of pictorial drawings.

ENR-117. Computer-Aided Drafting I. 2 Credits.
LECT 1 hr, LAB 4 hrs
This course is an introduction to the concepts and operation of engineering drawing preparation using CAD (computer-aided drafting). The emphasis is on how CAD can reduce drawing time and improve accuracy. Students learn to use the AutoCAD software program to prepare drawings.
Additional Fees: Course fee applies.

ENR-118. Computer-Aided Drafting II. 2 Credits.
LECT 1 hr, LAB 4 hrs
This course is a continuation and enhancement of Computer-Aided Drafting I. Topics include prototype drawings, blocks, attributes, x-reference, grips, paper space and development of 3-dimensional solid modeling.
Prerequisites: ENR-117
Additional Fees: Course fee applies.

ENR-119. Technical Computer Applications. 1 Credit.
LAB 3 hrs
This course provides an introduction to the various technical tools available to help solve problems in the field of engineering technology. This is a hands-on laboratory course designed to provide students with experience in using scientific calculators, Windows Operating System, Microsoft Office and Internet search tools. Special emphasis is placed on the development of technical reports using Microsoft Office's EXCEL and Word programs.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.
ENR-120. Technical Computer Programming. 2 Credits.
LECT 2 hrs, LAB 2 hrs
This course is an introduction to computer programming with application to engineering technology. Microcomputers are used to develop application programs in a programming language.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

ENR-121. Engineering Graphics. 2 Credits.
LECT 1 hr, LAB 3 hrs
This course is an introduction to computer aided design software and hardware. Covered are geometric constructions, multiview orthographic projection, dimensioning, sectioning, auxiliary view and axonometric projection and principles of descriptive geometry. A brief introduction to solid modeling is also included. This course is intended for Engineering Science students; Engineering Technology students take ENR-117.
Prerequisites: MAT-123
Additional Fees: Course fee applies.

ENR-123. Introduction to Engineering. 0 Credits.
LECT 1 hr
This course provides the entering engineering student with an overview of the engineering profession and the design process. Topics discussed include the engineering course of study, academic advisement and transfer processes, types of engineering disciplines, problem-solving techniques, typical software tools, reporting techniques, and study skills.

ENR-124. Instrumentation and Measurements. 2 Credits.
LECT 1 hr, LAB 3 hrs
This course is an introductory study in the concepts involving physical measurements utilizing hands-on electrical and mechanical measurement applications. Use of basic instruments and transducers, accuracy and precision, units and standards of measurements, accounting and presentation of errors in measurements.
Prerequisites: MAT-007 or equivalent
Corequisites: ENR-119
Additional Fees: Course fee applies.

ENR-125. Computer Programming for Engineers. 3 Credits.
LECT 2 hrs, LAB 2 hrs
A course in structured and object-oriented programming, emphasizing engineering applications and numerical methods in assignments. Program assignments are coded and are implemented on personal computers.
Prerequisites: MAT-123
Additional Fees: Course fee applies.

ENR-126. Computer Aided Design and Applications. 2 Credits.
LECT 1 hr, LAB 4 hrs
An introductory course in computer aided design using parametric solid modeling software. Creation of solid models of parts, generation of orthographic views, sectional views and auxiliary views are covered. Dimensioning and tolerancing of parts is emphasized along with development of appropriate files to make the parts for product development using rapid prototyping (3-D printing) and to manufacture parts using computerized numerical control machines.
Prerequisites: ENR-117
Additional Fees: Course fee applies.

ENR-220. Hydraulics and Fluid Power. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course is an exploration into the relationship between pressure, density and temperature as they relate to hydraulic and pneumatic systems. Topics include hydraulic pumps, motors and air compressors. The course emphasizes use of engineering standards and specifications for circuit design and component selection. Electrical controls and application to systems are covered. Lab sessions further expand upon lectures by providing students with physical evidence to support theories and ideas acquired in class.
Prerequisites: MAT-110
Additional Fees: Course fee applies.

ENR-222. Mechanics of Solids. 3 Credits.
LECT 3 hrs
Principles of strength of materials are derived for uniaxial stresses and strains, direct shear, torsion bending and combined stresses and column buckling. Also covered are axial force, shear moment and torque in structural members and in statically indeterminate systems. Elementary failure theory of structures and mechanical components is discussed.
Prerequisites: ENR-223.

ENR-223. Engineering Mechanics I (Statics). 3 Credits.
LECT 3 hrs
This course is a vector approach to statics in a plane and in three dimensions, equilibrium of particles and rigid bodies. Equivalent force systems, structural analysis, centroids and moments of inertia. Virtual work and applied engineering problems are incorporated.
Prerequisites: MAT-131 and PHY-130.

ENR-224. Engineering Mechanics II (Dynamics). 3 Credits.
LECT 3 hrs
This course is a calculus-based course in dynamics. Kinematics and kinetics of particles and rigid bodies, Newton's laws, work, energy, impulse and momentum are covered. Practical engineering problems are incorporated.
Prerequisites: ENR-223.

ENR-230. Engineering Strength of Materials. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Principles of strength of materials are derived for uniaxial stresses and strains, direct shear, torsion bending, and combined stresses and column buckling. Elementary failure theory of structures and mechanical components is discussed. Laboratory covers a variety of tensile stress-strain, impact and hardness tests, as well as shear stress-strain and the techniques of report writing.
Prerequisites: ENR-223

ENR-232. Materials Science. 3 Credits.
LECT 3 hrs
This course covers the properties and structure of materials: atomic bonding, molecular, crystalline, noncrystalline structures and crystalline imperfections. It also covers metallic phases, equilibrium and nonequilibrium reactions, processing and properties of ferrous and non-ferrous metals, polymers, ceramics and composites. In addition, corrosion phenomenon is discussed.
Prerequisites: CHM-125 and CHM-126 and PHY-130.
ENR-234. Independent Study in Technology. 3 Credits.
LECT 3 hrs
This course is for students in Engineering Technologies. The student selects an area of interest and proposes a plan of study to a sponsoring faculty member who supervises and evaluates the student's progress.
Prerequisites: Permission of department chair.

ENR-235. Engineering Circuit Analysis I. 3 Credits.
LECT 3 hrs
This first course in engineering circuit analysis covers DC circuit analysis including source transformations, mesh, nodal, superposition, Thevenin and Norton theorems, and the maximum power transfer theorem. Dependent as well as independent sources are included. Transient response of RC, RL and RLC circuits is introduced. Steady-state analysis of single and three phase AC systems is studied using phasor diagrams and the network theorems mentioned above. Real, reactive, apparent power and power factors are included. Use of the computer as a problem-solving tool is included in the course.
Prerequisites: MAT-132.

ENR-236. Engineering Circuit Analysis Laboratory I. 1 Credit.
LAB 3 hrs
This laboratory course includes experiments in DC, AC and transients to accompany the course work in Engineering Circuit Analysis I.
Corequisites: ENR-235
Additional Fees: Course fee applies.

ENR-237. Engineering Circuit Analysis II. 3 Credits.
LECT 3 hrs
This is a second course in engineering circuit analysis. Natural and step response of RL, RC and RLC circuits, mutual inductance, ideal transformers, series and parallel resonance are studied. Laplace transform theory is covered and includes step and impulse response in the S-domain. Bode diagrams of simple and quadratic factors are plotted and the computer is used for actual frequency and phase plots. Fourier Series are studied using both trigonometric and exponential forms.
Prerequisites: ENR-235
Corequisites: MAT-232.

ENR-238. Engineering Circuit Analysis Laboratory II. 1 Credit.
LAB 3 hrs
This laboratory course includes experiments on transformers, series and parallel resonance, filters and frequency/phase response plots, and two-port hybrid models to accompany the course work in Engineering Circuit Analysis II.
Prerequisites: ENR-236
Corequisites: ENR-237
Additional Fees: Course fee applies.

ENR-240. Engineering Technology Project. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course covers the design of products and processes considering functional requirements, manufacturing feasibility and economy, and the use of technical literature and catalogs. Includes design layout and working drawings and group and individual projects.
Prerequisites: ENR-117 and MEC-110 and MEC-141
Additional Fees: Course fee applies.

ENR-241. Instrumentation and Control. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is an introduction to the study of measuring systems and components, digital and analog signals and their characteristics. Mechanical and electromechanical transducer elements are used to measure pressure, temperature, displacement, velocity and acceleration. Static and dynamic performance of instruments, statistical analysis of experimental data are explored. A brief study of process controllers, programmable logic controllers and final control elements are also explored.
Prerequisites: ELT-201
Additional Fees: Course fee applies.

ENR-290. Special Topics in Technology. 1 Credit.
LECT 1 hr
This course is for students in Engineering Technologies. The student selects an area of interest and proposes a plan of study to a sponsoring faculty member who supervises and evaluates the student's progress when used for independent study. The course is also used to cover either current or future topics of interest in technology. Topics discussed will have relevance to either electronics technology, mechanical technology or both, and may vary each semester.
Prerequisites: Permission of department chair.

ENR-291. Special Topics in Engineering. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in engineering. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

ENR-292. Special Topics in Engineering. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in engineering. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: Permission of department chair.

English (ENG)

Courses

ENG-007. Writing Skills Review. 0 Credits.
LECT 2 hr
An intense mini-course focused on the remediation of an individual's writing deficiencies as evidenced on the college's placement test. Students could be placed in this course as a pre-requisite to ENG-111.
Prerequisites: Enrollment from college's placement test.

ENG-022. Elements of Writing. 0 Credits.
LECT 1.5 hrs
An abbreviated version of ENG-025 Writing Skills, this class is for students who exhibit a level of skills on the English Placement Test that preempts their placement in a full semester non-credit course.
Prerequisites: Enrollment from college's placement test.
ENG-025. Writing Skills. 0 Credits.
LECT 3 hrs
Designed to increase the student's proficiency in writing skills, paragraph development, the topic sentence, transitional techniques, comprehension, and supplemental structure and grammar. Lead to the short essay in preparation for English Composition I.
Prerequisites: Enrollment from college's placement test.

ENG-111. English Composition I. 3 Credits.
LECT 3 hrs
The first half of the 6-credit English Communications requirement emphasizes the fundamentals of written communications including expository prose, reading comprehension and interpretation, and rhetorical modes.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

ENG-112. English Composition II. 3 Credits.
LECT 3 hrs
The second half of the English Communications requirement continues emphasis on expository prose and critical writing through the use of literary genres. Methods of literary research and a research paper are required.
Prerequisites: ENG-111 or ENG-131.

ENG-113. Creative Writing. 3 Credits.
LECT 3 hrs
A workshop course designed to encourage and develop talent in the writing of poetry, short fiction and/or drama. Class discussions center on manuscripts submitted by the students.
Corequisites: ENG-111 or ENG-131.

ENG-114. Advanced Creative Writing. 3 Credits.
LECT 3 hrs
A writer's workshop designed for students who have successfully completed Creative Writing and who wish to improve their work through discussion of class submissions and the works of established writers.
Prerequisites: ENG-113.

ENG-115. The Short Story. 3 Credits.
LECT 3 hrs
A study of the short story as a specialized art form, involving the study of writing techniques and styles, films and critical analysis of selected stories.
Prerequisites: ENG-111 or ENG-131.

ENG-116. The Novel. 3 Credits.
LECT 3 hrs
A survey of novels both classic and contemporary, with particular attention to the methods by which such novels are created. Included may be novelists as varied as Dickens, Camus, Flaubert, Vonnegut, Dostoyevsky, Bellow, Joyce and Hesse.
Prerequisites: ENG-111 or ENG-131.

ENG-118. Children's Literature. 3 Credits.
LECT 3 hrs
A survey of children's literature including poetry, picture books, fairy tales and folklore, myths and epics, realistic fiction, and fantasy, with a special emphasis on multicultural and ethnic works.
Prerequisites: ENG-111 or ENG-131.

ENG-119. Introduction to Poetry. 3 Credits.
LECT 3 hrs
Designed for the beginner to develop skill and confidence in reading, understanding, evaluating and appreciating poetry. Includes a wide variety of material but emphasizes short lyrics by major British and American authors. Students are not required to write original poetry.
Prerequisites: ENG-111 or ENG-131.

ENG-123. Introduction to Linguistics - Honors. 3 Credits.
LECT 3 hrs
The course examines the fundamental concepts of language structure and dynamics, including language development, variation and change. Students are required to apply and expand basic theory through independent research and projects that are presented to the class.
Prerequisites: ENG-111 or ENG-131 and permission of department chair or honors advisor.

ENG-131. English Composition I Honors. 3 Credits.
LECT 3 hrs
A continuation of English Composition I-Honors designed to challenge the advanced student. The course emphasizes expository prose and introduces students to short story, poetry and drama and is a continuation of expository writing techniques introduced in English Composition I-Honors. This course is designed to give the advanced student experience in analyzing perceptively and writing critically about three literary genres: short story, poetry and drama.
Prerequisites: Permission of honors advisor.

ENG-132. English Composition II Honors. 3 Credits.
LECT 3 hrs
A continuation of English Composition I-Honors designed to challenge the advanced student. The course emphasizes expository prose and introduces students to short story, poetry and drama and is a continuation of expository writing techniques introduced in English Composition I-Honors. This course is designed to give the advanced student experience in analyzing perceptively and writing critically about three literary genres: short story, poetry and drama.
Prerequisites: ENG-111 or ENG-131 and permission of department chair or honors advisor.

ENG-210. Fantasy Novels. 3 Credits.
LECT 3 hrs
This course will explore fantasy literature as a reaction to the rationalism and realism that dominate post-industrial literature and will explore fantasy's ability to capture imaginations, offer alternative visions, and serve as an analysis of human nature and contemporary society. Authors may include J.R.R. Tolkien, Ursula Le Guin, George R.R. Martin, J.K. Rowling, Neil Gaiman, and Patrick Rothfuss.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132.

ENG-214. Women in Film. 3 Credits.
LECT 3 hrs
Films from c. 1913 to the present are examined for the diverse images of women which they convey. Issues of class, race, ethnicity, global perspective and sexual preference are considered. Films by women directors and writers are emphasized, but coverage also includes works by significant male filmmakers. Genres range from classical Hollywood narrative fiction to documentary, animation and avant-garde.
Prerequisites: ENG-111 and ENG-112 or ENG-131 and ENG-132 or permission of department chair.
ENG-224. Women in Literature. 3 Credits.
LECT 3 hrs
Classic and contemporary literary works are examined for the images of women which they convey. Discussion focuses on relationships between such images and the realities of women’s lives, past and present, in the United States and abroad. Issues of class, race, ethnicity, global perspective and sexual preference are considered in relation to gender. Both male and female authors may be studied. Some film adaptations may be examined for comparisons with written works.
Prerequisites: ENG-111 and ENG-112 or ENG-131 and ENG-132 or permission of department chair.

ENG-233. History of the Theatre I. 3 Credits.
LECT 3 hrs
This course presents a historical survey of the major developments in the theatre from ancient Egypt, Greece and Rome through the time of Shakespeare. Students will become aware of the major developments in all areas of the theatre: acting, directing, design and theatre architecture.
Corequisites: ENG-112 or ENG-132.

ENG-234. History of the Theatre II. 3 Credits.
LECT 3 hrs
This course presents a historical survey of the major developments in the theatre from the time of Shakespeare to the present day. Each historical period includes study of the major dramatists and their works.
Prerequisites: ENG-112 or ENG-132 and ENG-233.

ENG-243. World Literary Traditions: Beginnings to 1650. 3 Credits.
LECT 3 hrs
A comprehensive survey of Western and non-Western literature from the ancient world to 1650. Among genres emphasized are epic, lyric and drama. Representative works from Europe, China, India, Japan and Africa are included.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132.

ENG-244. World Literary Traditions: 1650 to Present. 3 Credits.
LECT 3 hrs
A comprehensive survey of Western and non-Western literature from 1650 to the present. Representative works from Europe, China, India, Japan and Africa are included. Major authors may include Moliere, Flaubert, Dostoevsky, Tolstoy, Tagore and Achebe.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132.

ENG-246. English Classics From Beowulf to Paradise Lost: a Survey of Drama, Romances and Epics. 3 Credits.
LECT 3 hrs
A chronological overview of England's early literary works by selected writers such as Chaucer, Spencer, Shakespeare, Marlowe and Milton.
Prerequisites: ENG-111 and ENG-112 or ENG-131 and ENG-132.

ENG-247. Romantics, Victorians and Moderns- Major British Writers of the 19th and 20th Centuries. 3 Credits.
LECT 3 hrs
A survey of the Romantic, Victorian and Modern periods of British literature, and a study of the growth of the novel. Major writers may include Blake, Wordsworth, Coleridge, Keats, E. Bronte, Browning, Arnold, Tennyson, Hardy, Lawrence, Yeats, Eliot and Joyce.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132.

ENG-249. American Literature From the Colonial to The Civil War. 3 Credits.
LECT 3 hrs
A survey of American literature from colonial beginnings to the Civil War, including but not restricted to Franklin, Cooper, Poe, Hawthorne, Melville, Emerson, Thoreau and Whitman. The influence of women, Native Americans, African Americans and others who contributed to the development of American culture may be examined as well as concepts such as Calvinism, Neo-classicism and Romanticism.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132.

ENG-250. American Literature From the Civil War To the Twentieth Century. 3 Credits.
LECT 3 hrs
A survey of literature written in America since 1865, including but not restricted to such writers as Dickinson, Twain, James, Wharton, Crane, Chopin, Eliot, Frost, Cather, Hemingway, Fitzgerald and Faulkner. The influence of women, African Americans, immigrants and others may be discussed along with cultural concepts such as Realism and Naturalism.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132.

ENG-283. World Literary Traditions: Beginnings - 1650 - Honors. 3 Credits.
LECT 3 hrs
This course is the first part of a survey of world literature that focuses on classics from various cultures including Greek, Roman, Hebrew, Babylonian, Chinese, Persian, Japanese and European. Readings are intended to stimulate class discussions and thoughtful written assignments.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132 and permission of department chair or honors advisor.

ENG-284. World Literary Traditions: 1650 to Present: Honors. 3 Credits.
LECT 3 hrs
This course is the second part of a survey of world literature that considers the major literary periods as reflected in classics of Western culture as well as African, Asian and Middle Eastern traditions. Attention is also given to racial issues. Readings are intended to stimulate both oral and written responses.
Prerequisites: ENG-111, ENG-112 or ENG-131, ENG-132 and Permission of department chair or honors advisor.

English for Speakers of Other Languages (ESL)

Courses

ESL-010. ESL Reading I. 0 Credits.
LECT 4 hrs
This course introduces ESL students to the basic reading skills and academic vocabulary needed to manage college-level texts. The texts examine aspects of American culture with an emphasis on the college experience. Students are expected to respond to texts with discussions and writing.
Prerequisites: Appropriate placement test scores.
ESL-017. ESL Writing I. 0 Credits.
LECT 8 hrs
This course introduces students to basic grammar, sentence structure, vocabulary and American English writing conventions with an emphasis on the paragraph. Listening comprehension, speaking, reading and writing are reinforced and practiced.
Prerequisites: Appropriate placement test scores.

ESL-019. ESL Reading II. 0 Credits.
LECT 4 hrs
This course furthers the reading skills introduced in ESL Reading I. The course texts enhance cultural awareness and prepare ESL students to comprehend college-level texts in English. Students also continue to develop their academic vocabulary.
Prerequisites: ESL-010 or appropriate placement test scores.

ESL-020. ESL Writing II. 0 Credits.
LECT 8 hrs
This course expands the grammatical and writing skills introduced in Writing I. It presents narrative and descriptive short compositions and more complex sentence structure and grammar. Grammar topics include major tenses, gerunds, infinitives, passives, relative clauses, modals and noun clauses.
Prerequisites: ESL-017 or appropriate placement test scores.

ESL-021. Conversational English. 0 Credits.
LECT 3 hrs
This course provides ESL students with the basis for effective verbal communication in the academic setting. Students learn American English pronunciation, basic presentation skills and idiomatic expressions to prepare for participation in the college classroom.
Prerequisites: Appropriate placement test scores.

ESL-022. Advanced Conversational English. 0 Credits.
LECT 3 hrs
This course furthers the skills introduced in Conversational English. Students learn grammar, idioms which focus on classroom communication, and American English pronunciation to advance their presentation skills.
Prerequisites: ESL-021 or appropriate placement test scores.

ESL-033. Writing III. 0 Credits.
LECT 6 hrs
This course advances students’ academic writing skills in English by refining essay structure for narrative and descriptive essays and improving knowledge and use of standard English grammar rules, mechanics and punctuation. Topics include major tenses, gerunds, infinitives, passives, articles, sentence structure, parallelism, subject-verb agreement, commas and apostrophes. Students who pass ESL-033 exit the ESL program.
Prerequisites: ESL-020 or appropriate placement test score.

ESL-040. ESL Writing Review. 0 Credits.
LECT 1 hr
This is an intensive review course for ESL-033 students who need to strengthen their academic English skills before exiting the ESL program. The course focuses on problematic areas of English language usage and helps students to remedy deficiencies in these areas. Students are placed in this course according to the final score they receive in ESL-033.
Prerequisites: ESL-033.

Courses

FST-101. Introduction to Fire Science. 3 Credits.
LECT 3 hrs
This class is considered to be the foundation course for all students of Fire Science Technology. Students are introduced to the concept of the systems approach to fire protection by presenting the components of modern fire department responsibility including emergency incident management, public education, training, resource management and customer service. Students who have completed their Fire Fighter 1 will receive credit for this course.

FST-102. Fire Prevention and Related Codes. 3 Credits.
LECT 3 hrs
This course provides students with basic knowledge of federal, state and local codes related to building construction, fire and life safety requirements, and other codes. Includes New Jersey state fire safety regulations and related state requirements. National Fire Protection Association (NFPA) and other standards related to fire protection and life safety are examined. Students who have completed their Fire Fighter 1 will receive credit for this course.

FST-103. Fire Fighting Tactics and Strategy. 3 Credits.
LECT 3 hrs
Analysis of the basic rules of fire fighting strategy, defining engine company responsibilities, defining ladder company functions, correlating mutual aid fires and general fire problems. Studies the effective management of suppression forces at various fire situations. Includes consideration of pre-fire planning, problem identification and solution implementation.

FST-106. Fire Protection Systems. 3 Credits.
LECT 3 hrs
A study of the nature of public and private fire protection with an emphasis on analysis of systems of fire detection, fire alarm, fire communications, water distribution networks, fire service, hydraulics and fire suppression.
Prerequisites: Permission of department chair.

FST-107. Fire Apparatus Specifications, Inspections and Maintenance. 3 Credits.
LECT 3 hrs
This course covers the principles of care, maintenance and operation of fire apparatus and pumps. Includes pump construction and accessories, pumping techniques, power development and transmission. Also includes driving, troubleshooting and producing effective fire streams.

FST-201. Fire Service Management. 3 Credits.
LECT 3 hrs
This course introduces the student to the principles of personnel management through the use of effective leadership techniques. Topics include overview of the fire service as an organization and the officer's role in it, interpersonal communications, personality typing, skill development, leadership techniques, group dynamics and principles of fire company management.
Prerequisites: FST-101 or equivalent.
FST-202. Hazardous Materials. 3 Credits.
LECT 3 hrs
A comprehensive study of the physical, chemical and toxicological characteristics of hazardous materials. This course includes basic methods of recognition and identification based upon the chemical and physical properties of hazardous materials, basic safety procedures when utilizing specific types of protective clothing and equipment, and basic tactical information relating to scene management.
Prerequisites: MAT-007 or passing score on the algebra section of the placement test.

FST-204. Fire Protection, Building Construction. 3 Credits.
LECT 3 hrs
This course introduces basic construction principles and the special characteristics of wood and ordinary construction as they concern the fire service. Primary emphasis is on improving the fire officer’s ability to ensure firefighter safety by recognizing common causes and indicators of failure and other hazards relating to building construction. Course material enables the fire officer to better predict the overall reaction of a building to fire conditions.

FST-205. Fire Investigation. 3 Credits.
LECT 3 hrs
An in-depth course that defines successful methods for conducting fire investigations. Specific topics include basic chemistry of fire, point of origin, fire cause (both accidental and incendiary), motivation of the fire setter, fire scene investigations, evidence collection, photography, follow-up investigation and court testimony.
Prerequisites: MAT-007 or passing score on the algebra section of the placement test.

FST-206. Fire Hydraulics. 3 Credits.
LECT 3 hrs
This course is a concentrated study in the application of mathematics and physics to the properties of water as used in fire suppression operations. Classic hydraulics formulas are used to solve problems for flow velocity, nozzle reaction, friction loss, water distribution systems, fire flow testing, fire service pumps and fire ground hose evolutions.
Prerequisites: MAT-007 or passing score on the algebra section of the placement test.

FST-207. Emergency Medical Technician. 6 Credits.
LECT 4 hrs, LAB 4 hrs
This course is designed to prepare the basic Emergency Medical Technician in accordance with the United States Department of Transportation curriculum and the New Jersey Department of Health guidelines. This course covers an introductory survey of emergency medical services including medical, legal/ethical aspects, role of the Emergency Medical Technician, patient assessment, care of wounds and fractures, airway maintenance, medical and environmental emergencies, patient transportation, emergency childbirth and basic extrication. After completion of this course, the student will be eligible to take the National Registry Examination for certification as an Emergency Medical Technician-Basic. Students who are already registered EMT-Basic in New Jersey will be given credit for this course.

FST-210. Current Issues in Fire Science/ Capstone Experience. 3 Credits.
LECT 3 hrs
A review of the current problems affecting the fire service with particular emphasis on resource allocation, planning and fiscal constraints. The capstone experience requires the student to author and present a scholarly research paper on a topic covered in this course. Students must have completed 40 credit hours in the Fire Science Curriculum or have permission of department chair.
Prerequisites: Permission of department chair.

French (FRE)

Courses

FRE-111. Elementary French I. 3 Credits.
LECT 3 hrs
Not for students with two or more years of high school French. See department chair. This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar.

FRE-112. Elementary French II. 3 Credits.
LECT 3 hrs
Students with one prior semester of French expand their study of basic French pronunciation, vocabulary and grammar of an elementary nature. Grammar study includes possessive and demonstrative adjectives, partitive articles, verbs, common irregular verbs in the present tense, the imperative, and the past tense. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance French language proficiency. The cultural context of the language is also covered.
Prerequisites: FRE-111 or permission of department chair.

FRE-211. Intermediate French I. 3 Credits.
LECT 3 hrs
This course is intended for students whose study of the first year of French is recent and who wish to acquire new skills in the language. It includes the introduction of new grammatical concepts such as affirmative and negative pronouns, the imperfect tense, direct and indirect object pronouns, agreement with past participles, adverbs, the pronouns y and en and additional verbs with irregular forms. Higher emphasis is given to conversation. Some compositions are required.
Prerequisites: FRE-112 or permission of department chair.

FRE-212. Intermediate French II. 3 Credits.
LECT 3 hrs
This course expands the French vocabulary, grammar, reading and writing skills of those students wishing to attain an intermediate to advanced level of French. The grammatical concepts presented in the course include, but are not limited to, the future and conditional tenses, the subjunctive mood, indefinite pronouns and adjectives, relative pronouns, and the comparative and superlative of adjectives. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance French language proficiency. The cultural context of the language is also covered. A few readings from modern French literature and compositions on cultural subjects are required.
Prerequisites: FRE-211 or permission of department chair.
GER-111. Elementary German I. 3 Credits.
LECT 3 hrs
Not intended for students with two or more years of high school German. See department chair. This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar.

GER-112. Elementary German II. 3 Credits.
LECT 3 hrs
Students with one prior semester of German expand their study of basic German pronunciation, vocabulary and grammar of an elementary nature. Grammar study includes imperative, past, present and dependent infinitives, attributive adjectives and adjectives used as nouns. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance German language proficiency. The cultural context of the language is also covered.

GRD-110. History of Graphic Design. 3 Credits.
LECT 3 hrs
This is a lecture course that provides an overview of major graphic design movements and design styles. The focus is on important graphic design innovations and breakthrough technologies. The student is introduced to graphic design masters and masterpieces and is familiarized with major design studios and advertising agencies. A classic foundational textbook is recommended reading which is supported by slide presentations, videos, websites and trade articles.

Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.
GRD-111. Introduction to Computer Graphics. 3 Credits.
LECT 2 hrs, LAB 1 hr
Instruction focuses on the use of the computer as a visual tool and
the emphasis is on creative visual output. An overview of various
graphic design programs such as illustration, scanning and page
layout supports the creation of two-dimensional design as it applies
to printed material.
Prerequisites: ART-130, ART-122 or MED-114 and Placement
Basis or ENG-025 or ENG-022 or ENG-007 equivalent
Additional Fees: Course fee applies.

GRD-116. Electronic Prepress. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course provides the student with the basic vocabulary and
fundamental understanding of the techniques and processes
involved in both traditional mechanical layout and the contemporary
counterpart of electronic prepress preparation for printed material.
Students manipulate the elements of typography, photography,
illustration and text to create camera-ready art and electronically
ready art and finished traditional and electronic mechanicals. Field
trips to a printing facility and/or service bureau may be included.
Prerequisites: ART-122, ART-130, GRD-111, GRD-118, GRD-120
Additional Fees: Course fee applies.

GRD-118. Typography I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Emphasis is based on developing a typographic vocabulary,
identifying and recognizing type fonts and exploring type as design
elements. Students engage in the skills of hand lettering and
compositional layout while addressing letter proportion, anatomy,
structure and typographic space. Communication problems
emphasize typography as the primary design focus.
Prerequisites: ART-130, ART-122 or MED-114 and Placement
Basis or ENG-025 or ENG-022 or ENG-007 equivalent
Additional Fees: Course fee applies.

GRD-120. Graphic Design I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course introduces professional creative problem solving in
graphic design. Emphasis is based on the fundamentals of critical
thinking, the critique process and effectively integrating concepts
with the principles of design. Students engage in visual research,
thumbnail sketching and refining rough process sketches by hand.
The use of art and design to meet the communication needs of
business and industry are explored.
Prerequisites: ART-122, ART-130 or MED-114 and Placement
Basis or ENG-025 or ENG-022 or ENG-007 equivalent
Additional Fees: Course fee applies.

GRD-215. Commercial Illustration. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course combines studio approaches and illustration techniques
with an emphasis on communication, visual interpretation and
the integration of illustration with typography. Students execute
product renderings, editorial illustrations and illustrations for
newspapers, magazines and books. Proper use of reference
material is emphasized and the development of the working sketch
is explored as the foundation of the finished illustration. Emphasis
is on conceptual thought, non-verbal communication and drawing
techniques for reproduction.
Prerequisites: ART-122, ART-130
Additional Fees: Course fee applies.

GRD-218. Typography II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A continuation of Typography I with a concentration on creating type
design solutions using the computer. Emphasis is on applying the
rules of typography, using graphic software effectively, exploring
visual hierarchy and engaging in interpretive typography to develop
the typographic message.
Prerequisites: GRD-111, GRD-118, GRD-120
Additional Fees: Course fee applies.

GRD-220. Graphic Design II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A continuation of Graphic Design I with an exploration of more
advanced design problem solving and the development of design
aesthetics. Emphasis is placed on developing comprehensive
layouts that meet the needs of industry standards. Projects may
include branding, corporate ID, posters, packaging and select visual
communication designs. Field trips to art departments, studios and
agencies may be included.
Prerequisites: GRD-111, GRD-118, GRD-120
Additional Fees: Course fee applies.

GRD-227. Portfolio Project. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is an examination and application of a variety of
methods for assembling and presenting graphic art and design in a
professional manner. This course focuses on portfolio preparation,
presentation and interview procedures. Formal and informal
critiques assist the student in defining strengths and career goals.
Prerequisites: Scheduled during the final semester and permission
of designated Graphic Design faculty.

GRD-229. Cooperative Work Experience-Related Class. 1
Credit.
LECT 1 hr
A related class designed to supplement work experience. Weekly
meetings include readings, discussions, written assignments and
critical analysis of the work experience.
Prerequisites: GRD-111, GRD-116, GRD-118, GRD-120 or GRD-225 and Portfolio Review with permission of department
chair
Corequisites: GRD-232.

GRD-230. Computer Assisted Illustration. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A continuation of the study of commercial illustration techniques
with the integration of typography. Students explore computer
color illustration and image manipulation, and work with scanned
photography, digitized illustrations, laser and inkjet prints. Students
execute product and editorial illustrations with an emphasis on
combining fine art and graphic art processes to create sophisticated
portfolio projects.
Prerequisites: GRD-111, GRD-118, GRD-120
Additional Fees: Course fee applies.
GRD-232. Graphic Design Internship/Cooperative Work Experience. 3 Credits.
LECT 3 hrs
Practical work experience within the realm of graphic design and advertising. Students perform work for cooperating employers in advertising agencies, graphic design studios or corporate art departments. Practical work experience may include design assignments at printing facilities or other communication-based businesses.
Prerequisites: GRD-111, GRD-116, GRD-118, GRD-120, GRD-220, GRD-250, GRD-255. A minimum 2.5 GPA and portfolio review with permission by designated Graphic Design faculty is required
Corequisites: GRD-229.

GRD-240. Computer Assisted Page and Cover Design. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This is an intermediate lecture/studio course designed to further develop skills in publication design with the goal of designing the Promethean Literary and Arts magazine. In the professional environment of a publication design studio format, students work as a creative team of editors, designers and proofreaders to develop the Promethean from concept to final product, under a specialist's supervision. Lecture topics include organizational planning, purpose, content, typeface selection, illustration/photography, paper stock, bindings, covers and management skills. Utilizing current industry software, students have the opportunity to design and produce a finished professional in-house publication for the College and for their portfolios. Graphic design issues, historical, cultural and technical, are addressed in the design of the Publication.
Prerequisites: Approval of the Graphic Design Special Projects Leader
Additional Fees: Course fee applies.

GRD-250. Brochure and Magazine Design. 3 Credits.
LECT 1 hr, LAB 4 hrs
This course trains the person familiar with traditional layout procedures. It stresses transferring manual board skills to the electronic screen. Brochures, magazines, web pages, newspaper pages and a variety of other print materials are practiced. This course examines theory, styles, trends and the mechanics of cover and page design to create portfolio projects.
Prerequisites: GRD-111, GRD-118, GRD-120
Additional Fees: Course fee applies.

GRD-255. Advertising Design. 3 Credits.
LECT 1 hr, LAB 4 hrs
This course is designed to further develop hands-on skills in concept and design with the goal of creating an advertising campaign. In the professional environment of an ad agency format, students work as a creative team of art director and writer to research and develop the ad, radio and TV commercial from concept to final production, under a specialist's supervision. Lecture topics include organizational planning, purpose, content, casting production techniques, illustration/photography supervision, as well as management skills, all stressed while the creative execution of the advertising takes place. Assignments consist of print ads, TV commercials, sales promotion, packaging, posters, billboards and web design. Utilizing current standard industry principles, students have the opportunity to design and produce a finished professional product for their portfolio. Advertising issues, historical, cultural and technical, are addressed. A tour of a Manhattan ad agency might be included.
Prerequisites: permission of department chair
Additional Fees: Course fee applies.

GRD-262. Branding for the Web and Other Media. 3 Credits.
LECT 1 hr, LAB 4 hrs
The course will be approached from a graphic design page layout perspective. Students will apply the principles learned in Graphic Design to arrive at a well-designed brand identity and presence that works within the overall semiotic branding experience for the Web and other media. Students will need the full use of a current Macintosh computer.
Prerequisites: ART-122, ART-130, GRD-111, GRD-118 and GRD-120.

GRD-291. Special Topics in Graphic Design. 3 Credits.
LECT 2 hrs, LAB 3 hrs
An examination of selected topics or issues in Graphic Design. Topics may differ each time the course is offered. Students should consult designated Graphic Design faculty for further information.
Prerequisites: A selected course in Graphic Design
Additional Fees: Course fee applies.

GRD-292. Special Topics in Graphic Design. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Graphic Design. Topics may differ each time the course is offered. Students should consult designated Graphic Design faculty for further information.
Prerequisites: A selected course in Graphic Design
Additional Fees: Course fee applies.

GRD-293. Special Topics in Graphic Design. 1 Credit.
LECT 1 hr
An examination of selected topics or issues in Graphic Design. Topics may differ each time the course is offered. Students should consult designated Graphic Design faculty for further information.
Prerequisites: Permission of special projects leader and department chair.

Health and Wellness (HES)
Courses

HES-104. Foundations of Personal Training. 3 Credits.
LECT 3 hrs
This comprehensive class is ideal for anyone preparing for the ACSM, NASM or ACE Personal Trainer exam and those who want to pursue a career in personal training. Course content includes anatomy, applied exercise science, kinesiology, professional roles and responsibilities. ACSM course curriculum is followed. Open to Personal Trainer Certificate of Achievement (Curriculum 0950) students only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

HES-106. Personal Trainer Field Experience. 1 Credit.
COOP 1 hr
This course provides Personal Trainer Certificate of Achievement students with the opportunity to work with clients in the field. Students are linked with professionals in health clubs and commercial and corporate fitness centers who mentor their progress. Arrangements for this field experience must be coordinated through the field experience instructor. Students must accomplish a minimum of 45 hours in one semester in their field experience and write a report of the experience.
Prerequisites: HES-104, open to Personal Trainer Certificate of Achievement students only.

HES-107. Program Design and Implementation. 3 Credits.
LECT 3 hrs
This course provides students with the practical application of current testing procedures and instrumentation used in exercise testing. Students learn to perform and interpret the basic measurement protocols for cardiorespiratory endurance, muscular strength and endurance, flexibility, body composition, and blood pressure. Students learn the principles related to exercise prescription, develop the necessary skills to design and implement training programs as they relate to the components of fitness. Safeguards and effectiveness for all fitness levels are addressed.
Prerequisites: HES-104, open to Personal Trainer Certificate of Achievement students only
Additional Fees: Course fee applies.

HES-111. Introduction to Exercise Science. 3 Credits.
LECT 3 hrs
This course is recommended in the first semester. This is an introductory course to acquaint students with the development and structure of the field of exercise science. The current scientific development of the field is stressed, with emphasis on basic exercise physiology, health and fitness. Open to Exercise Science majors only.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

HES-125. Stretching and Strengthening. 1 Credit.
LAB 2 hrs
This course provides a thorough presentation of exercises for improving strength and flexibility without the need for special equipment. Emphasis is on exercising safely and learning the importance of strength and flexibility in conditioning, injury prevention and rehabilitation. It is designed to give students the tools with which to create a personal exercise program. Students need to supply their own exercise mats.
Additional Fees: Course fee applies.

HES-126. Personal Fitness. 1 Credit.
LAB 2 hrs
Students design and practice an exercise program that develops selected components of physical fitness. Each student undertakes assessments of various components of fitness.
Additional Fees: Course fee applies.

HES-127. Weight Training. 1 Credit.
LAB 2 hrs
Basic principles of resistance (weight) training are taught, emphasizing training for general conditioning. Training programs for major muscle groups are developed and practiced. Equipment used includes free weights and some machines.
Additional Fees: Course fee applies.

HES-128. Yoga. 1 Credit.
LAB 2 hrs
This is an introductory course in yoga covering basic hatha yoga postures and exercises. Breathing techniques, flexibility and muscular endurance are enhanced. The course helps relieve stress and develop a sense of peacefulness and tranquility while improving fitness. Students need to supply their own exercise mats.
Additional Fees: Course fee applies.

HES-129. Self-Defense. 1 Credit.
LAB 2 hrs
This course provides students with the knowledge and skills to judge potential threats and react swiftly to defend themselves. Social and psychological effects of violence are discussed, along with legal issues of self defense. The basic techniques of Tae Kwon-Do, Jujitsu and Aikido are introduced for everyday usage. A martial arts attitude is developed.
Additional Fees: Course fee applies.

HES-130. Tai Chi. 1 Credit.
LAB 2 hrs
Tai Chi is a low-impact form of oriental exercise that increases energy, balance and overall health. Total mind-body interaction is emphasized. This course is a gentle means to contribute to overall health and fitness.
Additional Fees: Course fee applies.

HES-131. Pilates. 1 Credit.
LAB 2 hrs
Pilates is a form of exercise that conditions the muscles through specific strength exercises without creating bulk. Based on the system introduced by Joseph Pilates over 70 years ago, exercises are done on both the mat and machines. Emphasis is on the core strength and flexibility of the abdomen and back, as well as other major body areas. Pilates is an exercise system that also concentrates on mind-body connection and correct postural alignment to gain optimal health and fitness. Students need to supply their own exercise mats.
Additional Fees: Course fee applies.

HES-132. Cardio Conditioning. 1 Credit.
LAB 2 hrs
This course provides the student with the underlying principles of cardiovascular fitness and the opportunity to participate in activities designed to improve cardiovascular fitness, firm muscles, reduce fat and cope with stress.
Additional Fees: Course fee applies.
HES-141. Personal Challenge I. 1 Credit.
LAB 2 hrs
This activity course focuses on the importance of reaching beyond the individual and utilizing group resources to solve problems through trust, teamwork, communications, self-esteem building, group problem-solving skills, decision making and fun. Students execute safely a series of adventure activities involving wall climbing, rope hanging, game playing and cable walking in order to enable the group to cross real and imaginary boundaries. All activities are individualized so that any student may successfully participate. Taught off-campus.
Additional Fees: Course fee applies.

HES-162. Basic Swimming. 1 Credit.
LAB 2 hrs
This course is designed for the non-swimmer or beginner swimmer who has had little or no instructional experience and who may feel uncomfortable in the water. Through this course, one gains basic swimming and diving skills progressing from shallow to deepwater swimming. The National American Red Cross Swimming Levels I-III is covered.
Additional Fees: Course fee applies.

HES-182. Golf I. 1 Credit.
LAB 2 hrs
A beginner's study and practice of the fundamental skills and basic rules of the game of golf. Topics include the make-up of the course, the grip, swing and stance, the equipment, and the rules. A portion of the course is held off campus at local golf facilities.

HES-186. Badminton. 1 Credit.
LAB 2 hrs
A beginning course which introduces the student to the basic strokes, rules and fundamental strategies of the game of badminton. Emphasis is placed on the utilization of newly acquired skills in game situations.
Additional Fees: Course fee applies.

HES-187. Volleyball. 1 Credit.
LAB 2 hrs
This course develops techniques, skills and strategies of volleyball. Emphasis is on the development of the basic skills essential for success and enjoyment.

HES-211. Kinesiology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course emphasizes the analysis of the principles of movement through human anatomical design. Major joints of the body, their actions and the muscles that do those actions are stressed. Application to physical exercise is stressed in lab work on strength, endurance and potential motion of major joints.
Prerequisites: BIO-101
Additional Fees: Course fee applies.

HES-212. Exercise Physiology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course includes the study of human responses and adaptations to exercise of varying levels of stress and intensity. Major topics include bioenergetics, the physiology of the circulatory, respiratory, muscular and nervous systems as they apply to exercise, and the underlying physiological basis of fitness. Laboratory experiences illustrate practical application of theoretical content with hands-on experiences to measure and apply what is learned in the lecture component of the course.
Prerequisites: BIO-101, BIO-102 and HES-111, open to Exercise Science majors only
Additional Fees: Course fee applies.

HES-213. Exercise Measurement and Prescription. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course stresses the appropriate measurement of various aspects of human exercise. Measurement of body composition, cardiovascular efficiency, muscular strength and endurance and other physiological parameters are taught and practiced. Students learn how to develop individualized and properly designed exercise prescriptions for adults, including special populations.
Prerequisites: HES-212 (minimum grade of C) Open to Exercise Science majors only
Additional Fees: Course fee applies.

HES-291. Special Topics in Exercise Science. 1 Credit.
LAB 2 hrs
An examination of selected topics or issues in Exercise Science. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Exercise Science.

HES-292. Special Topics in Exercise Science. 1 Credit.
LAB 2 hrs
An examination of selected topics or issues in Exercise Science. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: HES-111.

Health Education (HED)

Courses

HED-112. Drugs, Society and Human Behavior. 3 Credits.
LECT 3 hrs
This course examines the effects drugs have on the individual and society, taking a critical look at the most recent scientific data drawn from medical, sociological and student research. Topics include, but are not limited to, neurophysiology, pharmacology and the demographics of drug use, legal issues, and treatment and prevention programs. Different types of drugs are examined.
Additional Fees: Course fee applies.

HED-115. Personal and Family Nutrition. 3 Credits.
LECT 3 hrs
In this course, students study the relationships of nutrition and eating patterns to one’s health, nutritive value and composition of foods, metabolism, functions and requirements of nutrients throughout life, and essentials of an adequate diet. Emphasis is placed on the practical application of nutrition concepts in everyday life.
Additional Fees: Course fee applies.
HED-128. Lifetime Wellness. 2 Credits.
LECT 1 hr, LAB 2 hrs
This course is designed to provide students with the knowledge and skills necessary to make intelligent decisions about health and wellness. Topics include nutrition and weight management, substance abuse, stress management, fitness, cardiovascular disease and sexually transmitted diseases. Students engage in personally selected programs to improve wellness.
Additional Fees: Course fee applies.

HED-130. Mind-Body Health. 3 Credits.
LECT 3 hrs
This course explores the relationship between the mind and the body. Emphasis is placed on relaxation, meditation, and yoga to enable students to reach a state of peace, calmness and self-awareness. Students explore the integration of the entire self in order to achieve an understanding and an awareness of their own selves and take control of their wellness.
Additional Fees: Course fee applies.

HED-132. Stress Management. 1 Credit.
LECT 1 hr
This course provides students with an understanding of the basic principles of the stress response, the General Adaptation Syndrome, stressors and stress management. Students participate in physical and cognitive exercises designed to reduce stress.
Additional Fees: Course fee applies.

HED-133. Weight Management. 1 Credit.
LECT 1 hr
This course covers information about lifetime weight management. The role of diet, exercise, behavior modification and stress management and their relationship to weight management are emphasized. Students analyze diets, set goals and apply a weight management program to themselves throughout the course.

HED-283. Cardiopulmonary Resuscitation. 1 Credit.
LAB 2 hrs
This course is taught according to American Heart Association (AHA) guidelines. Students learn about heart disease prevention, early recognition of heart attack and stroke, early access to Emergency Medical Services, and recognition and treatment for respiratory arrest, cardiac arrest and obstructed airway emergencies. Students who successfully complete the requirements will receive an AHA CPR card (BLS for Healthcare Provider CPR). This course is available through the Division of Corporate and Community Programs. Students enrolled in the majors of Nursing, Radiography, Respiratory Therapy, Exercise Science, and Early Childhood Education may request that they receive 1 credit toward their HED/HES requirement. Students must present a valid American Heart Association CPR card (BLS for Healthcare Provider CPR) to the Office of Records and Registration to receive credit.
Course fees do not represent income to the AHA or any of its components.
Additional Fees: Course fee applies.

HED-286. Personal Health and Wellness. 3 Credits.
LECT 3 hrs
This course examines current health and wellness topics that have an impact on the individual in today's society. Emphasis is on a wellness approach, examining the physical, emotional, intellectual, social and spiritual dimensions of health. Students engage in evaluations of their own wellness behaviors and investigate in detail at least one health issue of personal significance. (There is no substitution for this course in programs that require it for degree completion.)
Additional Fees: Course fee applies.

HED-293. Special Topics in Health Education. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Health Education. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: A three-credit introductory course in Health Education.

HED-294. Special Topics in Health Education. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Health Education. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: A three-credit introductory course in Health Education.

HED-295. First Aid and Emergency Care. 3 Credits.
LECT 3 hrs
A basic course in first aid which acquaints students with information about prevention of accident and injury and about emergency assessment, recognition and treatment of trauma and sudden illnesses. Upon successful completion of the requirements, the student will receive First Aid certification.
Additional Fees: Course fee applies.

Hebrew (HBR)

Courses

HBR-111. Elementary Modern Hebrew I. 3 Credits.
LECT 3 hrs
Not intended for native speakers. This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar is incorporated. The cultural context of the language is also explored.

HBR-112. Elementary Modern Hebrew II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Hebrew expand their study of basic Hebrew script, pronunciation, vocabulary and grammar of an elementary nature. Grammar study includes future tense, commands, the infinitive, declension of direct object pronouns, regular and irregular verbs. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Hebrew language proficiency. The cultural context of the language is also explored.
Prerequisites: HBR-111 or permission of department chair.

History (HIS)
Courses

HIS-113. Early Modern Europe. 3 Credits.
LECT 3 hrs
This course examines the transition from Medieval to Early Modern Europe. Included in the investigation are the Protestant Reformation and ensuing Catholic Counter-Reformation, and the causes and the consequences of the rise of the modern nation-state and the Enlightenment. It also traces the events precipitating the French Revolution and its aftermath.

HIS-114. Modern Europe. 3 Credits.
LECT 3 hrs
This course surveys Europe since the French Revolution, including the nationalistic, liberal and socialist revolutions of the 19th and 20th Centuries. It investigates imperialism and the power struggles among Europe's established and newly emerged states culminating in World War I. It also examines the Paris Conference, Europe between the two wars, and the rise of European fascism, communism, World War II and its aftermath.

HIS-117. The Ancient World-Greece and Rome. 3 Credits.
LECT 3 hrs
This course familiarizes the student with the cultural heritage of the ancient civilizations of the Mediterranean world, including Egypt, Greece and Rome. By the end of this course, the student should be able to demonstrate an understanding of the most important political, social, economic and cultural developments of the Mediterranean world. This course includes politics, economics, culture and religion.

HIS-118. The Middle Ages. 3 Credits.
LECT 3 hrs
This course investigates European development from the fall of the Roman Empire to the collapse of the Byzantium in 1453. The course includes the analysis of key political, social, intellectual and economic experiences in Western Europe.

HIS-122. History of Russia. 3 Credits.
LECT 3 hrs
The history of Russia from the Tsars to the present. Major emphasis is on the unique development of Russian culture during the Tsarist period through the collapse of the Soviet Union and post-Soviet period. Documents that reflect important developments are included.

HIS-123. History of Modern Africa. 3 Credits.
LECT 3 hrs
This course deals with the history, politics, economics and culture of Africa from the mid-1880s to the present. It provides an analysis of colonialism, nationalism and transfer of power, nation building and economic development and the international relations of African states.

HIS-147. History of Modern East Asia. 3 Credits.
LECT 3 hrs
A survey of modern East Asia including the impact of the West, the modernization of Japan, the origin and growth of the Chinese Communist Party and the Vietnam War.

HIS-148. Modern Middle East. 3 Credits.
LECT 3 hrs
An examination of the historical development of the Middle East with emphasis on the 20th century. Topics covered include the development of nationalism, Pan-Arab movements and the Arab-Israeli conflicts.

HIS-149. History of New Jersey. 3 Credits.
LECT 3 hrs
This course covers the history of the state from colonial times to the present. It emphasizes the lives of ordinary people as well as significant events and uses local history as a way of learning more about American history.

HIS-151. Latin American History. 3 Credits.
LECT 3 hrs
A survey of the historical development of Latin America focusing on its African multicultural and multi-ethnic populations and its emergence as a force in the 20th century. Students examine original documents in order to analyze the structure of social, economic and cultural relationships. Special attention is paid to the development of Argentina, Mexico and the Caribbean nations and their relationship to the United States.

HIS-160. History of Colonial and Revolutionary America. 3 Credits.
LECT 3 hrs
This course surveys the origin and development of the English colonies in America, from the earliest settlements through the Constitutional Convention of 1787. Major topics explored include population growth, territorial expansion, secularization of religious identity, colonial ideas and institutions, the development of English imperial policy and America's break with England.

HIS-164. Civil War and Reconstruction. 3 Credits.
LECT 3 hrs
This course examines slavery and the other issues and events leading to the Civil War. Attention is focused on the political, economic, social and cultural developments of the era as well as on the war and the Reconstruction period.

HIS-166. Emergence of America - U.S. History I. 3 Credits.
LECT 3 hrs
This course examines the first half of American history from the earliest settlements to the end of the 19th century with an emphasis on American expansion and settlement of the Continent and America's frontier heritage.

HIS-167. Twentieth Century American History - U.S. History II. 3 Credits.
LECT 3 hrs
This course surveys the domestic history and foreign policy of the United States in the 20th century. The nation's immigrant experience, political development, urbanization, economic progress and emergence as a superpower are among the topics explored.

HIS-181. The Middle Ages-Honors. 3 Credits.
LECT 3 hrs
This course allows students to investigate major events, as well as significant economic, social and political developments in both Western Europe and non-Western countries. Participants have the opportunity to read and examine primary sources in translation and scholarly monographs.

Prerequisites: Permission of department chair or honors advisor.
HIS-183. Modern Social Thought - Honors. 3 Credits.
LECT 3 hrs
Covers selected topics in the period from the 17th century through contemporary time. Readings of representative social science thinkers are related to their historical context so that students gain an appreciation of the causal reciprocity which exists among theory, practice and culture.
Prerequisites: Permission of department chair.

HIS-184. Early Modern Europe - Honors. 3 Credits.
LECT 3 hrs
This course allows students to investigate major events, as well as analyze significant economic, social, cultural and political ideas and themes through the investigation of primary documents in translation. The course covers European history during the period from 1350 to 1789.
Prerequisites: Permission of department chair or honors advisor.

HIS-185. Modern Europe - Honors. 3 Credits.
LECT 3 hrs
This course allows students to investigate major events, as well as analyze significant economic, social, cultural and political ideas and themes through the investigation of primary documents in translation. The course covers European history during the period from 1789 to the present era.
Prerequisites: Permission of department chair or honors advisor.

HIS-203. History of Minorities in U.S.. 3 Credits.
LECT 3 hrs
An historical survey of ethnic and racial minorities in the United States and the development of cultural pluralism. Emphasis is on the period since the Civil War, with attention to the role played by the various minorities in the nation's economic, political and cultural development and the status of these minority groups.

HIS-204. History of the African-American Experience. 3 Credits.
LECT 3 hrs
A survey of African-Americans from their African origins to the present. Emphasis is on the historical importance of the slavery experience, the black experience in the Civil War and Reconstruction era, and the development of segregation. Special attention is given to 20th century black contributions to American life and thought, black leadership issues and movements relevant to the black experience.

HIS-209. History of American Women. 3 Credits.
LECT 3 hrs
This course examines American women's experience from the colonial era through the contemporary feminist movement, including study of such key topics as the first women's movement, the suffrage and birth control movements, and concludes with understanding the conflicts and accomplishments inherent in women's status today.

HIS-247. History of the American City and Suburb. 3 Credits.
LECT 3 hrs
A survey of the development of the American city from colonial times to the present, with concentration on the period since the Civil War. The problems facing urban America today and the exodus to the suburbs also are emphasized.

HIS-291. Special Topics in History. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in history. Topics differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in History.

HIS-292. Special Topics in History. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in history. Topics differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in History.

Hospitality Management (HOS)

Courses

HOS-100. Serv-Safe Food Handling. 1 Credit.
LECT 1 hr
Students are introduced to the basic principles and guidelines of sanitation and food safety in a professional food service environment. Topics include foodborne illness, microbiology, food allergens and facility sanitation. This course provides the benchmark to begin work in a safe food production environment. Included in the course is the opportunity to receive one NRAEF Certificate (Serv-Safe Food Handling) towards the ManageFirst Certification.

HOS-101. Introduction to Food. 3 Credits.
LECT 2 hrs, LAB 2 hrs
The modern kitchen offers a multitude of opportunities to explore the world of food. From the equipment available to the bounty of fresh and processed foods that can be obtained and prepared by both the novice and the more experienced cook, this course presents an introduction to the culinary arts. While the topics are basic, the course is also a foundation to more advanced studies in food.
Additional Fees: Course fee applies.

HOS-102. Food Management. 3 Credits.
LECT 3 hrs
The management of food and related costs in the professional environment is an underlying factor throughout the hospitality industry. This course provides the framework from which to examine any organization and understand the principles by which they operate and manage food production. Included in the course is the opportunity to receive one NRAEF certificate in Controlling Costs towards the ManageFirst Certification.

HOS-103. Food Production. 3 Credits.
LECT 2 hrs, LAB 2 hrs
The production of food in the professional environment is a demanding and time-consuming process which requires great skill. This course provides the framework from which to examine any organization and understand the principles and processes by which they prepare and manage food production. Included in the course is the opportunity to receive one NRAEF Certificate in Food Production towards the ManageFirst Certification.
Prerequisites: HOS-101 or equivalent
Corequisites: HOS-101 or equivalent
Additional Fees: Course fee applies.
HOS-105. Food Science and Nutrition. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course covers the role of nutrition in food and health and the impact nutrition has on the food service industry. Students learn basic nutrition concepts and discuss current findings and controversies. Topics include foods, labels, recipes and menus for nutritional benefits, and plan diets. In laboratory sessions, students apply their knowledge of nutritional concepts to make healthier food. Included in the course is the opportunity to receive one NRAEF Certificate (Nutrition) toward the ManageFirst Certification.
Prerequisites: HOS-100
Corequisites: HOS-100
Additional Fees: Course fee applies.

HOS-106. Success in Hospitality. 1 Credit.
LECT 1 hr
This course is designed to offer first-year students in Hospitality a comprehensive approach to success at CCM and in future career endeavors in the Hospitality Industry. An introduction to academic responsibility and personal growth will lead to thoughtful consideration of career goals. The planning, defining and organizing for success will be addressed on an individual basis in relation to the educational and career goals at CCM and in the future.

HOS-111. Conversational Spanish in Hospitality. 1 Credit.
LAB 2 hrs
Topics covered in this course focus on the importance of building a welcoming work environment and encouraging diversity with a Spanish employee. The hospitality industry includes hotels, restaurants, banquet halls, hospitals, schools, office buildings, government buildings, cruise ships and operate in both the private and public sectors. The positions found in these establishments range from top-management to entry-level. Many of the positions are filled by Spanish-speaking workers who have the skills to fulfill the job requirements; however, many do not speak English. The industry is recognizing this communication barrier among their employees, and the purpose of this class is to help the student become better acquainted with the Spanish language in the hospitality industry focusing on vocabulary and grammar.

HOS-117. Introduction to Baking. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This is an introductory course in baking. This class introduces the student to the fundamental principles within a bakeshop and pastry kitchen. The student learns the basic baking ingredients and how they are used; weights, measurements, equipment and importance of accuracy; and basic procedure common to bakery formulas. Student create and bake breads, quick breads, muffins and assorted pies.
Additional Fees: Course fee applies.

HOS-118. Introduction to the Hospitality Industry. 3 Credits.
LECT 3 hrs
A survey course of the hospitality industry which provides students with an overview of the role of management within the profession. Fundamentals of lodging management including luxury, convention, all-suite, gaming and resort hotels, and food service management, including restaurants, catering, and institutional and business food service are studied. In addition, travel and tourism, recreation and leisure management (theme parks, clubs and public parks), meeting and event sales, planning and management, senior living services and support infrastructure, and casino and gaming management, as the balance of the eight areas which comprise the main business segments of the hospitality industry, are studied. Basic concepts of ownership, franchising, management, human resources, marketing, cost control, facilities management, service and career opportunities are examined.

HOS-120. Hotel/Hospitality Management. 3 Credits.
LECT 3 hrs
This course provides Hospitality Management students and aspiring hotel management professionals within the industry strong conceptual management underpinnings while addressing the unique requirements of lodging managers. Students are taken on a department-by-department tour of a full-service hotel. The organization and operation of lodging properties are analyzed from the perspective of the front office manager. This course combines discussions of hotel departmental managerial responsibilities, roles and practices with information directly relevant to careers in lodging management. Students learn about the procedures effective managers use to ensure their hotels and, thus, their own ultimate success.

HOS-121. Advanced Baking. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course is a continuation of the baking methods and formulas presented in Introduction to Baking. Students prepare a variety of cakes and icings and learn to apply a variety of decorating styles and techniques. In addition, students create advanced yeast bread, pies, tarts, mousses and chocolates. Emphasis is also placed on dessert plating and presentation which will be covered during the combined lecture and laboratory classes.
Prerequisites: HOS-117
Additional Fees: Course fee applies.

HOS-123. International Cuisines. 3 Credits.
LECT 2 hrs, LAB 2 hrs
The study of the world of food and the cuisines of different cultures is one of the growing trends in the United States. Our modern culture brings together a multitude of different possibilities in the kitchen and is a fascinating and wide-ranging study of both practice and theory. This class will prepare menu items from around the world to delight the mind and expand the individuals cooking experience in a production kitchen.
Additional Fees: Course fee applies.

HOS-125. American Regional Cuisine. 1 Credit.
LAB 2 hrs
American Regional Cuisine celebrates the diversity, distinction and delectable essences of American cooking. Organized by region, these recipes are drawn from every part of the menu, offering a range of complete meals for each culinary style.
Additional Fees: Course fee applies.
HOS-127. Italian Cuisine. 1 Credit.
LAB 2 hrs
From savory soups to sweet desserts, students study Italian cooking in the same manner as a typical menu. Recipes are drawn from every part of the meal and offer a wide range of culinary styles. The course provides a fascinating introduction to the widely diverse cuisine of Italy.
Additional Fees: Course fee applies.

HOS-128. Chinese Cuisine. 1 Credit.
LAB 2 hrs
Chinese cooking is one of the world's oldest continuous culinary traditions, developed over the course of 4,000 years. A subject of profound importance for countless generations of Chinese philosophers, scholars, poets and ordinary people, the selection, preparation and consumption of food is much more than a matter of sustenance in Chinese tradition. This course examines several of these factors while preparing and sampling traditional Chinese dishes.
Additional Fees: Course fee applies.

HOS-129. Latin Cuisines. 1 Credit.
LAB 2 hrs
Latin Cuisines investigates the origins of modern Iberian, Caribbean, Central, and South American cooking and develops the student knowledge of these areas. The many similarities are only a starting point for the incredible diversity that is modern Latin Cuisine. The class will produce full Latin menus based on different periods and areas of the global community.
Additional Fees: Course fee applies.

HOS-201. Marketing and Event Planning. 3 Credits.
LECT 3 hrs
The field of event planning is one of the most exciting and dynamic aspects of the hospitality industry. In order to be successful, the marketing of not just the business but also the individual is of primary importance. This course offers the opportunity to experience actual event planning while also studying menu, restaurant and personal marketing in relation to the hospitality industry.

HOS-210. Dining Room Management. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Practical training in the operations and practices of a modern dining room. Students will learn the techniques needed to work and succeed as a management professional in the dining environment. The importance of customer service will culminate with the operation of a theoretical restaurant and individual catering experiences as Dining Room staff and management.
Prerequisites: HOS-102
Additional Fees: Course fee applies.

HOS-211. Human Resource Management in the Hospitality Industry. 3 Credits.
LECT 3 hrs
This course applies human resource management principles to the hotel and restaurant industry. Topics covered include recruitment, training, motivation, job descriptions and alternative personnel policies. The course emphasizes the vital role of the diversity within the industry. Students will consider human resources in the context of a complete operating business. Included in the course is the opportunity to receive one NRAEF Certificate in Human Resources towards the ManageFirst Certification.

HOS-213. Food and Beverage Purchasing and Cost Controls. 3 Credits.
LECT 3 hrs
A more advanced course dealing with the concepts of selection and procurement in the hospitality industry. Special emphasis is given to food cost, the purchasing function, procurement and inventory controls. In addition, forecasting, budgeting, cash management, and profit and loss statements also are studied. Included in the course is the opportunity to receive one NRAEF certificate (Inventory and Purchasing) towards the ManageFirst Certification.
Prerequisites: HOS-102
Corequisites: HOS-102.

HOS-215. Bar and Beverage Service Management. 3 Credits.
LECT 3 hrs
A comprehensive study of food and beverage managerial principles, with an emphasis on alcoholic beverages. The manufacture, distribution, control procedures, legal aspects, integrity issues and the responsible service of alcoholic beverages are studied. Students gain product knowledge of distilled spirits, wines and beers, including an examination of contemporary non-alcoholic beverage alternatives. The opportunity for two NRAEF certificates is included in the course (Serv-Safe Alchohol and Bar & Beverage Management).

HOS-221. Cooperative Work Experience Hospitality (45-100 Hours). 1 Credit.
COOP 1 hr
This course provides students enrolled in the Hospitality programs with job-oriented training and practical work experience in a work environment prior to permanent employment amounting to between 45 and 100 hours in duration. The course may be taken in fulfillment of a requirement or as an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: Permission of department chair
Corequisites: HOS-224.

HOS-222. Cooperative Work Experience Hospitality (90-200 Hours). 2 Credits.
COOP 2 hrs
This course provides students enrolled in the Hospitality programs with job-oriented training and practical work experience in a work environment prior to permanent employment amounting to between 90 and 200 hours in duration. The course may be taken in fulfillment of a requirement or as an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
Prerequisites: Permission of department chair
Corequisites: HOS-224.
HOS-223. Cooperative Work Experience Hospitality (135-300 Hours). 3 Credits.
COOP 3 hrs
This course provides students enrolled in the Hospitality programs with job-oriented training and practical work experience in a work environment prior to permanent employment amounting to between 135-300 hours in duration. The course may be taken in fulfillment of a requirement or an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
**Prerequisites:** Permission of department chair.

HOS-227. Internship Work Experience Hospitality (45-100 Hrs). 1 Credit.
LECT 1 hr
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in an unpaid work environment prior to permanent employment and amounting to between 45 and 100 hours in duration. The course may be taken in fulfillment of requirement or an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
**Prerequisites:** HOS-106 and permission of department chair.

HOS-228. Internship Work Experience Hospitality (90-200 Hours). 2 Credits.
LECT 2 hrs
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in an unpaid work environment prior to permanent employment and amounting to between 90 and 200 hours in duration. The course may be taken in fulfillment of requirement or an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
**Prerequisites:** HOS-106 and permission of department chair.

HOS-229. Internship Work Experience Hospitality (135-300 Hours). 3 Credits.
LECT 3 hrs
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in an unpaid work environment prior to permanent employment and amounting to between 135 and 300 hours in duration. The course may be taken in fulfillment of requirement or an elective in the Hospitality curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of their second semester.
**Prerequisites:** HOS-106 and permission of department chair.

HOS-232. Principles of Travel and Tourism. 3 Credits.
LECT 3 hrs
Principles of travel and tourism offer Hospitality Management majors, other students, and aspiring travel and tourism professionals a comprehensive overview of the principles, practices and philosophies of this interdisciplinary segment of the hospitality industry. Major concepts, including the economics, history, career opportunities, global perspective, worldwide organizations, modes of travel and related services, providers and destination pursuits, are studied.

HOS-233. Food as Art. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course introduces students to the art of food styling, food photography, garde manger and cake decoration. Topics covered include how to prepare, arrange, preserve food photo shoot, techniques on how to prepare pâtés, terrines and fresh cheese. This course covers the art and science of cake preparation, assembly and decoration. Students have the opportunity to create a portfolio of work.
**Prerequisites:** HOS-100, HOS-101, HOS-102
**Additional Fees:** Course fee applies.

HOS-234. Meeting and Event Sales, Planning, and Management. 3 Credits.
LECT 3 hrs
Meeting and Event Sales, Planning and Management offers Hospitality Management majors, other students and aspiring professionals in this discipline an in-depth study of generally accepted principles and practices in this segment of the hospitality industry. Career opportunities, corporate meeting planning, catering organization and administration, and other various types of meetings and events are examined.

HOS-235. Restaurant Operations. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course is the culmination of the student studies in Restaurant Management. The class will develop and market a restaurant concept that will be used to serve the CCM public during the semester. The operations and organization of the restaurant will be managed by the students as an experiential learning module of their overall studies in the course. One certificate from NRAEF (Food and Beverage Management) will be offered for certification.
**Prerequisites:** HOS-100, HOS-210
**Additional Fees:** Course fee applies.

HOS-239. Independent Study-Hospitality Industry. 3 Credits.
LECT 3 hrs
This course is an independent work/study designed for the student on a topic that is selected in accordance with academic standards and dependent upon department chair approval.
**Prerequisites:** Permission of department chair.

HOS-240. Hotel Operations. 3 Credits.
LECT 3 hrs
In the modern Hospitality Industry managers and hotel executives must plan for a variety of business conditions that are constantly changing and developing. This course offers students the opportunity to operate a theoretical hotel property while studying the diverse elements of an ever changing environment. This course is a capstone for the Hospitality Management Program and should be taken in the last semester of studies at CCM.
**Prerequisites:** HOS-120.
Human Services (HMS)

Courses

HMS-215. Introduction to Social Welfare and Human Services. 3 Credits.
LECT 3 hrs
An introduction to the goals, values and philosophy of social work as a profession. Examines the relationship between attitudes and values, economic, political and cultural conditions, and the evolution of social welfare services focusing attention on the historical developments of social services in the United States. Provides understanding of the basic elements of the client-worker relationship.

HMS-216. Human Needs and Social Services. 3 Credits.
LECT 3 hrs
This course presents a conceptual framework through which human behavior is systematically understood. It explores the needs of people as determined by their biological and psycho/social growth and development, and by their special relationship to society and its problems. The means by which these needs can be met by the social welfare system also are presented.

International Studies (ISA)

Courses

ISA-110. Intercultural Communication. 3 Credits.
LECT 3 hrs
This course explores the theory and practice of communication between individuals or groups from different cultures. Topics include a basic theoretical foundation in culture and communication, cultural values, worldview, verbal/nonverbal communication, cultural identity and intercultural competence.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

ISA-215. A Survey of Islam. 3 Credits.
LECT 3 hrs
This course covers the central beliefs and practices of Islam, one of the major world religions. It analyzes passages in the Qur’an and their often varied interpretations among the Muslim community. It studies the life of the Prophet Muhammad and highlights of Muslim history, examines the divisions between Sunni and Shiite Muslims, explores diverse schools of Sharia (Islamic Law), and shows the large common ground Islam shares with Christianity and Judaism in its belief in one God, major prophets, stories and ethical beliefs. Finally, the course analyzes current events in Muslim countries, especially in the Middle East.

ISA-291. Special Topics - International Studies. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in International Studies. Topics may differ each time the course is offered. Students should contact the department chair for further information.
Prerequisites: Permission of department chair.

ISA-292. Special Topics International Studies. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in International Studies. Topics may differ each time the course is offered. Students should contact the department chair for further information.
Prerequisites: Permission of department chair.

Italian (ITL)

Courses

ITL-111. Elementary Italian I. 3 Credits.
LECT 3 hrs
Not intended for students with two or more years of high school Italian. See department chair. This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar, including present tense, prepositions and possessive adjectives. This course covers greetings, introductions, weather, describing people and places, talking about classes, family and other daily activities. The course is designed as part of four semesters of complete language study.

ITL-112. Elementary Italian II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Italian expand their study of basic Italian pronunciation, vocabulary and grammar of an elementary nature. Grammar study includes past tenses, irregular present tense. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Italian language proficiency. The cultural context of the language is also explored.
Prerequisites: ITL-111 or permission of department chair.

ITL-211. Intermediate Italian I. 3 Credits.
LECT 3 hrs
This course is intended for students whose study of the first year of this language is recent and who wish to acquire new skills in the language. As a continuation of grammar, double object pronouns, the comparative and superlative forms, the study of the future tense and the conditional forms are introduced. It also includes a review of grammar. Higher emphasis is given to conversation. Some short compositions are required.
Prerequisites: ITL-112 or permission of department chair.

ITL-212. Intermediate Italian II. 3 Credits.
LECT 3 hrs
This course expands the Italian vocabulary, grammar, reading and writing skills of those students wishing to attain intermediate knowledge of the Italian language. Grammar study includes a review of all verb tenses, the comparative and superlative forms, and the study of the subjunctive mood in all tenses. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Italian language proficiency. The cultural context of the language is also explored.
Prerequisites: ITL-211 or permission of department chair.

ITL-221. Italian Conversation and Literature I. 3 Credits.
LECT 3 hrs
Intensive practice in speaking everyday Italian. Oral and written reports and discussions based on readings from Italian literature.
Prerequisites: ITL-212 or permission of department chair.
Japanese (JPN)

Courses

JPN-111. Elementary Japanese I. 3 Credits.
LECT 3 hrs
Not intended for students with two or more years of high school
Japanese. This course is intended for students with no prior
knowledge of, or with limited background in, the language.
Emphasis is on fundamentals of conversation, reading and writing.
Practice in pronunciation, basic vocabulary and the essentials of
grammar is incorporated. Kana writing system and some Kanji
writing characters are introduced at this stage.

JPN-112. Elementary Japanese II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Japanese expand their study
of basic Japanese language, script, pronunciation, vocabulary and
grammar of an elementary nature. Grammar includes study of basic
syntactical structures. Vocabulary and grammar support listening,
reading, speaking and writing in an effort to enhance Japanese
language proficiency. The cultural context of the language is also
covered. At least 56 Kanji characters are introduced at this stage.

JPN-211. Intermediate Japanese I. 3 Credits.
LECT 3 hrs
The course is intended for students whose study of the first year of
this language is recent and who wish to hone their skills. Students
continue to study Kanji characters. Emphasis is given to vocabulary,
grammar, listening, speaking, reading and writing in an effort to
enhance Japanese language proficiency. Some readings and
compositions on cultural subjects are included.

JPN-212. Intermediate Japanese II. 3 Credits.
LECT 3 hrs
This course expands the Japanese vocabulary, grammar, reading
and writing skills of those students wishing to attain intermediate
knowledge of the Japanese language. Students continue to learn
more Kanji characters. Vocabulary and grammar support listening,
reading and writing in an effort to enhance Japanese language
proficiency. The cultural context of the language is also covered.
Some readings and compositions on cultural subjects are included.

Prerequisites: JPN-111 or permission of department chair.

Landscape and Horticultural Technology (LHT)

Courses

LHT-101. Introduction to Turf Management. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Intended to provide students with the skills needed to professionally
manage turf facilities including golf courses, recreational and
athletic fields. Topics include turf establishment and reseeding,
turf management, turf maintenance, irrigation, control of turf pests
and maintenance of turf areas. This course may be eligible for New
Jersey Pesticide Recertification Credits in both core and selected
categories. This course is offered as a traditional face-to-face course
or as a hybrid online course. The face-to-face course also has an
online supplement.

Additional Fees: Course fee applies.

LHT-108. Herbaceous Plant Materials. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Teaches field identification techniques for herbaceous plants
including annuals, biennials and perennials. The installation,
selection and uses of herbaceous plants in a landscape,
maintenance of herbaceous plants, and the selection of tools and
equipment in the maintenance of herbaceous landscape plants are
also included. This course is offered as a face-to-face course with an
online supplement and also as a hybrid course.

Additional Fees: Course fee applies.

LHT-110. Plant Science. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Plant Science includes studying the effects of the environment on
plant growth and development, plant morphology and physiology,
and plant classification. Students apply theory by propagating,
maintaining and studying plants using the Landscape and
Horticultural Technology program greenhouse facility. This course
is offered as a traditional face-to-face course with an online
supplement, as an online course or as a hybrid online course.

Additional Fees: Course fee applies.

LHT-111. Introduction to Horticulture. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Plant production, plant propagation, greenhouse management and
marketing of bedding plants represent the major topics of study.
Students apply classroom theory by producing both annual and
perennial plants from seed, cuttings and division. Commercial
production techniques are emphasized, including professional
greenhouse management. This course is offered as a traditional
face-to-face course or as a hybrid online course. The face-to-face
course also has an online supplement.

Additional Fees: Course fee applies.
LHT-114. Landscape Plant Identification, Management and Use. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course focuses on field identification techniques applied to the study of woody plant material including trees, shrubs, groundcovers and vines. Both conifer and deciduous plants are covered. The landscape uses of plants and the factors which should be used to guide plant selection are also discussed. Over 100 species of woody plant material are studied including trees, shrubs, vines and groundcovers. The County College of Morris campus, local garden centers and arboreta of the Morris County Park Commission are all used for field study. This course is offered as a traditional face-to-face course, as an online course or as a hybrid online course. The face-to-face course also has an online supplement.
Additional Fees: Course fee applies.

LHT-115. Horticultural Computer Software Applications. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Improves technical literacy by familiarizing students with the most effective ways to use the computer as a tool for online research, landscape design, landscape imaging and digital presentation development. Computer-assisted drafting is a major focus, and students also are introduced to GPS and GIS technology applications in agriculture. Students are provided with the opportunity to achieve competence in the selection and use of horticultural computer software. This course includes an online supplement and also offers students the opportunity to lease or purchase landscape design software at a significant discount.
Additional Fees: Course fee applies.

LHT-116. Horticultural Soils. 4 Credits.
LECT 3 hrs, LAB 3 hrs
The origin, composition and management of soils, including study of the physical and chemical properties with emphasis on ion exchange processes, soil classification, soil amendments and biological processes that occur in the soil. The lab provides students with the opportunity to learn how to analyze and evaluate soil productivity including nutrient and pH levels as well as texture and structure. The emphasis throughout the course is on the development of problem-solving abilities which can be applied to field work. Students are required to complete a semester project which requires that they analyze the suitability of soils in an assigned area. This course is offered as a face-to-face course which includes an online supplement or as a hybrid online course.
Additional Fees: Course fee applies.

LHT-124. Grounds Maintenance and Development. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course provides students with the skills needed to professionally manage exterior environments. Topics include turf and landscape plant management, irrigation, control of landscape pests, winter property management and maintenance of landscape construction features as well as the maintenance of grounds equipment. This course is offered as a face-to-face course with an online supplement and as a hybrid course.
Additional Fees: Course fee applies.

LHT-121. Landscape Design and Planning I. 3 Credits.
LECT 1 hr, LAB 6 hrs
Class instruction emphasizes the theory, principles and practices of design and planning, effective use of plant materials, artistic consideration of form and function, and basic drawing and drafting techniques. Students learn to apply the design process as a problem-solving technique to produce finished designs. The process of design is a major focus and students are also taught presentation techniques. Sustainable practices are infused throughout the course. This course is offered as a face-to-face course with an online supplement or as a hybrid online course. Student project work is posted online using a free online portfolio system.
Prerequisites: LHT-114 or permission of department chair Additional Fees: Course fee applies.

LHT-212. Landscape Design and Planning II. 3 Credits.
LECT 1 hr, LAB 6 hrs
A continuation of Landscape Design and Planning I. Class instruction focuses on problem-solving for difficult sites, including designing for slopes, sustainability, landscape lighting design, cultural influences on design and specialty garden design. Cost estimation, presentation skills and GPS applications are also covered. This course is offered as a face-to-face course with an online supplement or as a hybrid online course.
Prerequisites: LHT-211 or permission of department chair Additional Fees: Course fee applies.

LHT-215. Plant Pest Management. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Teaches insects, diseases and weeds that are recognized as pests of ornamental plant materials and turf areas. The nature, structure and function of insect body parts, and the growth, habits, injurious effects and life cycles of pest organisms are studied in detail. Pesticides, regulations governing pesticide use and methods of selection and application are discussed with an emphasis on safety. Integrated Pest Management (IPM) techniques are stressed and students apply an understanding of IPM techniques to both greenhouse and landscape management. This course may be eligible for New Jersey Pesticide Recertification credits in both core and selected categories. This course is offered as a face-to-face course with an online supplement and as either a hybrid or online course.
Prerequisites: LHT-110 or LHT-111 or permission of department chair Additional Fees: Course fee applies.

LHT-231. Landscape Construction and Equipment. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Course emphasizes state-of-the-art landscape construction and installation techniques, surveying techniques and the safe operation and maintenance of landscaping equipment. Utilizing the well-equipped Landscape and Horticultural Technology facility, this course provides the student with extensive hands-on instruction in hardscape installation and also focuses on teaching students the value of professional certification programs. This course is offered as a face-to-face course with an online supplement and as a hybrid online course.
Additional Fees: Course fee applies.
LHT-233. Cooperative Agricultural Experience. 3 Credits.
COOP 3 hrs
Recognizing that hands-on, real-work experience is invaluable to LHT students, this course provides students enrolled in the Landscape and Horticultural Technology program with on-the-job training and work experience prior to graduation. In order to successfully complete this course, students must be employed within the landscape or horticultural profession and satisfactorily complete a minimum of 300 hours on the job. Students must have minimum 2.0 GPA and completion of 25 credits in Agribusiness, Landscape Management and Design or Turf and Turfgrass Management programs to be eligible to enroll.
Prerequisites: Permission of department chair.

LHT-234. Landscape and Turf Installation. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is intended to provide students with the skills and knowledge needed to succeed as landscape and turf installers and managers. Skills developed include surveying, understanding grading and drainage, and installation techniques for both landscape plants and turf. This course may be eligible for New Jersey Pesticide Recertification credits in both core and selected categories. This course is offered as a face-to-face course with online enhancements and as a hybrid online course.
Prerequisites: LHT-101 or LHT-110 or LHT-111 or LHT-124 or permission of department chair
Additional Fees: Course fee applies.

LHT-235. Irrigation Systems. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is intended to provide the student with a general understanding of the components, use and function of irrigation systems. By completion of this course, the students are able to operate, maintain and repair irrigation systems. This course is offered as a face-to-face course with an online supplement or as a hybrid course.
Additional Fees: Course fee applies.

LHT-291. Special Topics in Agriculture I. 3 Credits.
LECT 3 hrs
This course is an independent study course which involves students in an individualized course of study designed to fit each student's program of study and career goals. There is an online supplement for this course.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

LHT-292. Special Topics in Agriculture II. 3 Credits.
LECT 3 hrs
This course is the second independent study course of a two semester sequence which involves students in an individualized course of study designed to fit each student's program of study and career goals. There is an online supplement for this course.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

Latin (LAT)

Courses

LAT-111. Elementary Latin I. 3 Credits.
LECT 3 hrs
Not intended for students with two or more years of high school Latin. This course is intended for students with no prior knowledge of, or with limited background in, the language. It includes basic grammar and vocabulary, selected readings with stress on syntax, and the relationship of Latin grammar to English grammar.
Prerequisites: LAT-111 or permission of department chair.

LAT-112. Elementary Latin II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Latin expand their study of basic Latin vocabulary and grammar of an elementary nature. Grammar study includes third and fourth conjugation and third and fourth declension, pluperfect and future tenses, and the ablative case. Vocabulary and grammar support readings with stress on syntax, and the relationship of Latin grammar to English grammar.
Prerequisites: LAT-111 or permission of department chair.

Marketing (MKT)

Courses

MKT-113. Principles of Marketing I. 3 Credits.
LECT 3 hrs
This is an introduction to basic principles and practices in marketing. The course provides an overview of the field of marketing in areas of consumer behavior, marketing management and channels of distribution and emphasizes the growth of the marketing concept.

MKT-114. Principles of Marketing II. 3 Credits.
LECT 3 hrs
This course provides students with a usable managerial understanding of consumer behavior. This will help students prepare for careers in marketing management, sales and advertising.
Prerequisites: MKT-113.

MKT-215. Sales Principles and Practices. 3 Credits.
LECT 3 hrs
This course examines the role of professional selling in the American economy. Topics include: building and maintaining relationships with clients, communication skills, ethical and legal issues, the psychology of selling, and techniques of selling and persuasion. Various selling techniques are learned and simulated sales demonstrations are used to apply theories and techniques.
Prerequisites: MKT-113.

MKT-216. Sales Management. 3 Credits.
LECT 3 hrs
This course explores the application of management principles to marketing departments and personnel, training and supervision of personnel, development of promotion plans and the relationship of the marketing department to the total organization.
Prerequisites: MKT-113.

MKT-218. Advertising. 3 Credits.
LECT 3 hrs, LAB 3 hrs
This course provides a basic understanding of the business of advertising. Topics include the economics of advertising, planning and preparation of advertising, selection of media, establishing advertising objectives, coordination of advertising, sales promotion and display, and developing an advertising budget.
Prerequisites: MKT-113 and ENG-025 or equivalent.
MKT-291. Special Topics in Marketing. 3 Credits.
LECT 3 hrs
This course examines selected topics or issues in marketing.
Topics may differ each time the course is offered and may include areas such as retail marketing, negotiation or marketing research. Students should consult the department chairperson for further information.
Prerequisites: Permission of department chair.

MKT-292. Special Topics in Marketing. 3 Credits.
LECT 3 hrs
This course examines selected topics or issues in marketing.
Topics may differ each time the course is offered and may include areas such as retail marketing, negotiation or marketing research. Students should consult the department chairperson for further information.
Prerequisites: Permission of department chair.

Mathematics (MAT)

Courses

MAT-006. Elements of Algebra. 0 Credits.
LECT 2 hrs, RECI 1 hr
Elements of Algebra integrates the fundamental operations of arithmetic and introductory Algebra. It is intended for students whose placement examination indicates a need for a review of arithmetic and basic Algebra skills. Topics include operations on whole numbers, fractions, decimals, percent and signed numbers, linear equations and inequalities in one variable, operations on polynomials, factoring, integer exponents, and graphing. The course incorporates a Support Lab where students will receive personal assistance with problems or questions assigned as homework to supplement the lectures.
Prerequisites: Appropriate score on a placement test
Additional Fees: Course fee applies.

MAT-007. Foundations of Algebra. 0 Credits.
LECT 2 hrs
This course integrates selected topics of arithmetic and introductory algebra, including operations on whole numbers, fractions, decimals, percent and signed numbers, linear equations and inequalities in one variable, operations on polynomials, factoring, integer exponents, and graphing. Students are required to complete a series of laboratory assignments, which are designed to reinforce concepts based on the placement test results.
Prerequisites: Appropriate score on a placement test.

MAT-009. Basic Mathematics Ia. 0 Credits.
LECT 1 hr
Three (3) hours per day for one week. This is an intensive one-week review of topics typically found on the computation placement test. A passing grade satisfies the Basic Mathematics requirement.
Prerequisites: Appropriate score on a placement test.

MAT-010. Basic Algebra 1A. 0 Credits.
LECT 1 hr
This is an intensive review of topics typically found on the basic algebra placement test. A passing grade satisfies the Basic Algebra requirement.
Prerequisites: Appropriate score on a placement test.

MAT-011. Basic Mathematics Ia. 0 Credits.
LECT 3 hrs
A preparatory course designed for students who need additional practice and review in arithmetic.

MAT-014. Basic Algebra I. 0 Credits.
LECT 3 hrs
A preparatory course in elementary algebra which includes rational numbers, polynomials, algebraic operations, first-degree equations, graphing, systems of linear equations, problem solving and an introduction to the quadratic equations.
Prerequisites: MAT-009 or MAT-011 and permission of department chair.

MAT-016. Intermediate Algebra. 0 Credits.
LECT 3 hrs
A second-level preparatory algebra course designed to prepare students for credit-level mathematics courses. Covered are selected topics, including systems of linear equations, polynomials, factoring, rational expressions, radicals and solving quadratic equations.
Prerequisites: MAT-007 or equivalent Minimum grade P.

MAT-050. Fundamentals of Mathematics. 0 Credits.
LECT 5 hrs
This course integrates selected topics of arithmetic and introductory algebra, including computation, topics in geometry, operations on signed numbers, solving linear equations in one variable, operations on polynomials, factoring, integer exponents and graphing.
Prerequisites: Appropriate score on a placement test.

MAT-060. Fundamentals of Algebra. 0 Credits.
LECT 6 hrs
An intensive one-semester course to prepare students for credit-level mathematics courses. Topics include computation, polynomials, exponents, linear equations, factoring, rational expressions, radicals and solving quadratic equations.
Prerequisites: Appropriate score on a placement test or permission of department chair.

MAT-110. College Algebra. 3 Credits.
LECT 3 hrs
An intensive course designed to prepare students for mathematics courses such as Calculus with Applications to Business and Economics and Precalculus. It covers selected algebra topics including exponents; rational expressions; polynomials, radicals, relations and functions; exponential and logarithmic functions, systems of equations.
Prerequisites: MAT-016 or MAT-060 (grade C or better) or equivalent.

MAT-113. Applied Calculus. 4 Credits.
LECT 4 hrs
A study of topics which provides a basis for continuing courses in mathematics and the physical sciences. This course includes trigonometric, exponential and logarithmic functions; analytic geometry; differentiation and integration.
Prerequisites: MAT-110 or MAT-123 or equivalent.
MAT-117. Mathematical Analysis for Business and Economics. 3 Credits.
LECT 3 hrs
Mathematical topics used in business and economics with emphasis on applications. Covered are polynomials, linear and quadratic models, systems of equations, matrix algebra, and linear programming including the Simplex Method. 
Prerequisites: MAT-016, MAT-060 (grade of C or better) or equivalent.

MAT-118. Calculus With Application to Business And Economics. 3 Credits.
LECT 3 hrs
A course covering functions, derivatives and integration, with special consideration of applications to the business and economics areas. Partial differentiation is introduced. 
Prerequisites: MAT-110 (grade of C or better) or equivalent.

MAT-120. Mathematics for the Liberal Arts. 4 Credits.
LECT 4 hrs
A course addressed to liberal arts students. Topics include the history of mathematics, probability, statistics, geometry, number theory, algebra, graphs and functions, and a choice of selected topics. 
Prerequisites: MAT-007, MAT-014, MAT-050 or equivalent.

MAT-123. Precalculus. 4 Credits.
LECT 4 hrs
An intensive one-semester course to prepare students for Analytic Geometry and Calculus, including absolute values; relations; functions; equations; inequalities; polynomial, rational, trigonometric, inverse trigonometric, exponential and logarithmic functions; trigonometric equations and identities; and graphs. 
Prerequisites: MAT-110 (grade of C or better) or equivalent.

MAT-124. Statistics. 3 Credits.
LECT 3 hrs
The fundamental principles of statistical methods. Descriptive statistics, correlation, regression, probability, binomial and normal distributions, sampling, elementary hypothesis testing, confidence intervals and ethical issues in statistics are included. 
Prerequisites: MAT-016, MAT-060, MAT-120 or equivalent.

MAT-125. Discrete Mathematics. 4 Credits.
LECT 4 hrs
A continuation of Analytic Geometry and Calculus I, which covers the calculus of inverse trigonometric functions, methods of integration, analytic geometry in the plane including polar coordinates and conic sections, hyperbolic functions, sequences and series, and parametric equations. 
Prerequisites: MAT-131 (grade of C or better) or equivalent.

MAT-126. Math for Radiographers. 1 Credit.
LECT 1 hr
This course discusses the math skills that are crucial in the healthcare environment. It teaches the basis measurements, calculations, percents, ratios, and proportions, scientific notation, metric conversions, basis algebraic principles and basic geometric principles used in Radiology. It reviews whole numbers, fractions, decimals and exponents. Radiology units and numeric prefixes are also discussed. 
Prerequisites: MAT-016 or MAT-060 and admission to the Radiography program.

MAT-127. MAT-131 (grade of C or better) or equivalent.

MAT-128. Linear Algebra. 3 Credits.
LECT 3 hrs
Selected topics including matrices and determinants, vectors and vector spaces, linear transformations, eigenvalues and eigenvectors, with applications from a variety of disciplines. 
Prerequisites: MAT-132 (grade of C or better) or equivalent.
MAT-230. Calculus III. 4 Credits.
LECT 4 hrs
A continuation of Analytic Geometry and Calculus II which includes analytic geometry in three dimensions, functions of several variables, partial derivatives, multiple integrals, vectors and an introduction to vector analysis.
Prerequisites: MAT-132 (grade of C or better) or equivalent.

MAT-232. Differential Equations. 3 Credits.
LECT 3 hrs
Ordinary differential equations and methods of solution. Introduction to classical equations and their solutions, with some applications to geometry, physics and engineering.
Prerequisites: MAT-132 (grade of C or better) or equivalent.

MAT-270. Numbers and Operations for Middle Grades. 3 Credits.
LECT 3 hrs
This course prepares middle-grades mathematics teachers with a concrete understanding of numbers, number systems, operations with fractions, decimals and percent; there is special consideration to ratios, proportions, factors and multiples and including instructional techniques and calculator-structured lessons.
Prerequisites: Permission of department chair and Elementary School or N-2 subject matter endorsement.

MAT-271. Algebra for Middle Grades. 3 Credits.
LECT 3 hrs
This course explores topics from pre-algebra and algebra. The course prepares middle-grades mathematics teachers with a concrete understanding of patterns, relationships and functions, polynomials, algebraic operations, first degree equations, graphing and systems of linear equations and linear inequalities and including instructional techniques and calculator-structured lessons.
Prerequisites: Permission of department chair and Elementary School or N-2 subject matter endorsement.

MAT-272. Mathematics for Middle Grades. 3 Credits.
LECT 3 hrs
This course explores topics including history of mathematics, algebra, probability and statistics while infusing instructional techniques and uses of technology.
Prerequisites: Permission of department chair and Elementary School or N-2 subject matter endorsement.

MAT-273. Statistics for Middle Grades. 3 Credits.
LECT 3 hrs
An introduction to statistical methods and reasoning as applied to practical problems. Topics include collecting and summarizing data, histograms and other types of graphs, descriptive statistics, normal distributions, sampling, surveys, use of computers in statistics and interpretation of data.
Prerequisites: Permission of department chair and Elementary School or N-2 subject matter endorsement.

MAT-274. Geometry for Middle Grades. 3 Credits.
LECT 3 hrs
This course includes topics in geometry and measurements with use of Geometer Sketchpad Software. Formulas for perimeter, area, and volume for polygons and polyhedrons, properties of parallel lines and perpendicular lines, fundamental topics of measurements, measurement instruments, measurement errors are covered while infusing instructional techniques.
Prerequisites: Permission of department chair and Elementary School or N-2 subject matter endorsement.

Mechanical Engineering Technology (MEC)

Courses

MEC-104. Statics. 3 Credits.
LECT 3 hrs
This course provides an analysis of force systems acting on particles and rigid bodies; equilibrium in two and three dimensions; trusses, frames and machines; and friction, centroids and moment of inertia of areas.
Prerequisites: MAT-110, ENR-119 and ENR-124.

MEC-109. Manufacturing Process for Engineering Technology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is a study of the methods of prototyping including an introduction to precision measurements, elementary theory of cutting and machining methods with emphasis on the proper operation of the manual lathe and the vertical mill. The course will also provide the student with an introduction to the Computer-Aided Manufacturing (CAM) and the related field of Computerized Numerical Control (CNC). Topics include machine setup, CNC code, both manual and computer assisted, tool offsets and tool changing.
Additional Fees: Course fee applies.

MEC-110. Materials for Engineering Technology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course covers metallic, plastic and ceramic materials that are important to manufacturing. Topics include: molecular and microscopic structures in relationship to material properties, testing of mechanical and thermal properties with reference to ASTM standards, equilibrium diagrams and physical metallurgy emphasizing steel and aluminum, heat treatment of steel, molding and forming methods for plastics. A brief study of ceramics and composites is included.
Prerequisites: MAT-007 or equivalent
Additional Fees: Course fee applies.

MEC-117. Mechanical Prototyping. 2 Credits.
LECT 1.5 hrs, LAB 1.5 hrs
This course is a study of the methods of prototyping including an introduction to precision measurements, elementary theory of cutting and machining methods with emphasis on the lathe operation, milling, drilling and grinding. This course runs for eight weeks.
Additional Fees: Course fee applies.
LECT 1.5 hrs, LAB 1.5 hrs
This course is a study of the methods of Computer-Aided Manufacturing (CAM) and the related field of Computerized Numerical Control (CNC). Topics include machine setup, CNC code, manual and post processed programs, rapid prototyping, tool offsets, and tool changing. This course runs for eight weeks.
Prerequisites: MEC-117 or industrial experience
Additional Fees: Course fee applies.

MEC-141. Strength of Materials for Engineering Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course studies the mathematical determination of stress and deflection for materials having applied loads of normal, shear, torsion, bending or combinations of these. The rational design of mechanical components, such as fasteners, weldments, tanks, shafts, beams and columns, to satisfy stress, deflection and stability criteria are studied. Also included are Mohr’s circle and strain gauge techniques. This course is intended for Engineering Technology students; Engineering Science students should take ENR-230, Engineering Strength of Materials.
Prerequisites: MEC-104 and MAT-110
Additional Fees: Course fee applies.

MEC-155. Mechanical Components. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course develops the fundamentals of sketching, blueprint reading, dimensioning, tolerances, preferred sizes and fits, and evaluating product quality. It also introduces students to the theory of function of mechanical elements such as linkages, cam bearings, gears belt and chain drives, springs, brakes, clutches, welds, keys, fasteners and power screws.
Prerequisites: MAT-007 or equivalent.

MEC-204. Dynamics for Technology. 2 Credits.
LECT 2 hrs
This course provides an understanding of the mathematics of the motion of particles and rigid bodies, and of the relation of forces and motion of particles. Upon successful completion of this course, students will describe the motion of particles and rigid bodies as functions of time and position, develop their equations of motions due to applied forces, and determine post impact behavior.
Prerequisites: MAT-110, MEC-104
Corequisites: PHY-111.

MEC-209. Introduction to Advanced Manufacturing and CNC Programming. 3 Credits.
LECT 2 hrs, LAB 2 hrs
A continuation in the manufacturing process using Computer Numerical Controlled (CNC) milling and turning. Students will learn about and develop advanced manual CNC programs as well as computer-assisted programs (post-processed) derived from CAD (Computer Aided Drafting) drawings. The CNC programs will focus mainly on operations involving three axis milling machines and two axis lathes, but will also touch on operations involving advanced fixture setup and control. Topics will include spindle controls, tool changes, linear and circular interpolation, drilling and tapping, subroutines, and G&M codes. In addition, the course will cover a variety of advanced manufacturing techniques in additive manufacturing (3D Printing), EDM (Electrical Discharge Machining), and reverse engineering techniques using scanners and the CMM (Coordinate Measuring Machine).
Prerequisites: ENR-117 and ((MEC-117 and MEC-118) or MEC-109)
Additional Fees: Course fee applies.

MEC-229. Cooperative Work Experience-Mechanical Engineering Technology. 3 Credits.
COOP 3 hrs
Registration is only upon written recommendation of advisor. This course is a field experience in the laboratory facilities of an industrial firm. It is designed for students in the Mechanical Engineering Technology program to obtain industrial experience as a supplement to college studies prior to career employment. Seminar evaluation visitations are included. Completion of 25 technical credits required to enroll.
Prerequisites: Permission of department chair.

MEC-235. Kinematics. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is a study of moving elements as used in the design and analysis of basic mechanisms in machines. Velocity and acceleration analysis on a plane, design and analysis of 4-bar linkages, cams, gears and other mechanisms using graphical and analytical methods are studied.
Prerequisites: MAT-110
Corequisites: PHY-111
Additional Fees: Course fee applies.

MEC-236. Machine Design. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is the rational design and selection of machine elements considering their economics and manufacturability. The principles of strength of materials and mechanics are applied to the design of bearings, shafts, gears, springs, brakes and other elements of importance in mechanical systems. Consideration of service criteria, operating environment and cost. Emphasis is placed on developing a systematic design philosophy.
Prerequisites: MEC-141
Additional Fees: Course fee applies.
MEC-291. Special Topics in Mechanical Engineering Technology. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in Mechanical Engineering Technology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Mechanical Engineering Technology.

MEC-292. Special Topics in Mechanical Engineering Technology. 3 Credits.
LECT 3 hrs
This course is an examination of selected topics or issues in Mechanical Engineering Technology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Mechanical Engineering Technology.

### Media Studies (MED)

#### Courses

MED-110. Multimedia I. 3 Credits.
LECT 3 hrs
Multimedia I is a survey course designed to allow students to explore, discuss, develop and use multimedia technology. This computer-based course offers an extensive overview of the technologies of multimedia. Students engage in issues related to usability, management and distribution. Topics include multimedia development and design, media elements, and emerging hardware and software trends. A multimedia prototype project that demonstrates conceptual and technical understanding is required.
Additional Fees: Course fee applies.

MED-113. Multimedia II. 3 Credits.
LECT 3 hrs
An advanced course designed to allow students to apply the theory and basic practical knowledge presented in Multimedia I. Students apply their knowledge productions for DVD, local networks or the Internet. Students incorporate traditional media production elements such as video and audio combined with the latest features and technologies. Conceptualization, user interface design and prototyping are key course elements. A multimedia prototype project that demonstrates conceptual and technical understanding is required.
Prerequisites: MED-110
Additional Fees: Course fee applies.

MED-114. Media Aesthetics. 3 Credits.
LECT 3 hrs
Media Aesthetics looks at the importance, influence and meaning of visual images designed for use in electronic media. Through current and historical examples, students learn the principles and significance of media aesthetics including light and color, space and structure, time and motion, and sound, and how they are used to optimize effective communication. Students learn how aesthetic elements of television and multimedia have been translated into vectors - forces that push or pull users in certain directions. Operationally, students learn how to interpret, order, clarify and intensify various communications including fiction, by applying appropriate aesthetic principles. Comparisons between television and multimedia images are closely examined. Students may apply knowledge of media aesthetics by producing projects using broadcast and digital media facilities.
Additional Fees: Course fee applies.

MED-117. Introduction to Broadcasting. 3 Credits.
LECT 3 hrs
This course offers a historical and content analysis approach to the study of broadcast and narrowcast communications. Included are the research and study of systems, regulations, program genres, social effects on audiences, and the future of the industry. This is accomplished via lectures and discussions, handouts, reading assignments and in-class viewing and listening assignments.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

MED-119. Digital Media Production. 3 Credits.
LECT 3 hrs
This course provides students with theory and training in the area of digital content development for digital media productions. Software and hardware training in digital video, audio, animation and graphics are introduced. In addition, the appropriate use of these areas of content in developing digital media productions and interface design are discussed.
Additional Fees: Course fee applies.

MED-210. Digital Video Editing. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Through hands-on learning, Digital Video Editing provides students with the fundamental principles of video editing with a focus on the techniques and technology used to achieve a superior final product. An in-depth exploration of non-linear editing concepts includes a deeper understanding of primary, secondary and tertiary motion, shot types, sequencing, transitions and continuity. Students learn to log and capture raw video, assemble shots on a timeline, create, add, and edit text, audio tracks, title animation, effects, transitions, continuity and video compositing. This course is ideal for students who wish to create and edit a professional video for broadcast, webcast and other motion media venues.
Prerequisites: MED-113 or MED-211
Additional Fees: Course fee applies.

MED-211. Television Production I. 3 Credits.
LECT 3 hrs
This course introduces students to the basic operation of a television studio and the production process. Students learn techniques and develop skills in various studio functions including camera, switching, sound, lighting, teleprompter, scriptwriting and directing. Collaboration and teamwork are emphasized.
Additional Fees: Course fee applies.
MED-212. Television Production II. 3 Credits.
LECT 3 hrs
Students employ skills learned in Television Production I and learn advanced production skills including studio and remote producing, remote-location video shooting, digital editing, advanced special FX generation and switching, and set design via a “live on tape” production of an actual television program.
Prerequisites: MED-211 and MED-114
Corequisites: MED-210
Additional Fees: Course fee applies.
MED-213. Multimedia Authoring and Design. 3 Credits.
LECT 3 hrs
Using industry-standard authoring software, students apply multimedia technology to assemble a real-world interactive multimedia project. Concepts and principles of user interface design, digital audio and video production, team production techniques and usability testing are employed. As members of a production team, students plan, manage and implement a complex multimedia production project to be used on DVD, a local network or the Internet for a participating business partner.
Prerequisites: MED-113
Additional Fees: Course fee applies.
MED-218. Video Magazine Production. 3 Credits.
LECT 3 hrs
Instruction and practice in news gathering and writing news stories for a video magazine, analysis of commercial video magazines and production of video magazines including graphics and post-production experience are objectives of this advanced media course.
Prerequisites: MED-211 or permission of instructor.
MED-220. Animation. 3 Credits.
LECT 3 hrs
This is an advanced production course utilizing 3D modeling and animation software to create animated imagery for video and multimedia applications. Software includes 3D Studio Max (3D animation) and Adobe Premiere and AfterEffects (digital video). Through assigned projects, students learn to combine live video and animation with compositing and bluescreening techniques.
Additional Fees: Course fee applies.
MED-224. Independent Study in Media. 3 Credits.
LECT 3 hrs
Students, in consultation with a media advisor, undertake an indepth analysis of a selected topic, problem or issue related to media or pursue additional media-related work experience. Students are responsible for developing a statement of goals, maintaining a weekly log and preparing a written and oral summary report. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.
MED-226. Cooperative Work Experience- Media Stud. 3 Credits.
COOP 3 hrs
Actual applications of classroom learning in a supervised on-the-job training experience takes place daily. Students pursue their career objectives in the broadcasting arts or digital media area following a training plan with the assistance of the department chair and on-the-job supervisor. Interested students should consult with the Department of Information Technologies chair. Available only to Digital Media Technology majors.
Prerequisites: MED-212 or MED-213
Corequisites: MED-228.
MED-229. Cooperative Work Experience-Media Related Class. 1 Credit.
LECT 1 hr
This course provides a variety of exercises that further develop students' technical skills, occupational adjustment and career development competencies. Exercises help to develop interpersonal and communication skills and help to ensure a positive cooperative work experience. This course is offered online. Available only Digital Media Technology majors.
Prerequisites: MED-212 or MED-213
Corequisites: MED-229.
MED-230. Media Internship. 3 Credits.
LECT 3 hrs
Practical experience in the media career field is gained working part-time in an approved, supervised media-related environment or on an approved media-related project under the supervision of a media instructor and/or on-the-job supervisor. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair.
MED-240. Advanced Animation. 3 Credits.
LECT 3 hrs
This advanced-level course is a continuation of MED-220 Animation and is designed to expose students to high-end 3-D modeling tools for digital animation, electronic post-production, digital special effects and digital multimedia. This course explores advanced applications in digital compositing, particle systems, Newtonian algorithms, kinemation, dynamation and 3-D characters.
Prerequisites: MED-220
Additional Fees: Course fee applies.
MED-291. Special Topics in Media. 1 Credit.
LECT 3 hrs
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.
MED-292. Special Topics in Media. 3 Credits.
LECT 1 hr
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.
MED-293. Special Topics in Media. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in media. Topics may differ each time the course(s) is/are offered. Students should consult the department chair for further information. Available only to Digital Media Technology majors.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

Music (MUS)

Courses

MUS-011. Basic Musicianship I. 0 Credits.
LECT 3 hrs
Requirement for Music Majors who do not pass the Music Theory I, MUS-117, placement exam. A pre-music theory course designed to develop reading skills through keyboard, sight-singing and ear-training. This course may not be used as a curriculum requirement for any major. Students must pass this course or an equivalent Music Theory placement exam to register for MUS-117 Theory I.

LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence planned to develop vocal ability and emphasizes vocal techniques, diction and sight-reading.
Prerequisites: Permission of department chair.

MUS-110. Applied Music Secondary-Voice II. 1 Credit.
LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence planned to develop vocal ability and emphasizes vocal techniques, diction and sight-reading.
Prerequisites: MUS-109.

MUS-112. Introduction to Electronic Music. 3 Credits.
LECT 3 hrs
An exploration of the physical properties of sound, synthesizers, music recording, music arrangement, and the history of electronic music.
Additional Fees: Course fee applies.

MUS-114. American Music. 3 Credits.
LECT 3 hrs
A survey of American Roots music from the 19th century to the present. Early Anglo and African influences are presented followed by 20th century folk, gospel, Hispanic, various styles of country, bluegrass and related acoustic music, various styles of blues and jazz, Cajun and zydeco, early R&B, soul and the beginnings of rock and roll.

MUS-117. Music Theory I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. This course is designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.
Prerequisites: MUS-011 or permission of department chair For Music Students Only
Corequisites: (MUS-125 or MUS-109) and MUS-135.

MUS-118. Music Theory II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. This course is designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.
Prerequisites: MUS-117 For Music Students Only
Corequisites: (MUS-126 or MUS-110) and MUS-136.

MUS-124. Electronic Music II. 3 Credits.
LECT 3 hrs
This course is a continuation of Introduction to Electronic Music with increased application of sound systems and MIDI systems. Students produce recorded final projects.
Prerequisites: MUS-112
Additional Fees: Course fee applies.

MUS-125. Applied Music Secondary-Piano I. 1 Credit.
LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence designed to develop keyboard facility and is required of all music emphasis students whose principal instrument is not piano.
Prerequisites: Music Majors only. Permission of department chair
Corequisites: MUS-117 and MUS-135.

MUS-126. Applied Music Secondary-Piano II. 1 Credit.
LECT 1 hr, LAB 2 hrs
This course is a four-semester sequence designed to develop keyboard facility and is required of all music emphasis students whose principal instrument is not piano.
Prerequisites: MUS-125
Corequisites: MUS-118 and MUS-136.

MUS-127. Principles of Strings I. 1 Credit.
LECT 1 hr, LAB 2 hrs
For Music Students only. This course is designed to convey an understanding of the basic technical skills on violin studies with the first position.

MUS-128. Principles of Strings II. 1 Credit.
LECT 1 hr, LAB 2 hrs
For Music Students only. This course is designed to complete the study of basic violin, viola techniques and the understanding of the proper pedagogical approaches.
Prerequisites: MUS-127.

MUS-129. Music in Early Childhood. 3 Credits.
LECT 3 hrs
A course offering students a wide variety of meaningful experiences which provide a foundation for musical growth and understanding of early childhood music. This is a hands-on course in which students must participate.

MUS-133. Development of Musical Theater. 3 Credits.
LECT 3 hrs
This course is an examination of the elements of the musical (singing, acting, dancing, song construction, story development) and an exploration of the beginnings of the musical theater from Europe to Broadway.
MUS-135. Applied Music Primary I. 1 Credit.
LAB 1 hr
For Music emphasis students only. This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis.
Corequisites: (MUS-125 or MUS-109) and MUS-117
Additional Fees: Course fee applies.

MUS-136. Applied Music Primary II. 1 Credit.
LAB 1 hr
This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis.
Prerequisites: MUS-135
Corequisites: (MUS-126 or MUS-110) and MUS-118
Additional Fees: Course fee applies.

MUS-137. Applied Music Primary III. 1 Credit.
LAB 1 hr
This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis.
Prerequisites: MUS-136
Corequisites: (MUS-225 or MUS-209) and MUS-215
Additional Fees: Course fee applies.

MUS-138. Applied Music Primary IV. 1 Credit.
LAB 1 hr
This course consists of one 50-minute private lesson per week (to be arranged) on student's primary instrument (or in voice). Students are expected to attend performance seminars and participate in public recitals. These courses are classical in emphasis.
Prerequisites: MUS-137 For Music Students Only
Corequisites: (MUS-226 or MUS-210) and MUS-216
Additional Fees: Course fee applies.

MUS-139. Wind Ensemble I. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-140. Wind Ensemble II. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-141. Wind Ensemble III. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-142. Wind Ensemble IV. 1 Credit.
LAB 4 hrs
Includes group performance on all instruments with standard and new repertoire. Emphasis is on reading and musicianship. Prior knowledge of instrument is required.

MUS-143. World Music and Culture. 3 Credits.
LECT 3 hrs
A survey of world folk music including material from Asia, the Middle East, Africa, Europe, North and South America. Lectures and discussions are illustrated by recordings, DVDs and online resources. Students may be invited to contribute course subject matter by bringing personally favored music to be studied.

MUS-145. Chamber Choir I. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-146. Chamber Choir II. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-147. Chamber Choir III. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-148. Chamber Choir IV. 1 Credit.
LAB 4 hrs
Required of all students in Curriculum 1190 and 2006. Includes performance of selected sacred and secular vocal chamber music. Students must have advanced vocal and technical ability. Participation in concerts and other scheduled appearances is required. Memorization is required.

MUS-150. Jazz History and Styles. 3 Credits.
LECT 3 hrs
A survey of world folk music including material from Asia, the Middle East, Africa, Europe, North and South America. Lectures and discussions are illustrated by recordings, DVDs and online resources. Students may be invited to contribute course subject matter by bringing personally favored music to be studied.

MUS-152. Piano I. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios, and simple accompaniments. Keyboard experience is not required. Course is designed specifically for the non-music major.

MUS-153. Piano II. 1 Credit.
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios, and simple accompaniments. Keyboard experience is not required. Course is designed specifically for the non-music major.
MUS-154. Piano III. 1 Credit.  
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios and simple accompaniments. Keyboard experience is not required.  
Course designed specifically for the non-music major.

MUS-155. Piano IV. 1 Credit.  
LECT 1 hr, LAB 2 hrs
For non-music majors. Group lessons in the fundamentals of piano playing. This course includes the study of scales, arpeggios and simple accompaniments. Keyboard experience is not required.  
Course designed specifically for the non-music major.

MUS-159. Guitar I. 1 Credit.  
LECT 1 hr, LAB 2 hrs
Open to all students. Group guitar instruction in fundamental guitar techniques. Studies include plectrum and finger style, position reading, scales and chord construction. Course designed to accommodate non-guitar music students as well as non-music majors.

MUS-160. Guitar II. 1 Credit.  
LECT 1 hr, LAB 2 hrs
Open to all students. Group guitar instruction in fundamental guitar techniques. Studies include plectrum and finger style, position reading, scales and chord construction. Course designed to accommodate non-guitar music students as well as non-music majors.

MUS-163. Rock History and Culture. 3 Credits.  
LECT 3 hrs
This course traces the evolution of rock music from 1955 to the present and examines the cultural impact of the music form on contemporary society.

MUS-165. Introduction to Music Recording. 3 Credits.  
LECT 3 hrs
An introduction to the commercial recording studio. Students explore the equipment and techniques used in the recording of various types of contemporary music. Topics include studio acoustics and design, sound and hearing, microphones and microphone technique, recording console and signal flow, analog and digital recording systems, and signal processing. Students receive hands-on experience on both analog and digital recording equipment during in-class demonstrations and workshops.

Additional Fees: Course fee applies.

MUS-166. Introduction to Music Business. 3 Credits.  
LECT 3 hrs
A general overview of all areas of music business including demo tape promotion, contracts, managers, copyright laws and publishing. Guest lecturers include prominent industry lawyers and agents.

MUS-167. Music Recording II. 3 Credits.  
LECT 3 hrs
A continuation of MUS-165 Introduction to Music Recording in which students explore more complex recording situations through individual student projects. Students receive hands-on experience in session set-up, miking, use of outboard signal processing, mixing and production.

Prerequisites: MUS-165  
Corequisites: MUS-180  
Additional Fees: Course fee applies.

MUS-170. Symphony Orchestra I. 1 Credit.  
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-171. Symphony Orchestra II. 1 Credit.  
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-172. Symphony Orchestra III. 1 Credit.  
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-173. Symphony Orchestra IV. 1 Credit.  
LAB 4 hrs
Includes performance of the classical symphonic repertoire for full orchestra. Rehearsals are held one evening a week. Prior knowledge of instrument is required.

MUS-176. Aural Comprehension I. 1 Credit.  
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.

Additional Fees: Course fee applies.

MUS-177. Aural Comprehension II. 1 Credit.  
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.

Additional Fees: Course fee applies.

MUS-178. Aural Comprehension III. 1 Credit.  
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.

Additional Fees: Course fee applies.

MUS-179. Aural Comprehension IV. 1 Credit.  
LECT 1 hr, LAB 2 hrs
An intensive aural experience designed to develop ear training skills through classroom activities and computer-based work stations.

Additional Fees: Course fee applies.

MUS-180. Microphone Techniques. 2 Credits.  
LECT 1 hr, LAB 3 hrs
An in-depth study of the different techniques used for miking an array of instruments from woodwinds, brass and strings, to drums and electric instruments. Students study the design of dynamic and condenser microphones, special microphones used for certain instruments, sound comparison between different types of microphones and microphone placement on instruments.

Prerequisites: MUS-165  
Corequisites: MUS-167  
Additional Fees: Course fee applies.
MUS-182. Audio Production Techniques. 1 Credit.
LECT 1 hr
An examination of the production techniques used in the recording of contemporary and classic music. The course focuses on the development of critical listening skills, as well as the use of different recording and mixing techniques in an effort to enhance the overall production value of a recording. Students produce a sound-alike project in which they must emulate the sound of a preexisting recording.
Prerequisites: MUS-165, MUS-167, MUS-180
Additional Fees: Course fee applies.

MUS-184. Musical Theatre Production and Performance. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Musical Theatre Production and Performance offers demanding training designed to prepare students for a career in musical theatre. Students participate in all aspects of the production from technical elements to a final performance.

MUS-201. Jazz Ensemble I. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-202. Jazz Ensemble II. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-203. Jazz Ensemble III. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-204. Jazz Ensemble IV. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for experienced instrumentalists to study and perform standard and current jazz literature. Prior knowledge of instrument is required.

MUS-205. Applied Music Secondary-Voice III. 1 Credit.
LECT 1 hr, LAB 2 hrs
A four-semester sequence planned to develop vocal ability. The course emphasizes vocal techniques, diction and sight-reading.
Prerequisites: MUS-110.

LECT 1 hr, LAB 2 hrs
For Music students only. A four-semester sequence planned to develop vocal ability. This course emphasizes vocal techniques, diction and sight-reading.
Prerequisites: MUS-205 or permission of department chair.

MUS-214. Form and Analysis. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A study of larger forms which have evolved throughout music history. Emphasis is placed on score reading of symphonies, large choral works, operas, chamber works and sonata repertoire.
Prerequisites: MUS-117, MUS-118, MUS-215, MUS-216.

MUS-215. Music Theory III. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. Designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.
Prerequisites: MUS-118 For Music Students Only
Corequisites: (MUS-225 or MUS-210) and MUS-137.

MUS-216. Music Theory IV. 3 Credits.
LECT 2 hrs, LAB 3 hrs
For Music Students only. Designed to stress the fundamentals of musicianship including the basic elements of sight-singing, ear-training, writing, playing, terminology and form analysis.
Prerequisites: MUS-215 For Music Students Only
Corequisites: (MUS-226 or MUS-210) and MUS-138.

MUS-217. Music History and Literature to 1750. 3 Credits.
LECT 3 hrs
An in-depth study of music in Western civilization from ancient times through the Baroque period. Music from each period is discussed and analyzed.

MUS-218. Music History and Literature From 1750. 3 Credits.
LECT 3 hrs
A continuation of Music History and Literature from 1750. A study of music from the late Baroque through the Romantic period. Includes analysis of representative works.

MUS-221. Chamber Ensemble I. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged.
Students must play a wind, percussion, string or keyboard instrument.

MUS-222. Chamber Ensemble II. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged.
Students must play a wind, percussion, string or keyboard instrument.

MUS-223. Chamber Ensemble III. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged.
Students must play a wind, percussion, string or keyboard instrument.

MUS-224. Chamber Ensemble IV. 1 Credit.
LAB 4 hrs
Designed to provide an opportunity for players of wind, string, percussion and keyboard instruments to study, rehearse and perform selected works from chamber music literature (consisting of two to 10 players per ensemble). Sessions must be arranged.
Students must play a wind, percussion, string or keyboard instrument.
MUS-225. Applied Music Secondary-Piano III. 1 Credit.
LECT 1 hr, LAB 2 hrs
A four-semester sequence designed to develop keyboard facility.
Required of all music emphasis students whose principal instrument
is not piano.
Prerequisites: MUS-126
Corequisites: MUS-137 and MUS-215.

MUS-226. Applied Music Secondary - Piano IV. 1 Credit.
LECT 1 hr, LAB 2 hrs
For Music Students only. A four-semester sequence designed to
develop keyboard facility. Required of all music emphasis students
whose principal instrument is not piano.
Prerequisites: MUS-225 - Music Majors Only

MUS-227. Operetta and Music Theatre I. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students,
through rehearsal and performance, have a chance to have practical
experiences with their art, i.e., staging, conducting, lighting, singing
and general production work.

MUS-228. Operetta and Musical Theatre II. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students,
through rehearsal and performance, have a chance to have practical
experiences with their art, i.e., staging, conducting, lighting, singing
and general production work.

MUS-229. Operetta and Musical Theatre III. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students,
through rehearsal and performance, have a chance to have practical
experiences with their art, i.e., staging, conducting, lighting, singing
and general production work.

MUS-230. Operetta and Musical Theatre IV. 1 Credit.
LAB 4 hrs
A theatrical production is the final objective in the course. Students,
through rehearsal and performance, have a chance to have practical
experiences with their art, i.e., staging, conducting, lighting, singing
and general production work.

MUS-233. Independent Study in Music. 1 Credit.
LECT 1 hr
For Music Students only. This course is designed to allow students
who have a specialized interest or who are pursuing a topic at an
advanced level to engage in rigorous individualized study. The study
must be designed by the faculty member and student and must be
approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-234. Independent Study in Music. 3 Credits.
LECT 3 hrs
For Music Students only. Independent Study in Music is designed to
allow students who have a specialized interest or who are pursuing
a topic at an advanced level to engage in rigorous individualized
study. The study must be designed by the student and a faculty
member and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-237. Cabaret Music Theatre. 1 Credit.
LAB 4 hrs
This course in cabaret theatre considers the revue-type of theatrical
production which has been popularized in productions in New York,
Chicago, Los Angeles and on many college campuses throughout
the country. A cabaret musical revue is the final project.

MUS-238. Cabaret Music Theatre II. 1 Credit.
LAB 4 hrs
This course in cabaret theatre considers the revue-type of theatrical
production which has been popularized in productions in New York,
Chicago, Los Angeles and on many college campuses throughout
the country. A cabaret musical revue is the final project.

MUS-240. Jazz Guitar. 1 Credit.
LECT 1 hr, LAB 2 hrs
This course is recommended for guitar majors, jazz ensemble
guitarists or those with equivalent skills. It covers harmonic and
melodic aspects of jazz improvisation in a solo or ensemble
setting. Topics include modes, arpeggios and chord structure, and
inversions of seventh chords in all keys. Students must already
have a working knowledge of the guitar, i.e., bar chords, major/
minor scales, some experience with notes and chord symbols. While
this is not a class for beginner guitarists, beginner jazz players are
welcome.

MUS-243. Musical Theatre Auditions. 3 Credits.
LECT 3 hrs
This course introduces the students to the preliminary work involved
in the techniques of auditioning. The protocol of auditioning,
including resume, agents, casting directors, scene reading and
actual vocal selections, are covered in class.

MUS-244. Independent Study in Electronic Music I. 1 Credit.
LECT 1 hr
This course is an exploration of analog synthesis techniques and
devices designed to allow the student to pursue specialized topics to
an advanced level. The study is project oriented.
Prerequisites: MUS-112, MUS-124
Additional Fees: Course fee applies.

MUS-245. Independent Study in Electronic Music II. 1 Credit.
LECT 1 hr
This course is an exploration of the computer-based music
workstation and digital technology designed to allow the student to
pursue specialized topics to an advanced level. The study is project
oriented.
Prerequisites: MUS-112, MUS-124, MUS-244
Additional Fees: Course fee applies.

MUS-248. Enjoyment of Music. 3 Credits.
LECT 3 hrs
Emphasis is placed on experiencing, discussing and realizing
various musical styles throughout history to the present time. All
music from the ancient to even today’s most popular styles are
covered, but with specific attention given to how to listen and
appreciate each musical genre. Students may even be invited to
contribute to the course content by bringing personally favored
music to be studied.
MUS-249. Practicum. 1 Credit.
LECT 1 hr
For Music Students only. Weekly lessons in a one-to-one or small group arrangement with a faculty member prepares the student in the techniques of professional music recording. Appropriate projects are assigned to help the individual student develop his or her recording skills in various situations and with various types of equipment. A finished project is produced by the student and judged in a jury session.
Prerequisites: MUS-165, MUS-167, MUS-180, MUS-182, MUS-259
Additional Fees: Course fee applies.

MUS-250. Internship in Music Recording. 1 Credit.
LECT 1 hr
For Music students only. This course assigns the student to experience the actual working conditions in an established music recording studio facility. With the cooperation of the facility director, appropriate work projects are assigned and the student judged on his or her level of knowledge, expertise and confidence in the various aspects of the music recording business.
Prerequisites: MUS-165, MUS-167, MUS-180, MUS-182, MUS-259
Additional Fees: Course fee applies.

MUS-253. Independent Study in Music II. 1 Credit.
LECT 1 hr
For Music Emphasis students only. Independent Study in Music is designed to allow the student who has a specialized interest in or who is pursuing a topic at an advanced level to engage in rigorous individualized study. The study plan must be designed by the student and a faculty member and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-254. Independent Study in Music III. 1 Credit.
LECT 1 hr
For Music Emphasis students only. Independent Study in Music is designed to allow the student who has a specialized interest or who is pursuing a topic at an advanced level to engage in rigorous individualized study. The study plan must be designed by the student and a faculty member and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-256. Contemporary Music: 20th-21st Century. 3 Credits.
LECT 3 hrs
A study of the musical trends, idioms, styles and aesthetics of the Classical Music, Jazz, Rock, Latin Music, and Film Music of the 20th and 21st centuries. In addition to the study of the literature, students will be broadly educated on the fundamental elements of music including melody, harmony, counterpoint, musical forms, texture, and orchestration. Students may be invited to contribute subject matter by bringing personally favored music of the 20th and 21st centuries to be studied, analyzed, and discussed.

MUS-259. Hard Disc Recording. 2 Credits.
LECT 1 hr, LAB 3 hrs
Students learn about the operation and application of AVID Pro Tools hard disk recording and editing software. Topics include signal flow and routing, editing, fades and cross fades, digital signal processing, mixing, and automation.
Prerequisites: MUS-165, MUS-167 and MUS-180 or MUS-165, MUS-112 and MUS-124
Additional Fees: Course fee applies.

MUS-291. Special Topics in Music. 3 Credits.
LECT 3 hrs
A broad-based review of musical topics ranging from a continuation of sight singing, ear training and keyboard harmony to technology-based courses such as Live Sound, and Music for Film.
Prerequisites: Permission of department chair.

MUS-292. Special Topics in Music. 3 Credits.
LECT 3 hrs
A broad-based review of musical topics ranging from a continuation of sight singing, ear training and keyboard harmony to technology-based courses such as Live Sound, and Music for Film.
Prerequisites: Permission of department chair.

Nursing (NUR)

Courses

NUR-012. Nursing Transition: Advanced Placement Status. 0 Credits.
LAB 2 hrs
This is a mandatory pre-requisite course required of all students granted advanced placement, prior to starting NUR-123, Basic Medical/Surgical Nursing. Emphasis is placed on the conceptual framework of the CCM Nursing program, use of the nursing process, communication skills, ethical and legal issues, and the role of the registered professional nurse. Physical assessment, patient safety, dosage calculation and medication administration are also reviewed and tested in a simulated laboratory environment. This course is a mandatory component in the advanced placement process and is designed to assess readiness and facilitate a smooth transition for the student.
Prerequisites: Advanced Placement students must meet admission criteria established by department.

NUR-105. Foundations of Nursing. 1 Credit.
LECT 1 hr
This course provides the foundational concepts on which nursing education and practice are built. Students apply basic knowledge of these concepts as they begin to learn the practice of nursing. Historical, sociocultural, ethical and legal tenets are studied. Students gain an appreciation for the profession of nursing as well as awareness of the responsibility and accountability expected. This course is offered as a traditional face-to-face, hybrid online or online course.
Prerequisites: Acceptance into NUR-121 and permission of department chair
Corequisites: NUR-121 and BIO-101.
NUR-106. Medical Terminology. 2 Credits.
LECT 2 hrs
This course is an online class with assignments and quizzes taken online. Mid-term and final exams are taken on campus at CCM. The course is open to any student interested in learning the basic construction of medical words. Students acquire a solid foundation to aid in retention of medical vocabulary and facilitate understanding of new terms. Prefixes, suffixes and root words are introduced in a logical manner. A brief outline of the anatomy and physiology of each body system is presented, followed by the related pathophysiology. Included are terms describing diseases, disorders and related surgical, diagnostic and treatment terms. Students become proficient in word building and recognition of medical terms as they relate to anatomy and physiology. Students become familiar with terminology relevant to pharmacology as well as psychiatry.

NUR-121. Fundamentals of Nursing. 6 Credits.
LECT 3 hrs, LAB 3 hrs, CLIN 6 hrs
This course serves as the foundation for all subsequent nursing courses. The nursing process is introduced with concentration on the assessment of man's basic health needs, which are identified as psychosocial, elimination, rest and activity, safe environment, oxygen and nutrition. The development and use of fundamental nursing skills and interventions are included. Concepts of clinical decision-making skills are introduced. Learning experiences are planned, using the classroom, campus laboratory and community clinical facilities.
Prerequisites: Permission of department chair
Corequisites: BIO-101 and NUR-105
Additional Fees: Course fee applies.

NUR-123. Basic Medical/Surgical Nursing. 10 Credits.
LECT 6 hrs, CLIN 12 hrs
This course focuses on the study of adults with a variety of commonly occurring medical-surgical problems that interfere with the ability to meet basic health needs. Students utilize the nursing process to prioritize and provide appropriate nursing interventions for patients with higher acuity. Students use assessment skills to develop appropriate nursing diagnoses, outcomes and plans of care. Related theory, therapeutic communication skills and nursing care skills are employed in the provision of patient care in clinical facilities. Clinical decision-making skills are further developed.
Prerequisites: BIO-101, NUR-105, NUR-121 and permission of department chair
Corequisites: BIO-102 and CHM-117 or CHM-125
Additional Fees: Course fee applies.

NUR-213. Maternal-Child/Mental Health Nursing. 10 Credits.
LECT 6 hrs, CLIN 12 hrs
The focus of this course shifts from the study of the adult as an individual to that of the family and community. Concentration is placed on the health needs/problems of psychiatric and maternal/child patients. Utilization of the nursing process with special populations to address patient problems is provided across a range of healthcare settings. Knowledge of community, psychiatric, and maternal/child nursing is developed through clinical decision-making skills, group projects, case studies and clinical experiences.
Prerequisites: NUR-123, BIO-101, BIO-102, CHM-117 or CHM-125 and permission of department chair
Corequisites: BIO-215
Additional Fees: Course fee applies.

NUR-214. Advanced Medical/Surgical Nursing. 10 Credits.
LECT 6 hrs, CLIN 12 hrs
This course provides students with the ability to further develop and apply clinical decision-making skills to patient care. The PERSON approach is utilized to provide care for patients with health problems resulting when the ability to meet one or more health needs is severely compromised. Evaluation of the outcomes of care given is a significant focus. Appropriate learning experiences are planned involving patients with multiple acute and chronic problems using the classroom, campus laboratory and various health care facilities.
Prerequisites: NUR-213, BIO-215 and permission of department chair
Corequisites: NUR-224
Additional Fees: Course fee applies.

NUR-220. Pharmacology for the Health Professional. 3 Credits.
LECT 3 hrs
This course is an online class with assignments and quizzes taken online. Midterm and final exams are taken on campus at CCM. The course is organized by drug classifications and emphasizes current usage, dosage recommendations, interactions, and implications for illness prevention and management. This course is useful for any professional who administers medications or who works with clients for whom medications are a treatment modality.

NUR-224. Nursing Colloquium. 1 Credit.
LECT 1 hr
This course involves an examination of selected topics and issues that students in the final semester of the professional phase of the Nursing Program will experience as they transition from the role of student nurse to graduate nurse. Topics concerning professional development and preparation for the workplace are addressed. Ethical, legal and professional issues that impact the practice of the graduate nurse are examined.
Prerequisites: NUR-213 and permission of department chair
Corequisites: NUR-214.

Packaging Design (PKG)

Courses

PKG-101. Packaging Technology I. 3 Credits.
LECT 2 hrs. LAB 1 hr
An introductory course in the materials and processes used for common household and industrial packaging. Studies will include the folded carton, the materials, the manufacturing process and the sizes and constraints related to their production. The common commercial bottle will be explored as well as packaging materials used in the food and medical industries. Related discussions will go into the concepts and applications of primary and secondary packaging. Basic study of surface finishes to parallel the co-requisite course in Packaging Design I will also be discussed.
Prerequisites: ART-122 and ART-130
Additional Fees: Course fee applies.
PKG-120. Packaging Design I. 3 Credits.
LECT 1 hr, LAB 3 hrs
An introductory course in graphic design methods for common household and industrial packaging. Studies will include graphic design for the folded carton, the materials, sizes, and constraints related to their development. Label design for bottles and containers used in the food and medical industry will be explored. Related discussions will go into the concepts and graphic design applications of primary and secondary packaging. Structural and physical properties to track with the parallel course students are required to take in Packaging Technology I will also be discussed.
Prerequisites: ART-122 and ART-130
Additional Fees: Course fee applies.

PKG-202. Packaging Technology II. 3 Credits.
LECT 2 hrs, LAB 1 hr
A continuing study of advanced materials used in the packaging industry and the advanced processes used to develop them. An emphasis will be placed on studies related to the practice of sustainable packaging and its impact on the environment on a global scale. Pricing and cost efficient practices will be explored as well. Studies will include the folded carton, the materials, the manufacturing process and the sizes and constraints related to their production. The common commercial bottle will be explored as well as packaging materials used in the food and medical industry. Related discussions will go into the concepts and applications of primary and secondary packaging. Intermediate study of surface finishes to parallel the co-requisite course in Packaging Design I will also be discussed.
Prerequisites: PKG-101 and PKG-120
Corequisites: PKG-220
Additional Fees: Course fee applies.

PKG-219. Cad for Packaging Design and Manufacture. 3 Credits.
LECT 2 hrs, LAB 1 hr
CAD for packaging allows everyone from the novice to the professional to create production-ready packaging in a quick and efficient manner. With a focus on folded cartons, students learn to create designs from scratch using an extensive library of packaging templates. Course work involves designing packaging and 2D and 3D virtual modeling for production. ArtiosCAD is the world's most popular structural design software for packaging design, with dedicated tools specifically designed for packaging professionals for structural design, product development, virtual prototyping and manufacturing.
Prerequisites: PKG-101 and PKG-120 or permission of department chair
Additional Fees: Course fee applies.

PKG-220. Packaging Design II. 3 Credits.
LECT 2 hrs, LAB 1 hr
An intermediate course in graphic design methods for common household and industrial packaging. Studies will include graphic design for the folded carton, the materials, sizes, and constraints related to their development. Label design for bottles and containers used in the food and medical industries will be explored. Related discussions will go into the concepts and graphic design applications of primary and secondary packaging. To track with the parallel course students are required to take, Packaging Technology II, structural and physical properties will also be discussed. Packaging graphics and form will be explored from a global perspective.
Prerequisites: PKG-101 and PKG-120
Corequisites: PKG-202
Additional Fees: Course fee applies.

Philosophy (PHL)

Courses

PHL-111. Introduction to Philosophy. 3 Credits.
LECT 3 hrs
An introduction to major themes of Western and Asian philosophical thought designed to give the student a grasp of the fundamental option which reflective persons face between opposing views of the world. The way in which this option was formed is traced, and the manner is shown in which this choice influences one's thinking about topics such as the nature of the self, truth, religion, morality and government.
Prerequisites: Placement basis or ENG-025 or ENG-007 or ENG-022.

PHL-114. Ethics. 3 Credits.
LECT 3 hrs
A survey of the most influential efforts of philosophers from diverse traditions to bring reason into the process of making appropriate and adequate choices in matters basic to the flourishing of human beings. Contemporary problems analyzed include end-of-life, reproductive, genetic engineering, punishment, business and environmental issues.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

PHL-115. Logic. 3 Credits.
LECT 3 hrs
Logic is the study of reasoning, good and bad. Good reasoning moves from credible statements to others that are well supported by them. Bad reasoning obscures this process. This course examines features that make reasoning good or bad, develops critical skills in recognizing formal and informal patterns of reasoning, and deepens one's talent in constructing arguments that exemplify good reasoning.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025.

PHL-180. Introduction to Philosophy-Honor. 3 Credits.
LECT 3 hrs
This seminar follows, conceptually and historically, dominant lines of philosophical thinking on themes widely taken to be fundamental in Western and Asian culture. The course also compares and contrasts classical with contemporary perspectives.
Prerequisites: Permission of department chair or honors advisor.
PHL-210. American Philosophy. 3 Credits.
LECT 3 hrs
This course surveys important ideas, perspectives, and theories in the writings of prominent 19th and 20th century American philosophers, focusing on the classical pragmatism of Peirce, James, Dewey, and Mead. We will examine the larger intellectual and cultural context of American thought, referencing pivotal historical, legal, and intellectual events and traditions, especially the Civil War, Transcendentalism, and Darwinian evolutionary biology. This course aims to provide an understanding of the classical American pragmatist tradition and the relation of American philosophy to the history of philosophy and to American culture. Of central importance is the pragmatist connection between theory and action, that is, the effort not merely to make thought practical, but to make our practices, and our lives, intelligent.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025.

PHL-211. Philosophy of the Person. 3 Credits.
LECT 3 hrs
A lecture-discussion course of classical readings from religious and humanist authors centering on related notions of human nature, person, self, self-actualization and freedom. An effort is made to assess some social policies by reference to an adequate notion of the person.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

PHL-212. Philosophy and Religion. 3 Credits.
LECT 3 hrs
This course surveys the development and interaction of world religions, such as Judaism, Christianity, Islam, African religions, Hinduism, Buddhism, Confucianism, Taoism and Shintosim. It examines major figures, stories, rituals and beliefs of the religions, and shows how they shape the lives of believers. Finally, it analyzes philosophical concepts such as God and gods, faith and reason, immortality, good and evil, karma, love, meditation, mysticism and nirvana.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

PHL-221. Philosophy of Plato. 3 Credits.
LECT 3 hrs
Concentrated readings and in-depth discussion of several of the great dialogues of Plato, chosen from the following: Meno, Republic, Laws, Phaedo, Symposium, Phaedrus, Apology and Crito.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

PHL-280. Ancient Philosophy-Honors. 3 Credits.
LECT 3 hrs
This seminar critically examines the central ideas of Plato and Aristotle on knowledge, mind, body, freedom, nature, ethics, politics and religion. The course also contrasts their ideas with those of other ancient philosophers, such as Pythagoras, Heraclitus, Parmenides, Zeno, Epicurus, Epictetus, Cicero and Aurelius. Students develop the ability to formulate their own views on philosophic issues.
Prerequisites: Permission of department chair or honors advisor.

Photography (PHO)

PHO-110. Photography Appreciation. 3 Credits.
LECT 3 hrs
Through lectures, discussions, written analysis, projects and presentations, the student will gain an understanding and appreciation of the global and cultural impact of photography. Students focus on the formal development of photography and the role it plays in social and cultural production, gaining insight into how photographs produce visual representations across cultures and reflect social values. Students learn the fundamental visual elements of photographic form, critical skills necessary to interpret a variety of visual representations and to enhance visual literacy. Note: This is a lecture based course, not a studio art course and is not acceptable for majors of Photography, Graphic Design, or Fine Arts.

PHO-113. History of Photography. 3 Credits.
LECT 2 hrs, LAB 2 hrs
A survey of photographic history from its origin to the present day. Topics include the invention of photography, the photograph as document, the photograph as art, the natural landscape, the portrait, color photography and contemporary photography. Course requirements may include extensive use of Blackboard and other online components.

PHO-114. Photographic Processes. 3 Credits.
LECT 2 hrs, LAB 2 hrs
A studio course covering historical, traditional and digital photographic processes. The range topics for this course will include basic scientific principles regarding optics, the physics of light, camera design and reproduction problems. Lectures will identify and explain topics related to course content. Studio exercises will develop and reinforce the theoretical knowledge through practice in the shooting studio or darkroom. Students will work on a number of projects individually and in groups, during class time and open lab hours. This lab/studio environment will help students understand the course material through practice, exploration, and problem solving situations. The course will prepare students to apply scientific knowledge in an effective way by completing a summary project. Course requirements may include extensive use of Blackboard and other online components, including but not limited to, photo sharing sites.
Prerequisites: PHO-115 and MAT-007.

PHO-115. Photography I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A beginning photography studio course emphasizing the fundamentals of photographic language, digital camera systems and creative visual problem solving. Students will become familiar with the concept of the digital darkroom using image editing photographic production tools. Course requirements may include extensive use of Blackboard and other online platforms. The current software programs used in this course are Adobe Lightroom and Photoshop, subject to change based on technology advancement and availability. Note: Each semester there will be a section of PHO-115 designated for Photography Technology majors which will require that the student own or have unrestricted access to both film and digital 35mm cameras. No point and shoot cameras are allowed in this course section.
Additional Fees: Course fee applies.
PHO-116. Photography II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
An intermediate black and white photography course introducing the student to medium and large format camera systems in both commercial and fine art applications. Darkroom and digital technologies are covered in this course.
Prerequisites: PHO-115
Additional Fees: Course fee applies.

PHO-117. Color Photography I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
An introduction to color photographic materials. Topics include color perception, composition/design and color technology. Color theory, conventional image processing and digital image processing are covered. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Prerequisites: PHO-115
Additional Fees: Course fee applies.

PHO-119. Contemporary Photography. 3 Credits.
LECT 3 hrs
An in-depth look at photography and photographers practicing since 1950. Students gain an understanding of the philosophies that have shaped the current uses of the photographic image. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Prerequisites: ENG-025.

PHO-204. Digital Imaging I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
An introductory studio course providing an overview of various digital post production software applications used for digital photography. Non-destructive vs. destructive image manipulation, color management, workflow and image compositing basics are several of the topics covered in this course. Current software applications employed in the course include Adobe Photoshop and Adobe Lightroom. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Prerequisites: PHO-115
Additional Fees: Course fee applies.

PHO-216. Studio Lighting I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
An introductory studio course covering the basic concepts and manipulation of artificial lighting for a range of subject matter, camera formats and applications. The course focuses on developing problem-solving skills that address technical and creative methods of crafting an image to achieve a desired goal. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Prerequisites: PHO-115 and PHO-204
Additional Fees: Course fee applies.

PHO-224. Digital Imaging II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This studio course is designed for experienced digital imaging users. Focusing on a semester long project, students learn how different media influence the way we see and capture the world. As technology and the role of the photographer evolve, methods of manipulation and presentation are explored. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Additional Fees: Course fee applies.

PHO-226. Portfolio Preparation. 3 Credits.
LECT 3 hrs
Students prepare a final portfolio, in both print and digital formats, showcasing examples of photographic skills acquired during their course of study in the Photography Technology program. Students focus on presentation, craftsmanship and the development of a personal style. Various outlets and methods of presentation are explored. Formal and informal critiques help students define strengths and career goals. This course should be taken in the student’s final semester. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Prerequisites: PHO-216
Corequisites: PHO-227
Additional Fees: Course fee applies.

PHO-227. Professional Studio Photography. 3 Credits.
LECT 2 hrs, LAB 3 hrs
An advanced studio course focusing on the development of concepts and ideas within a studio environment through a variety of assignments. Emphasis is placed on developing light design strategies for various applications ranging from portraiture to architecture. Technical competency and professionalism are key components of this course. Course requirements may include extensive use of Blackboard and other online components including, but not limited to, photo sharing sites.
Prerequisites: PHO-204 and PHO-216
Additional Fees: Course fee applies.

PHO-228. Cooperative Work Experience-Photography. 3 Credits.
COOP 3 hrs
Open to Photography Technology (3550) majors only. Students work in photography-related jobs, receiving training. Photography Technology faculty members individually supervise students.
Prerequisites: PHO-116
Corequisites: PHO-229.
PHO-229. Cooperative Work Experience- Photography Related Class. 1 Credit.
LECT 1 hr
Open to Photography Technology (Program 3550) majors only. Related class designed to supplement Cooperative Work Experience. Weekly meetings include discussion, written assignments and critical analysis of the work experience.
Prerequisites: PHO-116
Corequisites: PHO-228.

PHO-290. Independent Study I in Photography. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A project designed with a faculty advisor. The student is responsible for developing a statement of goals and objectives and submitting a summary project.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

PHO-291. Special Topics in Photography. 3 Credits.
LECT 2 hrs, LAB 3 hrs
Topics in photography which are not included in the regularly scheduled curriculum. May include studio work, technical topics and/or critique.
Prerequisites: PHO-115
Additional Fees: Course fee applies.

PHY-103. Concepts of Physics. 4 Credits.
LECT 3 hrs, LAB 2 hrs
This is a one-semester examination of the basic concepts of kinematics and dynamics, conservation of energy, heat and selected topics in electricity, magnetism and modern physics.
Prerequisites: MAT-007 or passing score on algebra section of Basic Skills Placement test
Additional Fees: Course fee applies.

PHY-111. Technical Physics I. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This is the first course of a two-semester applied physics course covering particle kinematics, Newton's laws, oscillatory motion, conservation of energy, heat and the gas laws.
Prerequisites: ENR-119, ENR-124 and MAT-110
Additional Fees: Course fee applies.

PHY-112. Technical Physics II. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This is the second course of a two-semester applied physics course covering the essentials of electricity and magnetism, and selected topics from fluid mechanics, wave theory and optics.
Prerequisites: PHY-111
Additional Fees: Course fee applies.

PHY-118. Meteorology. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is an introduction to meteorology. Topics include observing the weather, clouds and precipitation, winds and the circulation of the atmosphere, air masses and fronts, cyclones and anticyclones, historic weather events, hurricanes, thunderstorms and tornadoes, atmospheric stability, weather maps and weather forecasting, radar and Doppler radar, air pollution, climate and seasons. Laboratory work includes the analysis and understanding of weather maps, the measurement of meteorological variables as well as Internet activities.
Prerequisites: MAT-016 or MAT-120 or equivalent Math placement basis
Additional Fees: Course fee applies.

PHY-125. General Physics I - Lecture. 3 Credits.
LECT 3 hrs
This is the first course of a two-semester sequence in general physics. Topics include kinematics and dynamics of translational and rotational motion, conservation of energy, conservation of momentum, fluid statics and dynamics, and heat.
Prerequisites: MAT-123
Corequisites: PHY-126.

PHY-126. General Physics I Laboratory. 1 Credit.
LAB 3 hrs
This is the first course of a two-semester sequence in laboratory physics for students who are enrolled concurrently in General Physics I (PHY-125). Laboratory experiments demonstrate concepts covered in the accompanying lecture course, while introducing techniques of observation, data recording, data analysis and formal communication of experimental results.
Corequisites: PHY-125
Additional Fees: Course fee applies.

PHY-127. General Physics II - Lecture. 3 Credits.
LECT 3 hrs
This is the second course of a two-semester sequence in general physics. Topics include vibratory and wave motion, electricity, magnetism, optics and essentials of modern physics.
Prerequisites: PHY-125 and PHY-126
Corequisites: PHY-128.

PHY-128. General Physics II Laboratory. 1 Credit.
LAB 3 hrs
This is the second course of a two-semester sequence in laboratory physics for students who are enrolled concurrently in General Physics II (PHY-127). Experiments demonstrate concepts covered in the accompanying lecture course, while continuing to develop laboratory skills introduced in PHY-126.
Prerequisites: PHY-126 and PHY-125
Corequisites: PHY-127
Additional Fees: Course fee applies.
PHY-130. Engineering Physics I. 4 Credits.
LECT 4 hrs
This is the first course of a three-semester, calculus-based physics sequence. Topics include particle kinematics in one and in two dimensions, work and energy, impulse and momentum, rotational motion, kinematics and dynamics of rigid bodies and elements of thermodynamics.
Prerequisites: MAT-131
Corequisites: MAT-132.

PHY-133. Engineering Physics II. 4 Credits.
LECT 4 hrs
This is the second course of a three-semester, calculus-based physics sequence. Topics include simple harmonic motion, waves, electromagnetic theory and applications, Maxwell’s equations in integral form.
Prerequisites: PHY-130 and MAT-132
Corequisites: MAT-230 and PHY-134.

PHY-134. Laboratory for Engineering Physics II. 1 Credit.
LAB 3 hrs
This is the first course of a two-semester laboratory sequence designed for students who are enrolled concurrently in the Engineering Physics lecture sequence. The course emphasizes fundamental physics principles through experimentation, principles of experiment design, instrumentation, techniques of observation, data recording, data analysis and formal communication of experimental results. Experiments study selected mechanical, electrical and magnetic phenomena.
Prerequisites: PHY-130
Corequisites: PHY-133
Additional Fees: Course fee applies.

PHY-232. Engineering Physics III. 3 Credits.
LECT 3 hrs
This is the final course of a three-semester, calculus-based physics sequence. Topics include geometric optics, Maxwell’s equations in differential form, electromagnetic radiation and fundamentals of physical optics, the development of the Schroedinger Equation approach to quantum mechanics and selected applications of quantum theory to the understanding of atomic and nuclear structure.
Prerequisites: PHY-133 and MAT-230
Corequisites: PHY-233.

PHY-233. Laboratory for Engineering Physics III. 1 Credit.
LAB 3 hrs
This course is a continuation of the Engineering Physics laboratory sequence. The course continues to develop professional laboratory technique through experiments on selected topics in geometric optics, physical optics and modern physics.
Prerequisites: PHY-134
Corequisites: PHY-232
Additional Fees: Course fee applies.

Political Science (POL)

Courses

POL-111. American Government. 3 Credits.
LECT 3 hrs
A study of the myths and realities of the American political system. The course focuses on the constitutional development of the American system of government, the political, policymaking and implementing structures of American government, and the problem of representative government in the United States. Consideration is given to contemporary domestic and foreign policy issues.
Prerequisites: POL-111.

POL-231. State and Local Government. 3 Credits.
LECT 3 hrs
A survey of the governing structures, politics and policies of local and state governments, with special emphasis on New Jersey. Students become acquainted with many of the major challenges and state issues facing local government today.

POL-240. International Politics. 3 Credits.
LECT 3 hrs
An introduction to the nature and problems of international politics. Analysis and consideration is given to the development and contemporary status of nation-states, their relationships and the elements of power politics. Emphasis is given to problems of war and peace, the nature of conflict and the various approaches to world peace.

POL-245. Comparative Government. 3 Credits.
LECT 3 hrs
An examination of the variety of governmental systems, both western and non-western, whose importance is reflected in the increasing interdependent nature of the world community. The political systems of the traditional European powers (Great Britain, Germany and Russia) and strategically important non-western nation-states (Japan, China, India and Mexico) are reviewed. Trends in government in the developing countries are studied as well.

POL-270. Civil Liberties-Basic Rights and Freedom. 3 Credits.
LECT 3 hrs
An analysis and examination of individual rights within a democratic society. Focus is on such major issues as freedom of expression and religion, political and racial equality, privacy rights, and the Bill of Rights and its applicability to the states. The role of the judiciary, particularly the U.S. Supreme Court, is analyzed.

POL-291. Special Topics in Political Science. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in political science. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Political Science.
POL-292. Special Topics in Political Science. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in political science. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Political Science.

Portuguese (PTG)

Courses

PTG-111. Elementary Portuguese I. 3 Credits.
LECT 3 hrs
Not for native speakers. This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary, basic cultural knowledge and the essentials of grammar including present tense verbs. Both Brazilian and European Portuguese modalities are introduced.

PTG-112. Elementary Portuguese II. 3 Credits.
LECT 3 hrs
This course is intended for students with one semester of elementary college-level Portuguese or with limited background in the language. Emphasis is given to fundamentals of conversation, reading and writing. The course includes practice in pronunciation, basic vocabulary, basic cultural knowledge and the essentials of grammar. Past tenses are studied to express both completed and ongoing past events.
Prerequisites: PTG-111 or permission of department chair.

PTG-211. Intermediate Portuguese I. 3 Credits.
LECT 3 hrs
This course is a continuation of Portuguese grammar at the intermediate level. Students continue to hone their conversational, reading and writing skills in the language. Students are introduced to the imperative and subjunctive moods of verbs. The course includes a brief review of grammar and students learn to use reflexive verbs, express commands, and express opinions in the language. Both Brazilian and European Portuguese modalities are explored. The course also includes a variety of cultural, social and political realities of the entire and diverse Portuguese-speaking world, in particular those of Brazil and Portugal. The students will be exposed to everyday "real-life" situations, practical vocabulary and more specific grammar.
Prerequisites: PTG-112 or permission of department chair.

Psychology (PSY)

Courses

PSY-112. Career Development. 3 Credits.
LECT 3 hrs
An in-depth exploration of the role of societal norms and educational and psychological factors upon individual career choices. Students establish, change or confirm career goals and learn skills necessary for ongoing career and life planning.

PSY-113. General Psychology. 3 Credits.
LECT 3 hrs
An introductory survey of the scientific studies of human behavior on the following topics: human development, physiology, learning, individual differences, motivation, perception, personality, abnormal and social behavior. The course is designed to prepare the student for further study of the broad spectrum of psychology.

PSY-116. Psychology and Education of the Disabled. 3 Credits.
LECT 3 hrs
A study of the social, emotional, physical and learning characteristics of individuals with disabilities. Methods of diagnosis and differentiation, curriculum, teaching techniques, resources and integration into the community are examined.
Prerequisites: PSY-113.

PSY-117. Health Psychology. 3 Credits.
LECT 3 hrs
This course examines the effects of the physical, mental, cultural and environmental stressors on one's mental and physical health. Modern and ancient beliefs regarding the interaction of the mind and body are presented.
Prerequisites: PSY-113.

PSY-180. General Psychology - Honors. 3 Credits.
LECT 3 hrs
This honors course is a more advanced General Psychology course which includes, but is not restricted to, a more advanced text, emphasis on research methodology, and lectures which explore subject matter in greater depth. The course introduces students to the scientific study of behavior with emphasis on critical thinking skills. Students improve their abilities to analyze data objectively both in written and oral presentations. The General Psychology Honors section can be used to fulfill the Honors Social Science elective. Admission to the course is based on the recommendation of the honors program advisor only.
Prerequisites: Permission of department chair or honors advisor.

PSY-213. Child Psychology. 3 Credits.
LECT 3 hrs
The course consists of the interplay of biological, psychological and cultural forces that shape the growing child from prenatal development through adolescence. Students learn to interpret relevant research using a critical-thinking approach.
Prerequisites: PSY-113.

PSY-214. Adolescent Psychology. 3 Credits.
LECT 3 hrs
An examination of adolescence, the transitional period between childhood and adulthood. Issues covered include the adolescent in the context of family, school and work environments, emotional and cognitive changes and the maladapted adolescent.
Prerequisites: PSY-113.

PSY-217. Educational Psychology. 3 Credits.
LECT 3 hrs
This course introduces the student to psychological theory as it applies to teaching and learning. Topics include learning theory, motivation, tests and measurements, classroom management and teaching students with special needs. Educational Psychology is strongly recommended for students pursuing a career in teaching.
Prerequisites: PSY-113.
PSY-218. Cross-Cultural Psychology. 3 Credits.
LECT 3 hrs
The student is exposed to the psychological experiences and individual differences in cognitive, emotional and behavioral development of individuals who represent diverse populations within the United States and learn how one’s self-perception and the perception of others affect well-being.
Prerequisites: PSY-113.

PSY-219. Developmental Psychology - the Human Lifespan. 3 Credits.
LECT 3 hrs
The course considers the developing person from conception through death in terms of biosocial, cognitive and psychological development and discusses how these three domains interact. Additionally, it considers how contextual issues such as age, gender, culture, socioeconomic status and ethnicity broaden our understanding of human development.
Prerequisites: PSY-113.

PSY-221. Psychology of Personality. 3 Credits.
LECT 3 hrs
An in-depth discussion of major personality theories and relevant research. There is a focus on application to case studies and life experiences.
Prerequisites: PSY-113.

PSY-224. Abnormal Psychology. 3 Credits.
LECT 3 hrs
This course considers the tools involved in distinguishing abnormal from normal behavior. It surveys the range of mental disorders included in the American Psychiatric Association's Diagnostic and Statistical Manual including anxiety disorders, depression, addictions, problems of children and the elderly, deviance and schizophrenia, and covers modern treatment interventions.
Prerequisites: PSY-113.

PSY-229. Community Mental Health. 3 Credits.
LECT 3 hrs
A survey of institutional and community-based mental health programs of prevention and treatment, sources of environmental stress, identification of high risk groups, and the role of professionals and volunteers in the field.
Prerequisites: PSY-113 or an introductory course in Sociology.

PSY-290. Independent Study in Psychology. 3 Credits.
LECT 3 hrs
The design, development and implementation of individual research from formulation of hypothesis to analysis of results in the field of psychology.
Prerequisites: PSY-113 and additional 3 credit Psychology course and permission of department chair.

PSY-291. Special Topics in Psychology. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Psychology. Topics differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: PSY-113.

PSY-292. Honors Abnormal Psychology. 3 Credits.
LECT 3 hrs
This honors course is an in-depth coverage of the assessment, diagnosis and treatment of psychological disorders as categorized by the American Psychiatric Association's Diagnostic and Statistical Manual. Students are required to complete a research project using the American Psychological Association format.
Prerequisites: PSY-113 or PSY-180 and permission of Honors Advisor.

Public Administration (PUB)

Courses

PUB-111. Public Administration. 3 Credits.
LECT 3 hrs
A survey of the practices and political relationships in public administration. Leadership, decision-making, personnel, and budgetary functions within governmental agencies are examined. The role of the public administrator in contemporary government is analyzed. The implementation of public policy at all levels of government, with emphasis on state and municipal institutions, is covered.

PUB-250. Field Experience-Public Administration. 3 Credits.
COOP 3 hrs
The student is expected to participate in the activities of an administrative agency under the joint supervision of a faculty member and the agency. Introduction and review sessions are conducted by a faculty member.
Prerequisites: PUB-111.

PUB-291. Special Topics in Public Administration. 3 Credits.
LECT 3 hrs
An examination of selected topics of issues in Public Administration. Topics differ each time the course is offered. Students should consult the department chair for further information.

PUB-292. Special Topics in Public Administration. 3 Credits.
LECT 3 hrs
An examination of selected topics of issues in Public Administration. Topics differ each time the course is offered. Students should consult the department chair for further information.

Public Health (PBH)

Courses

PBH-101. Principles of Public Health. 3 Credits.
LECT 3 hrs
This course provides a broad overview of the many facets of public health, including, but not limited to historical perspectives, communicable disease, epidemiology, health policy, environmental health, emergency preparedness, and social, cultural, and behavioral aspects of health across the life span. It will describe public health infrastructure, delivery of services at the local, state and national levels, and the core competencies for public health professionals.

Radiography (RAD)
Courses

RAD-100. Introduction to Radiography. 2 Credits.
LECT 2 hrs
Introduction to Radiography is the study of the fundamental elements of the health system, patient care and the profession of Radiography. The concepts of ethics, law, medical asepsis, vital signs, communicable disease and medical emergencies are presented in this course.
Prerequisites: Admission to Professional Phase and permission of department chair
Corequisites: RAD-104, RAD-107 and MAT-140.

RAD-104. Principles of Radiography I. 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course is designed to provide students with the necessary theory, concepts and hands-on experience in performing specific diagnostic procedures. Patient positioning, equipment manipulation, radiation protection techniques, appropriate patient care techniques and critique of radiographic images are presented in this course. Body areas covered include chest, abdomen, upper and lower extremities.
Prerequisites: Admission to Professional Phase; Department permission
Corequisites: RAD-100, RAD-107 and MAT-140
Additional Fees: Course fee applies.

RAD-107. Radiography Clinical Practice I. 1 Credit.
CLIN 8 hrs
This course provides students with an opportunity to apply concepts learned in Radiography I and Introduction to Radiography. Some of the tasks include operating equipment appropriately, applying basic patient care and positioning the patient accurately.
Prerequisites: Admission to Professional Phase - permission of department chair
Corequisites: RAD-100, RAD-104 and MAT-140
Additional Fees: Course fee applies.

RAD-110. Radiation Biology and Physics. 3 Credits.
LECT 3 hrs
The study of physics and electronics involved in the production, use and control of the various electromagnetic energies used in medical and diagnostic applications.
Prerequisites: RAD-100, RAD-104, RAD-107, MAT-140
Corequisites: RAD-114 and RAD-117.

RAD-114. Principles of Radiography II. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Principles of Radiography II reinforces basic concepts presented in Principles of Radiography I. Body areas covered include the hip, pelvis, bony thorax, entire spine, upper and lower GI tract, biliary system and the urinary system.
Prerequisites: RAD-100, RAD-104, RAD-107, MAT-140
Corequisites: BIO-102, RAD-110 and RAD-117
Additional Fees: Course fee applies.

RAD-117. Radiography Clinical Practice II. 2 Credits.
CLIN 16 hrs
Students are allowed the opportunity to put into practice the course material introduced in this and previous semesters. Opportunities for more responsibility and independence with previously learned procedures are provided. Students demonstrate competency of procedures learned in Radiography I. Also included is film critique in which the student evaluates radiographs.
Prerequisites: RAD-100, RAD-104, RAD-107, MAT-140
Corequisites: RAD-110 and RAD-114
Additional Fees: Course fee applies.

RAD-120. Intermediate Clinical Practice. 3 Credits.
CLIN 32 hrs
This 11-week clinical experience allows students the opportunity to put into practice and demonstrate competency of procedures learned in Principles of Radiography I and II. A weekly film critique class for students to evaluate radiographs also is included.
Prerequisites: RAD-110, RAD-114, RAD-117
Additional Fees: Course fee applies.

RAD-200. Pathology for Radiography. 2 Credits.
LECT 2 hrs
This pathology course is an assessment of medical and surgical diseases designed to familiarize the student with changes caused by disease in relationship to radiography. Student projects, associated film presentations and critiques are also included.
Prerequisites: RAD-120
Corequisites: RAD-204 and RAD-213.

RAD-204. Principles of Radiography III. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Principles of Radiography III is a study of the anatomy and positioning of the skull and facial bones. Pediatric, geriatric, trauma and mobile radiography are also included.
Prerequisites: RAD-120
Corequisites: RAD-207 and RAD-213
Additional Fees: Course fee applies.

RAD-207. Radiologic Special Imaging. 3 Credits.
LECT 3 hrs
This course provides students with a basic understanding of the more advanced and complex diagnostic procedures. Students are introduced to such procedures as, but not limited to, myelography, arthrogramy, venography and hysterosalpingography. The basic concepts of pharmacology, venipuncture and contrast agents are included.
Prerequisites: RAD-120
Corequisites: RAD-204 and RAD-213.

RAD-210. Radiographic Exposure. 3 Credits.
LECT 3 hrs
This course will acquaint students with the many methods of routine and special technical factors available to radiographers to create diagnostic radiographs. Emphasizing the various accessory devices that may affect radiograph production, each student comes to understand how technique can significantly affect image quality. Students learn what technical factors can safely be used, aware that radiation physics, radiation protection and quality assurance are interlaced with the principles of radiographic exposure. In addition, upon completion of this course students are able to construct a functional safe technique chart.
Prerequisites: RAD-110, RAD-120
Corequisites: RAD-204 and RAD-207.
RAD-213. Radiography Clinical Practice III. 2 Credits.
CLIN 16 hrs
Students are allowed the opportunity to put into practice the course material introduced in this and previous semesters. The course also gives the student more responsibility and independence with procedures that have been deemed competent. Also included is film critique in which students evaluate radiographs.
Prerequisites: RAD-120, RAD-114, RAD-117
Corequisites: RAD-204, RAD-207 and RAD-210
Additional Fees: Course fee applies.

RAD-220. Principles of Radiography IV. 4 Credits.
LECT 2 hrs, LAB 3 hrs
The course presents the advanced imaging techniques required by nuclear medicine, diagnostic medical sonography, radiation therapy, mammography, computed tomography and magnetic resonance imaging. The basic concepts and principles of cardiac and vascular interventional radiography are also discussed.
Prerequisites: RAD-200, RAD-204, RAD-207, RAD-210, RAD-213
Corequisites: RAD-227
Additional Fees: Course fee applies.

RAD-224. Advanced Imaging. 2 Credits.
LECT 2 hrs
This course provides students with an opportunity to refine skills learned in previous radiography clinical courses. Continuous practice is performed to improve technique and procedures. Students complete all remaining competencies for the program.
Prerequisites: RAD-200, RAD-204, RAD-207, RAD-210, RAD-213
Corequisites: RAD-220 and RAD-224
Additional Fees: Course fee applies.

RAD-227. Radiography Clinical Practice IV. 2 Credits.
CLIN 16 hrs
This 11-week course provides students the opportunity to exercise independent judgment and discretion in the technical performance of medical imaging procedures. Students complete the terminal competency evaluations for the program. This final session of clinical education ensures that the student is ready for employment.
Prerequisites: RAD-220, RAD-224, RAD-227
Additional Fees: Course fee applies.

Respiratory Therapy (RTH)

Courses

RTH-199. Respiratory Therapeutics. 5 Credits.
LECT 4 hrs, LAB 3 hrs
An introduction to respiratory care, including history of the profession, ethical and legal responsibilities of the respiratory therapist; medical terminology, basic respiratory care procedures including the physics, physiology and administration of medical gas therapy, basic patient communication and assessment skills. Basic respiratory care procedures, humidity and aerosol therapy, hyperinflation therapy, chest physiotherapy and bronchial hygiene; an overview of microbiology as applied to respiratory care; infection control; and equipment sterilization procedures. Course requires that students have completed the pre-professional phase of the Respiratory Therapy program and have permission of the program director to enroll.
Prerequisites: Permission of Program Director
Additional Fees: Course fee applies.

RTH-202. Cardiopulmonary Pharmacology. 2 Credits.
LECT 2 hrs
This course is an overview of general pharmacology, including routes of administration, federal regulations, dosages and calculations, and safety precautions. It provides an in-depth study of drugs administered to the respiratory patient, including chemical structure, mechanism of action, indications, contraindications, physiologic effects and side-effects.
Prerequisites: BIO-101, BIO-102, CHM-117 and CHM-118 and permission of program director.

RTH-203. Cardiopulmonary Physiology. 2 Credits.
LECT 2 hrs
A study of physiologic mechanisms of the cardiopulmonary system, including a review of the anatomy of the pulmonary and circulatory systems; ventilatory mechanics, gas diffusion, physiology of internal and external respiration, oxygen transport, carbon dioxide elimination, acid-base balance, ventilation perfusion relationships; and the neurologic control of ventilation.
Prerequisites: BIO-101, BIO-102 and permission of program director.

RTH-204. Cardiopulmonary Evaluation. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course will cover the techniques of patient assessment and diagnostic evaluation of the cardiopulmonary system. Topics covered include: arterial blood gas analysis, pulmonary function testing, non-invasive monitoring of oxygenation and ventilation, an overview of laboratory tests, chest radiographs, electrocardiograph interpretation and hemodynamic monitoring.
Prerequisites: RTH-199, RTH-202, RTH-203, RTH-210 and permission of Program Director
Corequisites: RTH-205, RTH-206 and RTH-211
Additional Fees: Course fee applies.

RTH-205. Cardiopulmonary Pathophysiology. 2 Credits.
LECT 2 hrs
An overview of the pathophysiology of diseases of the cardiopulmonary system with an emphasis on pathophysiologic processes such as hypoxemia, hypoventilation, diffusion defects and ventilation perfusion mismatch; a survey of diseases encountered by the respiratory therapist, including pathophysiology, diagnostic methods and findings, clinical manifestations, treatment and prognosis.
Prerequisites: RTH-203 and permission of program director.
RTH-206. Mechanical Ventilation. 4 Credits.
LECT 3 hrs, LAB 3 hrs
Techniques of airway management and the provision of mechanical ventilation; includes types of airways and appropriate uses; the physics and physiology of mechanical ventilation; classification of mechanical ventilators; indications for clinical application and complications of mechanical ventilation; management and monitoring of the patient requiring ventilatory support; and appropriate methods of withdrawing ventilatory support.
Prerequisites: RTH-199, RTH-202, RTH-203, RTH-210 and permission of program director
Corequisites: RTH-204, RTH-205 and RTH-211
Additional Fees: Course fee applies.

RTH-207. Neonatal and Pediatric Respiratory Care. 2 Credits.
LECT 2 hrs
An overview of fetal development of the cardiopulmonary system with an emphasis on circulatory transitions and respiratory complications occurring at birth and in the neonatal period; a review of neonatal and pediatric respiratory disorders with an emphasis on clinical findings and treatment; a survey of respiratory care procedures as applied to the neonatal and pediatric patient, including oxygen therapy, humidity and aerosol therapy, diagnostic testing and mechanical ventilation.
Prerequisites: RTH-204, RTH-205, RTH-206, RTH-211 and permission of program director
Corequisites: RTH-208 and RTH-212.

RTH-208. Advanced Respiratory Care. 2 Credits.
LECT 2 hrs
A survey of current events and state-of-the-art modalities in respiratory care; includes respiratory care in non-traditional settings, cardiopulmonary rehabilitation, controversies in clinical practice, and changes in health care affecting the respiratory care profession. Students are required to complete advanced cardiac life support (ACLS) certification through the American Heart Association.
Prerequisites: RTH-204, RTH-205, RTH-206, RTH-211 and permission of program director
Corequisites: RTH-207 and RTH-212.

RTH-210. Clinical Practice I. 3 Credits.
CLIN 16 hrs
A supervised clinical application of the respiratory care procedures covered in Respiratory Therapeutics including chart review, patient and health professional communication, basic patient assessment, assembly and monitoring of oxygen therapy, aerosol and humidity therapy, aerosolized drug administration, hyperinflation therapy, bronchial hygiene and evaluation of patient response.
Prerequisites: Permission of program director
Corequisites: RTH-199, RTH-202 and RTH-203
Additional Fees: Course fee applies.

RTH-211. Clinical Practice II. 3 Credits.
CLIN 16 hrs
Continued refinement of the skills covered in Clinical Practice I, in a general care environment, with an emphasis on clinical competence in providing basic respiratory care; followed by an introduction to the critical care environment and to respiratory care of the critically ill patient, with an emphasis on patient assessment and monitoring skills, and patient safety. Supervised application of the skills covered in Mechanical Ventilation and Cardiopulmonary Evaluation, including specialty rotations in ECG, the operating room, pulmonary function testing and blood gas laboratory, and physician offices.
Prerequisites: RTH-199, RTH-202, RTH-203, RTH-210 and permission of program director
Corequisites: RTH-204, RTH-205 and RTH-206
Additional Fees: Course fee applies.

RTH-212. Clinical Practice III. 4 Credits.
CLIN 32 hrs
Continued refinement of the skills needed to function in a critical care environment with an emphasis on clinical competence in hemodynamic and advanced monitoring and management of the patient on mechanical ventilation. An emphasis is placed on interaction with other members of the healthcare team, patient care planning, clinical decision making and independent practice. Includes specialty rotations in neonatal and pediatric respiratory care, post open heart recovery and home care. The clinical fee includes the cost of the required National Board of Respiratory Care Self-Assessment Examination (NBRC SAE).
Prerequisites: RTH-204, RTH-205, RTH-206, RTH-211 and permission of program director
Corequisites: RTH-207 and RTH-208
Additional Fees: Course fee applies.

RTH-292. Special Topics in Respiratory Care. 2 Credits.
LECT 2 hrs
An examination of selected topics or issues in Respiratory Therapy. Topics differ each time the course is offered. Students should consult the program director for further information.
Prerequisites: Permission of program director.

Russian (RUS)

Courses

RUS-111. Elementary Russian I. 3 Credits.
LECT 3 hrs
Not for native speakers. See department chair. This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar is incorporated.

RUS-112. Elementary Russian II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Russian expand their study of basic Russian pronunciation, vocabulary and grammar of an elementary nature. Grammar study includes imperative words, dative, accusative, and prepositional cases, plural of nouns and demonstrative pronouns. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Russian language proficiency. The cultural context of the language is also covered.
Prerequisites: RUS-111 or permission of department chair.
RUS-211. Intermediate Russian I. 3 Credits.
LECT 3 hrs
The course is intended for students whose study of the first year of this language is recent and who wish to hone their skills. It includes a continuation of grammar, conversation and some compositions on cultural subjects. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Russian language proficiency. The cultural context of the language is also covered.
Prerequisites: RUS-112 or permission of department chair.

RUS-212. Intermediate Russian II. 3 Credits.
LECT 3 hrs
The course is intended for students to attain intermediate to advanced skills. It includes a continuation of grammar and conversation. Readings from Russian literature and compositions are required. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Russian language proficiency. The cultural context of the language is also covered.
Prerequisites: RUS-211 or permission of department chair.

Science (SCI)

Courses

SCI-101. Natural Science. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Timely topics for discussion and analysis are selected from the general areas of physics, chemistry, meteorology and astronomy. Emphasis is conceptual rather than mathematical.
Additional Fees: Course fee applies.

SCI-106. Introduction to Astronomy. 3 Credits.
LECT 2 hrs, LAB 2 hrs
This course is a non-mathematical treatment of the basic concepts of astronomy leading to discussions of some of the exciting astronomy-related questions of current interest. Topics include cosmology, stellar evolution, planetary characteristics and recent developments in space exploration. Planetarium demonstrations are incorporated. Students needing a 4 credit Laboratory Science course should take SCI-118.
Additional Fees: Course fee applies.

SCI-118. General Astronomy. 4 Credits.
LECT 3 hrs, LAB 1 hr
This course is a scientific exploration of the human place in the universe. Studied are the origin and history of the Universe and the formation of the Earth and solar system. The Earth's properties are compared with those of the other planets. Also covered are exciting contemporary topics such as global warming, black holes and dark matter. Although largely descriptive, the course occasionally requires the use of algebra and geometry-level mathematics.
Prerequisites: MAT-016 or MAT-120 or equivalent
Additional Fees: Course fee applies.

Sociology (SOC)

Courses

SOC-108. Cultural Geography. 3 Credits.
LECT 3 hrs
The study of the interaction of contemporary cultures and their physical environment. This course examines processes of globalization and their impact on national and local level social processes. Emphasis is placed on the global capitalist economy and its relation to national economies, political systems, populations, environments and religions.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

SOC-110. Sociology of Health and Illness. 3 Credits.
LECT 3 hrs
An analysis of the structure and function of health institutions in society with emphasis on the social psychology of illness behavior, the practitioners of medicine, the social organization of the hospital, managed care and future trends in medical care.
Prerequisites: Placement basis or ENG-025 or ENG-022 or ENG-007.

SOC-120. Principles of Sociology. 3 Credits.
LECT 3 hrs
A comprehensive introduction to the discipline of sociology, examining the basic concepts, e.g., role, status, social structure, research methods, culture, socialization, stratification, norms, values, groups, associations, institutions, community, deviance and society, as well as exploring its foundations and history, and techniques of seeing and understanding the world from a sociological perspective.

SOC-180. Principles of Sociology - Honors. 3 Credits.
LECT 3 hrs
A systematic introduction to basic sociological concepts, culture, norms, status, role, groups, character structure, association, institutions, community, deviance and society.
Prerequisites: Permission of department chair or honors advisor.

SOC-202. Contemporary Social Issues - America As a Diverse Society. 3 Credits.
LECT 3 hrs
Investigates issues that challenge citizens in post-modern America. Scientific analysis of topics such as global, political and economic trends, inequality, group conflicts, pluralism, urbanism, alienation and bureaucracy, family disorganization, mass communications, addictive behaviors and social movements. Special attention is given to field research which develops student competence in understanding contemporary social issues.
Prerequisites: SOC-120.

SOC-206. Religion and Human Experience. 3 Credits.
LECT 3 hrs
An interdisciplinary course with sociological, psychological and anthropological perspectives on religion. Topics include interactions between the individual, society and religion, ritual and religious experience, religious organization and secularization. Comparisons are made between western and non-western religious systems. The rise of fundamentalism and new religious consciousness are also considered.
Prerequisites: An introductory course in Anthropology, Psychology or Sociology.
SOC-209. The Family. 3 Credits.
LECT 3 hrs
Analysis of marriage and family in various cultures with in-depth study of the contemporary United States including historical development and future trends. Topics covered are romantic love, courtship, marital interaction, divorce, gender roles and the feminist movement. Special attention is given to the post-modern family and cross-cultural comparisons are made
Prerequisites: SOC-120.

SOC-214. Cultural Diversity in America - the Sociology of Ethnic and Minority Groups. 3 Credits.
LECT 3 hrs
A study of diversity in American life with an emphasis on the cultural, political and interactional patterns of ethnic and minority groups. Topics covered include assimilation, intergroup cooperation and conflict, cross-cultural communication, and theories of prejudice and discrimination. Attention is also given to national and global demographic trends.
Prerequisites: SOC-120 or permission of department chair.

SOC-215. Physical Anthropology. 3 Credits.
LECT 3 hrs
The study of humankind emphasizing human evolution with the integration of recent research in the areas of paleontology, primatology, human genetics and ethology. Objectives of the course are to provide a knowledge of humankind’s biological and physical heritage with emphasis on origins and variations.

SOC-216. Cultural Anthropology. 3 Credits.
LECT 3 hrs
An introduction to the analysis of non-western cultures and anthropological theory and methods. Emphasis is placed on the comparison of western and non-western cultures, including cross-cultural comparisons of political, economic, social and cognitive systems.

SOC-217. Archaeology. 3 Credits.
LECT 3 hrs
Introduction to the general principles of archaeological research and theory. An overview of human history and prehistory as evidenced through material remains, including the rise of state-level societies in the old and new worlds.

SOC-221. Sociology of Gender. 3 Credits.
LECT 3 hrs
An in-depth introduction to social science theory and research in the field of gender studies. The new scholarship on women’s issues, feminism and gender relations is examined and critiqued.
Prerequisites: SOC-120.

SOC-222. Deviant Behavior. 3 Credits.
LECT 3 hrs
A review of deviant behavior by various deviant, outsider or disvalued members of a society, with emphasis on the environmental (socio-cultural) causes, the rewards and punishments of conforms or not conforming to group norms, the identification of deviants, the process of becoming prejudiced, why people conform, why people like each other, and the dynamics of groups. Topics are examined in a cross-cultural and historical perspective.
Prerequisites: SOC-120.

SOC-224. Social Psychology. 3 Credits.
LECT 3 hrs
A study of group behavior and the influence of groups on the perception, thinking and behavior of the individual. Topics are chosen from the following: social influences on the development of personality and attitudes, the causes of human aggression, the nature of prejudice, why people conform, why people like each other, and the dynamics of groups. Topics are examined in a cross-cultural and historical perspective.
Prerequisites: PSY-113 or SOC-120.

SOC-230. Sociology of Globalization. 3 Credits.
LECT 3 hrs
Is the current era of globalization a unique historical period or is it simply a variation of previous ones? This course examines recent social, economic and political trends, assesses the state of the world, and identifies the forces that are shaping it.
Prerequisites: SOC-120.

SOC-291. Special Topics in Sociology. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in sociology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Sociology.

SOC-292. Special Topics in Sociology. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in sociology. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An introductory course in Sociology.

Spanish (SPN)

Courses

SPN-111. Elementary Spanish I. 3 Credits.
LECT 3 hrs
This course is intended for students with no prior knowledge of, or with limited background in, the language. Emphasis is on fundamentals of conversation, reading and writing. Practice in pronunciation, basic vocabulary and the essentials of grammar are incorporated. Not for students with two or more years of high school Spanish. See department chair. Not for native speakers, that is, not for speakers that grew up and/or studied in a Spanish-speaking country.

SPN-112. Elementary Spanish II. 3 Credits.
LECT 3 hrs
Students with one prior semester of Spanish expand their study of basic Spanish pronunciation, vocabulary and grammar of an elementary nature. Grammar study includes past tenses, the present progressive tense, the verb gustar, direct and indirect object pronouns, adjectives, reflexive verbs, and prepositions. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Spanish language proficiency. The cultural context of the language is also covered.
Prerequisites: SPN-111 or permission of department chair.
SPN-211. Intermediate Spanish I. 3 Credits.
LECT 3 hrs
This course expands the Spanish vocabulary, grammar, reading and writing skills of those students wishing to continue work towards an intermediate knowledge of the Spanish language. Grammar study includes expanded use of prepositions, relative pronouns, preterit and imperfect tenses, commands, and an introduction to the subjunctive mood. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Spanish language proficiency. Cultural aspects are also discussed.
Prerequisites: SPN-112 or permission of department chair.

SPN-212. Intermediate Spanish II. 3 Credits.
LECT 3 hrs
This course expands the Spanish vocabulary, grammar, reading and writing skills of those students wishing to attain an intermediate knowledge of the Spanish language. Grammar study includes general tenses in the indicative and subjunctive moods. Vocabulary and grammar support listening, reading, speaking and writing in an effort to enhance Spanish language proficiency. Cultural aspects are also discussed.
Prerequisites: SPN-211 or permission of department chair.

SPN-218. Advanced Spanish Conversation. 3 Credits.
LECT 3 hrs
Advanced Spanish Conversation instructs students conversant in Spanish in the correct and appropriate vocabulary, grammar and syntax for accurate spoken communication. Students deepen their understanding of idiomatic usage of the several Spanish-speaking countries through discussion of the varied themes explored by contemporary writers in short stories and other non-fiction readings, as well as consider shades of meaning inherent in their own syntactical and lexical choices. The varied readings and the interchange of ideas among the expected population of both American and Hispanic students support the cultural context of the language - the history, literature and art of the Hispanic people, and provide insight into the various ethnic and racial populations within each Spanish-speaking country and in the United States.
Prerequisites: SPN-212 or permission of department chair.

SPN-219. Advanced Spanish Composition. 3 Credits.
LECT 3 hrs
Advanced Spanish Composition focuses on correct and appropriate written forms of communication in Spanish. The expository and argumentative essays are studied along with other special types of formal and informal writing. Students review spelling, syntax and grammar, and are expected to conduct extensive conversation in Spanish to elicit topics for writing projects. This course helps English speakers to develop new structures in Spanish syntax and understand to a greater extent aspects of Hispanic culture embodied in written forms. It also increases the knowledge of written structures of native speakers and expands their understanding of formal written language. Classes for this course are conducted entirely in Spanish.
Prerequisites: SPN-212 or permission of department chair.

SPN-220. Spanish Literature. 3 Credits.
LECT 3 hrs
This course provides a historical and critical overview of Spanish Peninsular literature beginning with the Middle Ages and ending in the present. Among the literary periods to be covered are the Renaissance, the Baroque period, the Enlightenment, Romanticism, Realism, the Generations of 1898 and 1927, and post-Spanish Civil War, Don Juan Manuel, Garcilaso de la Vega, Santa Teresa de Jesus, Cervantes, Lope de Vega, Beccquer, Perez Galdos, Unamuno, Machado, Lorca, Cela, Ana Maria Matute, and Carmen Martin Gaite. This course is conducted entirely in Spanish.
Prerequisites: SPN-212 or permission of department chair.

SPN-223. Survey of Latin American Literature: Pre-Columbian to the Present. 3 Credits.
LECT 3 hrs
This course provides a historical and critical overview of Latin American literature beginning with pre-Columbian myths and poetry, and continuing through the literature of the conquest and the colonies, independence, Romanticism, Modernism, Postmodernism, the mid-twentieth century Boom and the Post-Boom on up to the present. Major writers may include Hernan Cortes, Sor Juana Ines de la Cruz, Dario, Marti, Neruda, Paz, Garcia Marquez, Poniatowska, Valenzuela and Allende. This course is conducted entirely in Spanish.
Prerequisites: SPN-212 or permission of the department chair.

SPN-291. Special Topics in Spanish. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Spanish. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An advanced course in Spanish or permission of department chair.

SPN-292. Special Topics in Spanish. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Spanish. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An advanced course in Spanish or permission of department chair.

Telecommunications Systems Technology (TEL)

Courses

TEL-107. Computers and Data Networks. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course is a continuation of topics introduced in earlier courses. Data networking, including concepts of essential computer components, data storage, network operating systems, computer networking models and communication framework for the transmission of voice, text and video data will be explored in greater detail. The laboratory component will cover topics on computer setup, network setup and integration and operating system utilities.
Prerequisites: CMP-130 and CMP-200.
TEL-109. Introduction to Telecommunications. 3 Credits.
LECT 3 hrs
This course is an introduction to the terminology and standard practices of the telecommunications industry, including concepts of integrating office automation procedures with telecommunications networks (wired and wireless) using voice, data, text and video information. Coverage includes various transmission and switching media as well as an understanding of message routing hierarchies. Issues of regulation and deregulation are discussed together with equipment selection and management topics. The mechanics of the Internet also are introduced with a description of Voice over Internet Protocol (VoIP). Other topics covered include laser communication links, teleconferencing, data network protocols and architectures and satellite technology.

TEL-110. Routing I (CISCO). 3 Credits.
LECT 2 hrs, LAB 3 hrs
The course follows CISCO's CCNA1 curriculum for Networking Basics. Lecture and laboratory assignments are an integral part of the course. The course focuses on networking terminology and protocols, local area networks (LANs), wide area networks (WANs), Open System Interconnection (OSI) networking model, cabling, cabling tools, routers, router programming, Ethernet, Internet Protocol addressing/subnetting and network standards.
Additional Fees: Course fee applies.

TEL-120. Routing II (CISCO). 3 Credits.
LECT 2 hrs, LAB 3 hrs
The course follows CISCO's CCNA2 curriculum for Routers and Routing Basics. The course focuses on initial router configuration, CISCO IOS software management, routing protocol configuration, TCP/IP and access control lists (ACLs). Through lectures and laboratory assignments, students develop the skills to configure and maintain a router as well as the creation of software firewalls.
Prerequisites: TEL-110
Additional Fees: Course fee applies.

TEL-122. Routing III (CISCO CCNA3 & CCNA4). 4 Credits.
LECT 3 hrs, LAB 3 hrs
This course follows CISCO's CCNA3 curriculum for Switching and Intermediate Routing and CISCO's CCNA4 curriculum for WAN Technologies. The first half of the course focuses on advanced IP addressing techniques (Variable Length Subnet Masking (VLSM), intermediate routing protocols (RIP v2), single-area OSPF, EIGRP), command-line interface configuration of switches, Ethernet switches, Virtual LANs (VLANs), Spanning Tree Protocol (STP) and VLAN Trunking Protocol (VTP). The second half of the course focuses on advances IP addressing techniques (Network Address Translation (NAT), Port Address Translation (PAT), and (DHCP), WAN terminology and technology, PPP, ISDN, DDR, Frame Relay, network management and an introduction to optical networking. Preparation is also given to the study of CISCO's CCNA certification examination. Students learn through lecture and laboratory assignments.
Prerequisites: TEL-120
Additional Fees: Course fee applies.

TEL-222. Data Communication. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is a study of systems and equipment used in the transmission of data, interfacing data links to computers and troubleshooting of data links. Topics include VoIP (Voice over Internet Protocol), wireless technology, optical networking, serial interfaces, routing, link analysis, modems, data link and protocols, networking. The laboratory makes extensive use of protocol analysis for diagnostics.
Prerequisites: ELT-209 or TEL-110
Additional Fees: Course fee applies.

TEL-233. Network Operating Systems. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course is an introduction to various network operating systems. Emphasis is placed on the study of a server in a client/server computer network. Topics of study include installation of a network operating system, securing a system, creating users and groups, partitioning of hard drive, installation of transport protocols, creating and maintaining printers, event viewing, performance monitoring, registry modification, configuring a server, creating and maintaining the active directory and troubleshooting the network.
Additional Fees: Course fee applies.

TEL-234. Telecommunications Systems Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
This course includes the study of the elements of telecommunications systems, emphasizing both voice and digital communications. Telephone loop operation and signaling, central office interface, switching, routing, transmission protocols, network architecture, T1 multiplexing and high-speed transmission are major topics. Advanced telecommunications topics such as ISDN and DSL are studied. Laboratory includes configuration, maintenance and diagnostic telecommunication systems.
Prerequisites: ELT-209 or CMP-230 and TEL-110
Additional Fees: Course fee applies.

TEL-239. Cooperative Work Experience - Telecommunications Systems Technology. 3 Credits.
COOP 3 hrs
This course is a field experience in the laboratory facilities of an industrial firm. Designed for students in Telecommunication Systems Technology programs to obtain industrial experience as a supplement to their college studies prior to career employment. Seminar evaluation visitations are included. Completion of the first year of the program is required to enroll.
Prerequisites: Permission of department chair.

TEL-290. Independent Study in Telecommunications. 3 Credits.
LECT 3 hrs
Students, in consultation with a Telecommunications Technology advisor, undertake an in-depth analysis of a selected topic, problem or issue related to the telecommunications industry or pursue additional related work experience. Students are responsible for developing a statement of goals and strategies, maintaining a weekly log and preparing a written and oral summary report. Written permission must be obtained from the department before registering for this course.
Prerequisites: Permission of department chair.
TEL-291. Special Topics in Telecommunications Systems Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
These courses provide students with an examination of selected topics or issues in telecommunications systems technology. Topics may differ each time the course is offered. Students should consult a Telecommunications Technology advisor for additional information.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

TEL-292. Special Topics in Telecommunications Systems Technology. 3 Credits.
LECT 2 hrs, LAB 3 hrs
These courses provide students with an examination of selected topics or issues in telecommunications systems technology. Topics may differ each time the course is offered. Students should consult a Telecommunications Technology advisor for additional information.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

Curriculum Requirements

County College Of Morris’s General Education Policy is aligned with A General Education Foundation for Associate in Arts, Associate in Science, Associate in Applied Science, Specialized Associate, and Certificate Program in New Jersey Community Colleges and NJCC General Education Guiding Principles for Affirming General Education Course Status. The foundation and principles define eight General Education course categories and two General Education integrated course goals. County College of Morris provides multiple and varied learning experiences for the acquisition of knowledge in all categories of General Education.

General Education Course Categories
1. Communication
2. Mathematics
3. Science
4. Technology
5. Social Science
6. Humanities
7. History
8. Diversity

General Education Integrated Course Goals
1. Ethical Reasoning
2. Information Literacy

Critical thinking is integrated into each General Education course.

General Education Outcomes
County College of Morris students will:
• Communicate effectively using listening, speaking, reading and writing skills
• Use quantitative analytical skills to evaluate and to process numerical data
• Apply the scientific method of inquiry to gain scientific knowledge
• Apply social science theories and concepts to analyze human behavior, social and political institutions, and responsible citizenship
• Analyze works in such fields as art, music, literature, and philosophy and/or religious studies; and/or gain competence in a foreign language
• Analyze historical events and movements in world, Western, non-Western or American societies and assess their subsequent significance
• Demonstrate knowledge of diverse cultures, including global and historical perspectives
• Demonstrate knowledge of ethical thinking and its application to societal issues Address any information need through the effective use of technology and the critical evaluation of electronic resources
• Demonstrate critical thinking in each General Education course

These General Education learning outcomes will be assessed regularly, with assessment results used to improve teaching and student learning in General Education courses.

<table>
<thead>
<tr>
<th>New Jersey Community College Course Categories (Goal Categories)</th>
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<tbody>
<tr>
<td>Communication (Written and Oral Com.)</td>
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<tr>
<td>Mathematics - Science - Technology</td>
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<tr>
<td>Social Science (Society and Human Behavior)</td>
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<tr>
<td>Humanities - Humanistic Perspective</td>
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<td>Certificate credits</td>
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### General Education Courses

#### COMMUNICATION

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<td>Speech Fundamentals 2</td>
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<td>English Composition I</td>
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<td>ENG-112</td>
<td>English Composition II 2</td>
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<td>English Composition I Honors</td>
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<td>English Composition II Honors</td>
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<td>MAT-113</td>
<td>Applied Calculus</td>
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<tr>
<td>MAT-117</td>
<td>Mathematical Analysis for Business and Economics</td>
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<td>MAT-118</td>
<td>Calculus With Application to Business And Economics</td>
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<td>MAT-120</td>
<td>Mathematics for the Liberal Arts 2</td>
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<td>MAT-123</td>
<td>Precalculus</td>
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<td>MAT-124</td>
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<td>Probability and Statistics 4</td>
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<td>MAT-131</td>
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#### SCIENCE

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<td>BIO-123</td>
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<td>Biology of Environmental Concerns 1, 3</td>
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<td>Concepts in Biology 1, 2</td>
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<td>Human Biology 1, 2</td>
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<td>BIO-180</td>
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<td>BIO-201</td>
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<td>BIO-202</td>
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<td>BIO-215</td>
<td>Microbiology 3</td>
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<td>BIO-223</td>
<td>Cell and Molecular Biology 4</td>
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<td>CHM-105</td>
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<td>CHM-125</td>
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<td>CHM-127</td>
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<td>CHM-212</td>
<td>Biochemistry</td>
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<td>CHM-219</td>
<td>Quantitative Chemical Analysis</td>
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<td>CHM-220</td>
<td>Instrumental Methods of Analysis</td>
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<td>CHM-233</td>
<td>Organic Chemistry II - Lecture</td>
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<td>PHY-103</td>
<td>Concepts of Physics</td>
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<td>and Laboratory for Engineering Physics II</td>
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<td>and Laboratory for Engineering Physics III</td>
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<td>SCI-101</td>
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<td>SCI-118</td>
<td>General Astronomy</td>
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1. Recommended for non-science majors

#### TECHNOLOGICAL COMPETENCY

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<td>CMP-101</td>
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<td>CMP-126</td>
<td>Computer Technology and Applications 2</td>
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<td>CMP-128</td>
<td>Computer Science I 3</td>
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<td>CMP-135</td>
<td>Computer Concepts with Applications</td>
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#### SOCIAL SCIENCE

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<td>ECO-113</td>
<td>Elements of Economics</td>
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<td>ECO-120</td>
<td>Economics and Economic Issues</td>
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<tr>
<td>ECO-211</td>
<td>Principles of Economics I Macroeconomics</td>
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<td>ECO-212</td>
<td>Principles of Economics II Microeconomics</td>
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<td>POL-111</td>
<td>American Government</td>
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<td>POL-231</td>
<td>State and Local Government</td>
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<td>POL-240</td>
<td>International Politics</td>
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<td>POL-245</td>
<td>Comparative Government</td>
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<td>PSY-113</td>
<td>General Psychology</td>
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<td>PSY-180</td>
<td>General Psychology - Honors</td>
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<td>PSY-213</td>
<td>Child Psychology</td>
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<td>PSY-214</td>
<td>Adolescent Psychology</td>
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<td>SOC-108</td>
<td>Cultural Geography</td>
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<td>SOC-120</td>
<td>Principles of Sociology</td>
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<td>SOC-180</td>
<td>Principles of Sociology - Honors</td>
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<td>SOC-215</td>
<td>Physical Anthropology</td>
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<td>SOC-216</td>
<td>Cultural Anthropology</td>
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<td>SOC-217</td>
<td>Archaeology</td>
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<td>ENG-283</td>
<td>World Literary Traditions: Beginnings - 1650 - Honors</td>
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<td>ENG-284</td>
<td>World Literary Traditions: 1650 to Present: Honors</td>
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<td>Intermediate French I</td>
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<td>FRE-221</td>
<td>French Conversation and Literature I</td>
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<td>Modern Social Thought - Honors</td>
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<td>MUS-143</td>
<td>World Music and Culture</td>
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<tr>
<td>MUS-150</td>
<td>Jazz History and Styles</td>
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<tr>
<td>MUS-163</td>
<td>Rock History and Culture 2</td>
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<tr>
<td>MUS-217</td>
<td>Music History and Literature to 1750</td>
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<tr>
<td>MUS-218</td>
<td>Music History and Literature From 1750 2</td>
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<tr>
<td>MUS-248</td>
<td>Enjoyment of Music 2</td>
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<tr>
<td>MUS-258</td>
<td>Contemporary Music: 20th-21st Century</td>
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<tr>
<td>PHL-111</td>
<td>Introduction to Philosophy</td>
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<tr>
<td>PHL-114</td>
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<td>PHL-115</td>
<td>Logic</td>
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<td>PHL-180</td>
<td>Introduction to Philosophy-Honor</td>
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<tr>
<td>PHL-212</td>
<td>Philosophy and Religion</td>
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<tr>
<td>PHL-280</td>
<td>Ancient Philosophy-Honors</td>
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<tr>
<td>PHO-110</td>
<td>Photography Appreciation</td>
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<tr>
<td>PHO-113</td>
<td>History of Photography</td>
<td>3</td>
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<tr>
<td>PTG-111</td>
<td>Elementary Portuguese I</td>
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<tr>
<td>PTG-112</td>
<td>Elementary Portuguese II</td>
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<tr>
<td>PTG-211</td>
<td>Intermediate Portuguese I</td>
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<tr>
<td>RUS-111</td>
<td>Elementary Russian I</td>
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<td>RUS-112</td>
<td>Elementary Russian II</td>
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<tr>
<td>RUS-211</td>
<td>Intermediate Russian I</td>
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</table>

**HUMANITIES**

All courses in the History category below are also general education courses in Humanities.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ARA-111</td>
<td>Elementary Arabic I</td>
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<td>ARA-112</td>
<td>Elementary Arabic II</td>
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<td>ARA-211</td>
<td>Intermediate Arabic I</td>
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<td>ART-114</td>
<td>Contemporary Art</td>
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<td>ART-116</td>
<td>American Art</td>
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<td>ART-133</td>
<td>Art History I</td>
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<td>ART-134</td>
<td>Art History II</td>
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<td>ASL-111</td>
<td>American Sign Language I</td>
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<td>ASL-112</td>
<td>American Sign Language II</td>
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<td>ASL-211</td>
<td>Intermediate American Sign Language I</td>
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<td>ASL-212</td>
<td>Intermediate American Sign Language II</td>
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<td>CHI-111</td>
<td>Elementary Chinese I</td>
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<td>CHI-112</td>
<td>Elementary Chinese II</td>
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<td>Intermediate Chinese I</td>
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<td>CHI-212</td>
<td>Intermediate Chinese II</td>
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<td>COM-234</td>
<td>Introduction to Film</td>
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<td>DAN-111</td>
<td>Introduction to Dance</td>
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<td>DAN-112</td>
<td>Dance Appreciation 2</td>
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<td>DAN-134</td>
<td>Dance History 2</td>
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<tr>
<td>ENG-115</td>
<td>The Short Story</td>
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<tr>
<td>ENG-116</td>
<td>The Novel</td>
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<td>ENG-119</td>
<td>Introduction to Poetry</td>
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<tr>
<td>ENG-214</td>
<td>Women in Film</td>
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<tr>
<td>ENG-224</td>
<td>Women in Literature</td>
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<tr>
<td>ENG-233</td>
<td>History of the Theatre I 2</td>
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<tr>
<td>ENG-234</td>
<td>History of the Theatre II 2</td>
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<tr>
<td>ENG-243</td>
<td>World Literary Traditions: Beginnings to 1650</td>
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<tr>
<td>ENG-244</td>
<td>World Literary Traditions: 1650 to Present</td>
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<tr>
<td>ENG-246</td>
<td>English Classics From Beowulf to Paradise Lost: a Survey of Drama, Romances and Epics</td>
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<tr>
<td>ENG-247</td>
<td>Romantics, Victorians and Moderns - Major British Writers of the 19th and 20th Centuries</td>
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<tr>
<td>ENG-249</td>
<td>American Literature From the Colonial To The Civil War</td>
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<tr>
<td>ENG-250</td>
<td>American Literature From the Civil War To the Twentieth Century</td>
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</tbody>
</table>
RUS-212  Intermediate Russian II                          3
SPN-111  Elementary Spanish I                             3
SPN-112  Elementary Spanish II                            3
SPN-211  Intermediate Spanish I                           3
SPN-212  Intermediate Spanish II                          3
SPN-218  Advanced Spanish Conversation                    3
SPN-220  Spanish Literature                              3
SPN-223  Survey of Latin American Literature: Pre-
          Columbian to the Present                          3

HISTORY
All courses in the History category listed below are also general
education courses in Humanities
HIS-113  Early Modern Europe                              3
HIS-114  Modern Europe                                     3
HIS-117  The Ancient World-Greece and Rome                 3
HIS-118  The Middle Ages                                   3
HIS-123  History of Modern Africa                          3
HIS-147  History of Modern East Asia                       3
HIS-148  Modern Middle East                                3
HIS-151  Latin American History                            3
HIS-166  Emergence of America - U.S. History I             3
HIS-167  Twentieth Century American History - U.S. History II 3
HIS-181  The Middle Ages-Honors                            3
HIS-183  Modern Social Thought - Honors                    3
HIS-184  Early Modern Europe - Honors                      3
HIS-185  Modern Europe - Honors                            3
HIS-203  History of Minorities in U.S.                     3
HIS-204  History of the African-American Experience        3
HIS-209  History of American Women                         3

DIVERSITY
ARA-211  Intermediate Arabic I                             3
ART-133  Art History I                                     3
ART-134  Art History II                                    3
ASL-111  American Sign Language I                          3
ASL-112  American Sign Language II                         3
ASL-211  Intermediate American Sign Language I             3
ASL-212  Intermediate American Sign Language II            3
ENG-118  Children's Literature                             3
ENG-214  Women in Film                                     3
ENG-224  Women in Literature                               3
ENG-243  World Literary Traditions: Beginnings to 1650     3
ENG-244  World Literary Traditions: 1650 to Present        3
ENG-283  World Literary Traditions: Beginnings - 1650 -    3
          Honors
ENG-284  World Literary Traditions: 1650 to Present:       3
          Honors
          FRE-211  Intermediate French I                       3
          FRE-212  Intermediate French II                      3
          FRE-221  French Conversation and Literature I       3
          FRE-222  French Conversation and Literature II      3
          GER-211  Intermediate German I                       3
          GER-212  Intermediate German II                      3
          GER-221  German Conversation and Literature I       3
          GER-222  German Conversation and Literature II      3
          HIS-122  History of Russia                            3
          HIS-123  History of Modern Africa                    3
          HIS-147  History of Modern East Asia                 3
          HIS-148  Modern Middle East                          3
          HIS-151  Latin American History                      3
          HIS-203  History of Minorities in U.S.                3
          HIS-204  History of the African-American Experience  3
          HIS-209  History of American Women                   3
          ISA-110  Intercultural Communication                 3
          ISA-215  A Survey of Islam                           3
          ITL-211  Intermediate Italian I                       3
          ITL-212  Intermediate Italian II                      3
          MUS-114  American Music                                3
          MUS-143  World Music and Culture                      3
          MUS-163  Rock History and Culture                     3
          MUS-248  Enjoyment of Music                           3
          PHL-212  Philosophy and Religion                      3
          PSY-116  Psychology and Education of the Disabled     3
          PSY-218  Cross-Cultural Psychology                     3
          PTG-211  Intermediate Portuguese I                    3
          RUS-211  Intermediate Russian I                       3
          RUS-212  Intermediate Russian II                      3
          SOC-108  Cultural Geography                           3
          SOC-120  Principles of Sociology                      3
          SOC-180  Principles of Sociology - Honors             3
          SOC-202  Contemporary Social Issues - America As a    3
          Diverse Society
          SOC-206  Religion and Human Experience                 3
          SOC-209  The Family                                     3
          SOC-214  Cultural Diversity in America - the Sociology of Ethnic and Minority Groups
          SOC-215  Physical Anthropology                          3
          SOC-216  Cultural Anthropology                          3
          SOC-221  Sociology of Gender                           3
          SOC-224  Social Psychology                             3
          SOC-230  Sociology of Globalization                    3
          SPN-211  Intermediate Spanish I                        3
          SPN-212  Intermediate Spanish II                       3
          SPN-220  Spanish Literature                            3
          SPN-223  Survey of Latin American Literature: Pre-
          Columbian to the Present                              3

Approved for Information Literacy
Approved for Ethical Reasoning and Action
Approved for both Information Literacy and Ethical and Reasoning and Action
Degree Choices

Degree Programs

County College of Morris (CCM) offers four degrees: the Associate in Arts, the Associate in Fine Arts, the Associate in Science and the Associate in Applied Science. These degrees are offered in several specialized fields.

The Associate in Arts degree (A.A.) is a university-parallel program designed specifically for students who wish to transfer to a four-year college or university after graduating or for those who desire to complete a two-year degree program in liberal education.

The Associate in Fine Arts degree (AFA) focuses on developing an understanding of the specific arts disciplines of either design, dance, drama or visual arts through the intensive study of technique, history, theory and hands-on approaches in studio work and/or performance. The Associate in Fine Arts degree is designed to provide students with the knowledge necessary to achieve seamless articulation in a Bachelor of Fine Arts program.

The Associate in Science degree (A.S.) is awarded to those who have successfully completed programs intended as pre-baccalaureate in such areas as biology, business administration, criminal justice, engineering, mathematics, public administration and science.

The Associate in Applied Science degree (AAS) is a specialized career-focused degree program that prepares students for entry into the job market. Articulation agreements with select colleges and universities provide transfer opportunities for some AAS degrees.

Dual Degree

To earn a dual degree, one program is selected as the primary degree and another as the secondary degree. All requirements for both degrees must be completed with at least a 2.0 grade point average. Comparable courses from the primary degree may be used to meet the requirements of the secondary degree, but a minimum of 21 separate, additional CCM credits must be earned in the secondary degree. Since all requirements for both degrees must be met, more than 21 credits may be necessary in cases where the two degrees do not have many common, shared courses. A student will not be permitted to apply for a dual degree in Nursing and Allied Health. For more information, contact the Office of Records and Registration (http://www.ccm.edu/admissions/recordsRegistration).

Certificate Programs

CCM offers a number of college-credit programs of varying lengths that lead to certificates. The programs are designed to meet the needs of individuals for self-development, occupational advancement or career transitioning. Students who follow a career ladder from certificate to degree expand their programs to include more general education requirements. Each program is specifically designed to apply the appropriate credits earned in certificate courses toward meeting the degree course requirements. In addition, the college also offers a wide range of non-credit certificate and certification programs.

Cooperative Education and Internships

Cooperative education and internship experiences offer students opportunities to integrate work experience and classroom instruction through partnerships between employers and the college.

Each participating academic department assigns a faculty advisor who works with the Office of Career Services and Cooperative Education to identify positions that are commensurate with the goals of the instructional program, the needs of the employer and the skills of the student.

Students interested in participating in a cooperative educational learning experience must:

• Be matriculated in County College of Morris (CCM) majors that offer co-ops and/or internships
• Have completed most of the coursework in their majors at CCM
• Have cumulative averages of 2.0 or better, and
• Have the approval of their academic departments

Cooperative Education and/or Internship experiences are offered in the following areas:

- Biology
- Biotechnology
- Media Studies, Broadcasting
- Business
- Chemical Technology
- Chemistry
- Communication
- Criminal Justice
- Culinary Arts and Sciences
- Dance
- Digital Media Technology
- Early Childhood Development
- Early Childhood Education
- Electronics Engineering Technology
- Fire Science
- Graphic Design
- Hospitality Management
- Information Technologies
- Landscape and Horticultural Technology
- Mechanical Engineering Technology
Music Recording
Photography Technology
Telecommunications Systems Technology

Students who wish to learn more about cooperative education or internships should contact the Office of Career Services & Cooperative Education or speak with their department chairs.

Study Abroad Program

To provide its students with access to a global education, County College of Morris offers study abroad opportunities through its membership to the College Consortium for International Studies (CCIS). The consortium has programs in 25 countries with courses in a variety of major areas.

Most programs require at least 15 credits of completed course work and a minimum grade point average of 2.5 to apply. Study abroad participants are subject to additional fees and tuition, but financial aid may be available to qualified students.

For details on how to study abroad, students should visit CCM's study abroad webpage (http://www.ccm.edu/studyabroad) well in advance of the planned semester abroad. In addition, students may stop by the Languages and ESL Department in Emeriti Hall, Room EH120, or call 973-328-5420.

Directions

County College of Morris, 214 Center Grove Road, Randolph, NJ 07869

**Entrances are on Center Grove Road, Route 10 East and Dover Chester Road**

1. From Paterson, Clifton, Ramsey and related areas:
   Take Route 46 or 80 West to intersection of Route 287 South in Parsippany. Remain on 287 to Route 10 West; continue on Route 10 West to Randolph, noting CCM signs on right-hand side of highway shortly after entering Randolph. Make left turn on Center Grove Road. College entrance is half mile on right side of road.

2. From New York City via Lincoln Tunnel:
   On Jersey side of tunnel travel West on Route S-3 to intersection with 46. Take 46 or 80 West to Route 287 South, to Route 10 West; continue on Route 10 West to Randolph, noting CCM signs on right-hand side of highway shortly after entering Randolph. Make left turn on Center Grove Road. College entrance is half mile on right side of road.

3. From New York City via George Washington Bridge:
   On Jersey side of bridge follow signs to Route 80 West to Route 287 South, to Route 10 West; continue on Route 10 West to Randolph, noting CCM signs on right-hand side of highway shortly after entering Randolph. Make left turn on Center Grove Road. College entrance is half mile on right side of road.

4. From Newark, the Oranges, Livingston and related areas:
   Take Route 280 to intersection of Route 80 West. Follow Route 80 to intersection of 287 South in Parsippany. Remain on 287 to Route 10 West; continue on Route 10 West to Randolph, noting CCM signs on right-hand side of highway shortly after entering Randolph. Make left turn on Center Grove Road. College entrance is half mile on right side of road.

5. From Port Jervis, Newton and related areas:
   Travel South on Route 206 to Route 46 East to Route 10 East to Dover Chester Road, noting CCM signs on right side of highway. College entrance is 400 feet on left side of road. Or you can take the entrance off of Route 10 East.

6. From Philadelphia and related areas:
   Take New Jersey Tpk. North to Route 287 exit North on 287 to Route 10 West; continue on Route 10 West to Randolph, noting CCM signs on right-hand side of highway shortly after entering Randolph. Make left turn on Center Grove Road. College entrance is half mile on right side of road.

7. Trenton, Princeton, Somerville & related areas:
   Travel North on 287 to Route 10 West; continue on Route 10 West to Randolph, noting CCM signs on right-hand side of highway shortly after entering Randolph. Make left turn on Center Grove Road. College entrance is half mile on right side of road.

8. Union and Springfield areas:
   Take Route 78 to Route 24 West, to Route 287 North, to Route 10 West; continue on Route 10 West to Randolph, noting CCM signs on right-hand side of highway shortly after entering Randolph. Make left turn on Center Grove Road. College entrance is half mile on right side of road.

- **Public Transportation**
  Bus service from the Morristown area to County College of Morris is available through the New Jersey Transit No. 875 bus route. New Jersey Transit also supplies train service to Dover from the surrounding area. Schedules for the various routes are available at the Student Community Center Information Window or by visiting www.njtransit.com (http://www.njtransit.com).

- **Carpool Information**
  TransOptions can provide commuters with personalized carpool planning and transportation assistance. For more information please call TransOptions at 973-267-7600.

Distance Learning

Distance Education

Distance education is a convenient and flexible way to take courses for college credit. Students can take classes to earn a degree or explore personal interests. We have several types of distance learning classes: online, hybrid, and interactive TV (ITV). Since these are fully credited college classes, you must be admitted to the college to take any of these courses. Registration for these classes follows the same procedures and deadlines as traditional on-campus courses. Students should be comfortable with basic computer programs and concepts such as, but not limited to, email and attachments of files. For more information regarding these exciting learning opportunities for college credit, please consult the Distance Learning website at www.ccm.edu/vclassrooms (http://www.ccm.edu/vclassrooms) or call 973-328-5184.

County College of Morris now also offers online degrees in Humanities/Social Science and Business Administration (please note, however, that you may be required to come to campus for
course specific orientation and/or testing, depending on your professor’s requirements).

**Online Courses**

In an online course, all instruction traditionally provided in class is replaced with instruction online. Online courses require students to have access to a computer, the Internet and email. Students do not meet with their instructors at a specific time or on campus, but must participate regularly in the coursework online through special software throughout the regular semester. These courses do not require the learner to be online at any specific day or time; however, they do run on a strict schedule that outlines when course work must be completed and when topics are introduced. Lessons, assignments, projects, quizzes and faculty/student interactions are completed using the Internet. Faculty may require students to come to campus for special course orientations, meeting dates, projects and tests. Photo ID is required.

**Hybrid**

In a hybrid course, instruction is provided both in-class and online (in any combination). The online portion reduces the amount of in-class time that is traditionally required. Hybrid courses combine the benefit of traditional face-to-face in-class learning with the independence of online learning. Students are required to attend class on-campus during a specific meeting time in addition to completing course work online.

**Interactive TV**

Interactive TV (ITV) classes are similar to a traditional college class in that weekly attendance on campus is required. They differ in that course content is delivered via a television and video network and to more than one college at the same time. Students can see fellow classmates and the instructor through a video screen and communicate through the use of a microphone.

**Governance**

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John Cesaro, Deputy Director
Kathy DeFillippo
Hank Lyon
Thomas J. Mastrangelo
Christine Myers
Deborah Smith

*as of January 2017*

**County College of Morris Board of Trustees**

All trustees also serve concurrently as members of the County College of Morris Foundation.

**Members noted with an * serve as Foundation Board of Directors.**

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Paul R. Licitra, Vice Chair
Laurie Bogaard, Esq., Treasurer
Thomas A. Pepe, Secretary
Jeffrey M. Advokat, Esq.
Jack N. Frost, Jr. Esq.
Francis P. Giarratano
Dr. Barbara L. Hadzima *
Roger A. Jinks
Dr. Joseph S. Weisberg *
Claudia Saavedra, Alumni Trustee
Sandra Geiger, Trustee Emerita
W. Thomas Margetts, Trustee Emeritus

*as of January 2017*

All trustees also serve concurrently as members of the CCM Foundation. Members noted with an * serve on the Foundation Board of Directors.

**County College of Morris Foundation Board of Directors**

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Eileen Paragano ’91, Vice Chair
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Sandra Geiger
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Thomas F. Hayes
Allan J. Iskra, Esq.
Edward Nelson ’72
Dr. Joseph L. Ricca, Jr.
Everton Scott
Access to Student Files

1. The Family Educational Rights and Privacy Act of 1974 (FERPA), also known as the Buckley Amendment, gives students the right to inspect and review all their educational records except for:
   a. Financial records of the student’s parents.
   b. Confidential letters or statements placed in the file prior to January 1, 1975.
   c. Psychiatric or medical records retained by a professional for treatment purposes.

2. If students wish to inspect or review their academic records, they should put their request in writing and submit the request to the Registrar in the Office of Records and Registration. The law permits the college 45 days to respond to such requests, but every effort will be made to accommodate such requests as quickly as possible. Upon receipt of the signed, written request, an appointment will be set up for the student to review the file.

3. The Family Educational Rights and Privacy Act also states that the college may not release educational records or personally identifiable information to any individual agency or organization unless there is the written consent of the student or a court order (subpoena). In the case of a subpoena, the student will be notified by mail or if you are a current student via your CCM email account. Please contact the Office of Student Development and Enrollment Management if you have any questions concerning this law. Students have the right to waive their rights to privacy by completing the appropriate form in the Office of Student Development and Enrollment Management.

Rights, Rules, Regulations and Policies

The Right to Function

County College of Morris, as a publicly supported institution of higher learning, has an obligation to provide educational opportunity to the total community which supports it. It is the right of the public to expect, and the responsibility of the college to ensure, that this opportunity is maintained free from interference or disruption by persons who seek to impose upon the college, through force, their own points of view, special interests or demands.

The college can neither condone nor tolerate any forcible activity which disrupts, obstructs or interrupts the facilities or operation of the college, and persons participating in such activity will be subject to dismissal from the college and to applicable civil or criminal penalties.

While the college is unswerving in its determination to prevent forcible disruption of its operation, it will guard with equal determination the preservation of academic freedom on the campus and the rights and freedoms of its constituent members as provided by law to all citizens. Reference here is to the right of peaceful protest, the right of non-obstructive demonstration, the right to be heard and the right to receive consideration by the college on issues of concern.

A specific listing of rights, rules and regulations are provided in the navigation area.

Animals

For reasons of health and safety, unless specifically authorized, domestic pets may not be brought on campus or allowed within a college building. Anyone bringing animals on campus or into buildings will be subject to disciplinary action. Animal Control will remove animals left unattended inside of automobiles.

Bicycles

Bicycles and skateboards are not allowed to be ridden on campus walkways or in parking lots, or brought into college buildings. Bike racks have been provided in Parking Lot 5 to lock bikes. You must provide your own locking device.

Campus Parking

All student cars parked on campus must be registered with the college’s Public Safety department. Parking permits are available at no cost to students and may be acquired during registration or at Public Safety located at 675 Route 10 East (opposite Parking Lot 7), 24 hours a day, seven days a week. An Online Permit Registration (http://reportproserver.ccm.edu/CESIReportExec/cpr/OPRMain.aspx?isAuth=1&groupid=102&groupname=PUBLIC+SAFETY) service also is available. A leaflet detailing the college parking regulations is available from Public Safety.

If you fail to obtain a decal within 10 days of the first day of classes or employment, you are subject to being ticketed and having your vehicle towed from campus at your own risk and expense. Decals are color-coded and student decals remain valid for six semesters (three years). It is not necessary for students to obtain a new decal for each semester they are here unless the original decal has expired.

Traffic fines may be paid at the Bursar’s office, Student Community Center, from 8:30 a.m. to 4:30 p.m. and until 6:30 p.m. on Mondays or Thursdays, or paid by mail. Fines must be paid immediately whether or not you intend to appeal the citation.

NOTE: If you have campus traffic fines outstanding, you will NOT be permitted to receive final grades or have transcripts of grades transmitted until all fines are satisfied.

The speed limit on campus is 25 mph, unless otherwise posted. Vehicles are to drive on the roadways and park in designated areas. Parking Lot 5 is reserved for staff and faculty. Students may park in Lot 5 after 5 p.m. Parking Lot 7 is designated for students. Parking Lot 8 is for employees and reserved parking. It is also a low-away lot.
Conduct Policy

County College of Morris (CCM) was founded by the citizens of the county with the belief that learning is a lifelong process and that education can improve the quality of life for individuals and society.

CCM is a community of individuals. As such, we must strive to recognize the dignity and worth of each member of our community. It is, therefore, the policy of the college that each individual, regardless of status (student, administrator, support staff or faculty member) must treat every other individual, irrespective of status, rank, title or position, with dignity and respect. The college recognizes the diversity of its community. We come from many different backgrounds and learning to understand the differences among us, as well as the similarities, is an important dimension of education, one that continues for a lifetime. Tolerance alone is not enough. Respect and understanding are also needed. We should delight in our differences, and should seek to appreciate the richness and personal growth which our diversity provides us as members of this community.

All students are governed by college rules and regulations. Students are expected to give prompt and courteous attention to all collegiate duties and to respect the property and rights of the college and others. Students also are responsible for their own actions and are expected to maintain proper standards of conduct at all times.

The purpose of the Student Code of Conduct is to protect the college, its academic and social community, and its property from harm resulting from acts of its students that may cause injury or threat of injury. The code defines prohibited conduct and provides imposition of appropriate discipline upon those students whose acts violate the standards of conduct by means of hearing procedures that afford both prompt disciplinary determinations and appropriate due process to the alleged violator.

The college has adopted a separate Academic Integrity Policy and Procedure which defines acts of academic dishonesty and sets forth the procedure for determining whether academic dishonesty has occurred and, if so, the appropriate discipline to be imposed.

The following acts, when committed by CCM students, shall be deemed misconduct under this code, subject to imposition of discipline under this code. This code applies to conduct engaged in while attending college functions on campus or off campus, or functions of college-sponsored organizations conducted on campus or off campus.

1. Intentionally or recklessly causing physical or psychological harm to any person, or intentionally or recklessly causing reasonable apprehension of such harm.
2. Engaging in hostile, harassing, intimidating or bullying conduct, or disorderly behavior that creates an imminent or perceived risk of violence or damage to property that might impede the teaching/learning environment, or that is likely to cause emotional harm by mocking, ridiculing or disparaging a targeted student or group of students.
3. Engaging in abusive or demeaning conduct or obscene gestures directed toward another individual or group of individuals that has the effect of creating a hostile environment and impedes the rights and privileges of other members of the college community.
4. Unauthorized use, possession or storage of any weapon.
5. Intentionally initiating or causing to be initiated any false report, warning or threat of fire, explosion or other emergency.
6. Intentionally or carelessly disrupting college operations or college-sponsored activities.
7. Use, possession, distribution or sale of or being under the influence of illegal narcotics, chemicals, psychedelic drugs or other dangerous substances. (See CCM Substance Abuse Policy.)
8. Furnishing false information to the college including forgery, alteration or misuse of college documents, records or identification.
9. Unauthorized access to, modification of or transfer of electronic data, system software or computing facilities or improper use of college-provided technology of any kind.
10. Theft of college property, knowing possession of stolen college property or theft of personal items from campus facilities.
11. Destruction, damage or misuse of property of the college or others on campus.
12. Failure to comply with reasonable directions of college officials issued in the performance of their duties intended to ensure the orderly or safe conduct of college programs, activities or operations, or the proper orderly and safe use of college property.
13. Unauthorized presence in or use of college premises, facilities or property.
14. Unauthorized use and/or possession of fireworks on college premises.
15. Any gambling that is not authorized by the college or under the laws of the State of New Jersey.
16. Unauthorized use or misuse of the college name for soliciting funds or for sponsorship of activities or on printed matter.
17. Violation of college regulations or policies, including campus motor vehicle regulations, the college’s smoking policy, or federal, state or local laws.
18. Violation of the terms of any disciplinary sanction imposed in accordance with this code.
19. Unauthorized use of electronic recording or communication devices.

The comprehensive and complete Student Code of Conduct and Disciplinary Appeals Procedures may be obtained from the Office of Student Development and Enrollment Management, Student Community Center, Room 132.

Fire Procedure

Fires should be reported immediately by activating the nearest fire alarm and by notifying the nearest college official. You may also dial the emergency number 973-328-5550 or use the emergency boxes located throughout the campus.

Buildings must be evacuated when the fire alarm sounds. Evacuations must be done in an orderly fashion using the exit that is nearest to you that is clear of the emergency. Move 50 feet away from the building; do not re-enter until the all-clear siren has sounded. Take all personal items with you when exiting a building, such as books, purses and jackets.
Hold on Student Records

Students who fail to meet their obligations to the college, financial or otherwise, will have their academic records placed on “hold” until the obligation is resolved to the satisfaction of the college. No grade report, transcript or diploma will be issued on the student’s behalf until obligations are satisfied in full. Once the obligation is satisfied, it is the student’s responsibility to notify the Office of Registration and Records.

Sexual Harassment Policy

County College of Morris reaffirms its desire to create an academic/work environment for all students, faculty and staff that is not only responsible but also supportive and conducive to the achievement of education/career goals on the basis of such relevant factors as ability and performance. Students and college personnel are required to maintain an environment that allows all students and all college employees to enjoy the full benefits of their learning experience or work. The use of implicit or explicit coercive sexual behavior to control, influence or affect the performance or status of an individual is prohibited.

Any student, faculty member, staff or administrative employee determined to have been engaged in sexual harassment will be subject to immediate and appropriate disciplinary sanctions. The college has established a procedure to be followed in reporting and investigating complaints of sexual harassment. Any member of the college community who believes he or she has been subjected to conduct that violates this policy should follow the “Procedures for Reporting and Investigating a Sexual Harassment Complaint.” Copies of this procedure are available from the Office of Student Development and Enrollment Management, the Office of Human Resources, and the Office of Counseling Services and Student Success.

Smoking Policy

County College of Morris is a smoke-free campus. Smoking is banned in all campus buildings and anywhere on campus grounds. Smoking is only permitted in vehicles not owned by the college. Smoking fines start at $50 and increase substantially for every offense thereafter. Fines must be paid within 10 days of the date they are issued. If an appeal is filed and upheld, the fine will be refunded.

The College

History

County College of Morris (CCM) is located on 222 acres of rolling terrain in Randolph. The college first opened its doors to students in 1968 after Henderson Hall, the first building on campus, was completed. The first class consisted of 592 full-time and 703 part-time students. Enrollment grew quickly, and by the fall of 1969 five additional buildings were under way: the library, later named the Sherman H. Masten Learning Resource Center after CCM’s first president; Sheffield Hall; the Physical Education Building; the Student Community Center and a service building; all completed by 1970. In the fall of 1973, two additional academic buildings, Cohen and DeMare halls, were completed. In 1982, the college reached its highest enrollment of 12,012 students. That same year the Dalrymple House was renovated to house administrators. It was renovated again in 1994 to serve as a childcare center.

When President Masten retired in 1986, Dr. Edward J. Yaw became the second president of CCM. Under his leadership, the college continued to grow. In 1989, Emeriti Hall was added and in May 1993, the college completed a 20,000 square-foot expansion of the library. The expansion contained television and audio production studios, additional library seating areas and a 45-seat conference room.

Expansion of the campus continued in 1994 with the construction of two additions that joined the three academic science buildings. The 20,417 square-foot expansion added classrooms, laboratories, faculty offices, student lounges and an expanded cafeteria. In 1997, the college also opened a six-lane aquatic facility joined to the Health and Physical Education Building.

In 2004, the college broke ground for the renovation and expansion of the Student Community Center. By the Fall 2005 Semester, the building was open for students to enjoy. All enrollment and counseling functions were brought together in that facility including Admissions, Financial Aid, Academic Advising, the Bursar and Counseling. The project also included an expanded campus store, renovated auditorium, cafeteria, game room and television lounge. One more exciting feature included a teaching kitchen, plus a dining/conference room for the Hospitality Management Program.

Following completion of the Student Community Center project, the college renovated Henderson Hall, CCM’s oldest building which opened in 1968. The renovation, completed in the spring of 2008, houses most of the administrative functions of the college, plus four general purpose classrooms and two corporate business training rooms. That same year, the college celebrated its 40th anniversary. In those 40 years, CCM had graduated more than 40,000 students who were employed in all sectors of the county, most notably half of the county police force and half of the county nurses.

The 2008-09 academic year was also marked by more renovations. Many parking lots, sidewalks, stairs and athletic fields were renovated. In addition, nursing laboratories were renovated along with major renovations to the interior and exterior of Emeriti Hall. During the 2010-11 academic year, the Academic Complex underwent a major renovation including the installation of energy-efficient lighting. That year the college also started construction of a new Landscape and Horticultural Technology building as its first LEED certified building. Included among the building’s many green features are geothermal heating and cooling, photovoltaic roof panels, and a vegetated flat roof and rain collection system.

Building upon the college’s sustainability efforts, the Morris County Improvement Authority in 2012 installed solar panels over Parking Lots 2, 5, 6, 7 and 8 and on the rooftop of the Student Community Center. New exterior energy-efficient lighting also was installed by the college throughout the campus.

Also in 2012, the college purchased a one-story commercial building on Route 10 in Randolph as its first major expansion in nearly four decades. The 15,500 square-foot building located at 675 Route 10 East has allowed the college to increase classroom space to meet growing academic needs.
In 2014, the college completed an extensive renovation to the Learning Resource Center (LRC), which included consolidating the library on the second floor, a major expansion of the college’s gallery and the addition of a café.

In 2015, the Media Center, located within the LRC, was renovated and renamed in honor of late Assemblyman Alex DeCroce. That renovation was funded with $1 million from the Morris County Board of Freeholders’ capital budget and $900,000 raised by the CCM Foundation in individual, corporate, private foundation and public support.

In early 2016, the college opened its Music Technology Center, a state-of-the-art facility that houses the digital media technology, drama, media technology, music and music recording academic programs. The facility includes an experimental theater lab – theater in-the-round – that serves as a large hands-on classroom with a recording studio. Also included are two standard classrooms, an electronic music/aural comprehension classroom and piano lab, a second recording studio, scene shop, dressing rooms and multiple student practice rooms. The $8.5 million facility was constructed with funds provided through the Building Our Future Bond Act that was approved by New Jersey voters in 2012.

After serving as president for 30 years, Yaw retired in 2016 and Dr. Anthony J. Iacono became the college’s third president.

Accreditation

County College of Morris is licensed by the State of New Jersey and accredited by:

Middle States Commission on Higher Education
3624 Market Street
Philadelphia, PA 19104
267-284-5000

The Middle States Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

The Business programs A.S. Business Administration, A.A.S. Business Career, A.A.S. Hospitality Management and A.A.S. Restaurant and Culinary Management: an option within Hospitality Management are accredited by:

Accreditation Council for Business Schools & Programs
11520 West 119th Street
Overland Park, KS 66213
913-339-9356
www.acbs.org


The Nursing program is fully accredited by:

New Jersey Board of Nursing
124 Halsey Street, 6th Floor
Newark, NJ 07101
973-504-6430
http://www.njconsumeraffairs.gov/nur

The Respiratory Therapy program is accredited by:

Joint Review Committee on Education in Radiologic Technology, JRCERT
20 N. Wacker Drive, Suite 2850
Chicago, IL 60606-3182
312-704-5300
www.jrcert.org

The Radiography program is accredited by:

State of New Jersey Department of Environmental Protection - Radiologic Technology Board of Examiners
P.O. Box 415
Trenton, NJ 08625
609-984-5890
www.nj.gov/dep

Changes and Cancellations

Because of the uncertainties regarding course enrollment and appropriation of public funds for community colleges, the college reserves the right to modify, alter or cancel any of its programs, courses or services.

The college reserves the right to change instructors, to cancel, combine or divide courses, to change the time, date or place of meeting, to change the cost per course, and to make other necessary decisions in these course offerings, and to do so without obligation. The college may cancel a course if registration fails to meet expected levels. If a course is cancelled, we attempt to notify participants through student email prior to the first class meeting. Students will receive a full refund. The college is not responsible for errors in printed and online materials.

Mission and Values Statement

Mission Statement

The County College of Morris mission is to deliver dynamic, challenging, high-quality, and accessible academic programs and services that support the individual’s quest for lifelong learning and professional development.
Values Statement

Commitment to the Academic Mission of the College

Our first commitment is to the academic mission of the college. It entails the search for truth and respect for scholarship and learning. We maintain a campus environment where students and faculty are free to explore ideas, are committed to honesty and fairness, encouraged to take risks and succeed to the best of their abilities. Our commitment is to the education of the whole person and to excellence in teaching in all of our academic programs.

Commitment to Honesty and Integrity

We are committed to honesty and integrity in all that we do. We value academic honesty in the search for truth. We are committed to integrity in maintaining our fiduciary responsibility and financial soundness.

Commitment to Accessibility

We provide access to our programs and services to all who may benefit from them regardless of their financial, academic, educational or physical challenges.

Commitment to Diversity

We maintain an environment that values diversity and respects individual differences. We respect the dignity of every person and will not tolerate behavior that infringes upon individual rights.

Commitment to People

We maintain a secure and comfortable working and learning community. This community is responsive to the needs and expectations of students and employees. We treat them fairly, encourage individual development, recognize accomplishments, promote open communications and empower them to improve the processes for which they are responsible.

Commitment to Community

We are also committed to the community at large. We gladly accept our responsibility as good neighbors and willingly apply our talents and skills to the issues and concerns of the community. We pursue partnerships with educational, cultural, professional, business and governmental entities. These endeavors enable members of the community to engage in an interchange that enhances their lives as well as the life of the college.

Title IX, Section 504 and Americans with Disabilities Act

County College of Morris (CCM) policies prohibit discrimination against any individual covered by protected classifications under federal or state law. CCM supports the protections available to members of its community under the Rehabilitation Act of 1973. In compliance with Section 504 of the Rehabilitation Act of 1973, accommodations for those with disabilities will be extended by CCM, including the provision of special assistance to qualified students with disabilities within the college. This assistance may include taped text, extended time for tests, sign language interpreters or other appropriate and reasonable accommodations to allow students with disabilities to access their education. In compliance with the Americans with Disabilities Act (ADA) of 1990, CCM prohibits discrimination against individuals with disabilities in employment, public services and transportation, public accommodations and telecommunications, including age pursuant to the Age Discrimination Act. Inquiries regarding compliance with federal or state anti-discrimination laws may be directed to the Compliance Officer, at 973-328-5551 or by mail to:

Compliance Officer
County College of Morris
214 Center Grove Road
Randolph, NJ 07869

Tuition, Fees and Financial Aid

County College of Morris is able to provide high-quality educational programs at a reasonable cost because it is publicly supported by the State of New Jersey and Morris County.

Tuition and fees are based on the 2017-2018 rate and may increase in the next academic year. For the most up-to-date tuition and fees, check the college’s website at www.ccm.edu for the semester you plan to enroll.

Within limits imposed by law, the college reserves the right to alter its tuition and fees or to levy other charges and fees deems necessary to maintain effective operations.

Books and Materials

Depending on the particular program of study, a full-time student may pay approximately $700 per semester for books and materials.

Differential Fees

For Out-of-County Students

To recover tuition costs not paid for by the county, out-of-county students pay a Differential Fee in addition to their tuition. See “Chargeback” section for information on how to reduce their costs.

For Out-of-State Students

To recover tuition costs not paid for by the county or state, out-of-state students must pay a Differential Fee in addition to their tuition.

Chargeback

(For students who live out-of-county.)

Out-of-county residents may pay in-county rates if they present, along with their tuition payment, a completed out-of-county chargeback form. Forms and instructions are available from your local county college. A new chargeback form is needed for each semester. The college cannot accept chargeback from prior semesters.

Fees (As of Summer 2017)

Accident Insurance
County College of Morris requires all health professional students to carry health insurance.

Application Fee (non-refundable) $30

One time fee, unless you choose not to attend in the academic year in which you apply.

CLEP Testing Fee $25

College Fee (per-credit) $29

External Proctor Services $50 per two-hour block

Course Fee Go to www.ccm.edu (http://www.ccm.edu) and search for "tuition and fees."

Department Exam Fee $50

Graduation Fee (non-refundable) $30

Graduation candidates are charged a graduation fee.

I.D. Card Replacement

First Replacement $5

Second Replacement $10

Third Replacement $25

Late Payment Fee $40

Charged to students who fail to have their payment in the Bursar's office by the designated due date. Postmarked dates are not acceptable.

Make-Up Examination Fee $5

Charged to students who miss a final examination and who are permitted to take a make-up examination.

Registration Fee (per course) $7

Reinstatement Fee $100

Students who have been withdrawn by the college for nonpayment after the first day of the academic term and who are reinstated into their original courses are assessed a $100 fee.

Returned Check Fee $50

Service Fee (per course) $10

Students who completely withdraw after registering for classes or who are deleted from their classes for non-payment are subject to a service fee.

Technology Fee (per course) $14

Online Fee (per course) $25

Online with Streaming Video (per course) $45

Criminal Background Check $100

Morristown Site Fee (per course)

Accuplacer Re-Testing Fee $10

Transcript Fee $5

Health Records Transcript Fee $5

Financial Aid

County College of Morris (CCM) recognizes that the responsibility of meeting college expenses can be difficult for many families. In keeping with CCM's mission, the college attempts to provide financial assistance to full-time and part-time students who would otherwise be unable to attend. Student financial aid is available in the form of scholarships, loans, grants and part-time employment. Aid also may be available to assist those students participating in an approved consortium agreement with other area colleges (Domestic (http://www.ccm.edu/Media/Website%20Resources/pdf/financialAid/ccmCONSORTIUM%20DomesticWeb.pdf)) or the Study Abroad (Mobility (http://www.ccm.edu/Media/Website%20Resources/pdf/financialAid/consortium_studyabroad.pdf)) program.

Application Process

To apply for need-based federal financial aid (Pell, SEOG, loans and college work study), New Jersey state grants or scholarships (TAG, EOF and NJSTAR), and most CCM scholarship programs, the student is required to fill out and submit a Free Application for Federal Student Aid (FAFSA (https://fafsa.ed.gov)). FAFSAs are available from high school guidance offices or online at www.fafsa.ed.gov (http://www.fafsa.ed.gov). The FAFSA must be filed each academic year that the student plans on enrolling. To allow ample time for processing and eligibility notification, applicants are urged to file their FAFSA by March 1 or no later than the IRS filing period (April) each year. Students and parents who want to apply for Federal Student Aid (http://studentaid.ed.gov) must apply for a FSA ID (https://fsaid.ed.gov/nas). The FSA ID allows them to sign electronically upon completion of the FAFSA, in addition to accessing information at a later date if needed. The County College of Morris Federal Title IV School Code is 007106. This code must be entered on the application when filing, ensuring the college's receipt of processed applications. Additionally, federal Stafford loan borrowers (subsidized, unsubsidized or parental PLUS loans) must complete an online Direct Master Promissory Note (Loan Application) and an online Entrance Counseling by visiting www.studentloans.gov (http://www.studentloans.gov). For more information of federal aid visit: http://studentaid.ed.gov. For New Jersey, visit www.hesaa.org/ (http://www.hesaa.org). For additional assistance with the aid application process or downloading forms, visit www.ccm.edu/admissions/FinancialAid (http://www.ccm.edu/admissions/FinancialAid). The Office of Financial Aid is located in the Student Community Center, Room 210 and can be reached by phone at 973-328-5230, by fax at 973-328-5237, or by emailing finaid@ccm.edu (finaid@ccm.edu).

NOTE: The primary method of communication by the Office of Financial Aid is electronic through the college's student email system. Students may also view their awarded aid and/or documents that may be requested by CCM online at WebAdvisor (https://webadvisor.ccm.edu/WebAdvisor/WebAdvisor?TYPE=M&PID=CORE-WBMAIN&TOKENIDX=867493452) Items requested (selected for verification (http://studentaid.ed.gov/fafsa/next-steps/correct-update)) must be clear, readable copies, indicating their CCM student identification number on each page. Items requested by us may be downloaded from our forms.
Requirements for Receiving Federal and New Jersey State Assistance

To receive financial assistance, a student must meet the following eligibility requirements:

1. Be a citizen of the United States or eligible non-citizen.
2. Demonstrate financial need (except for Unsubsidized Stafford Loans).
3. Register with Selective Service (https://www.sss.gov/default.htm), if required (males only).
4. Be accepted as a matriculated student, enrolled in a degree granting program or financial aid eligible certificate program at CCM.
5. Not owe a refund on a federal grant or be in default on a federal educational loan.
6. Maintain satisfactory academic progress (http://www.ccm.edu/Media/Website%20Resources/pdf/financialAid/SAP_Policy_eng.pdf) according to federal, state and institutional guidelines.
7. Have class attendance verified prior to the release of all expected funds.
8. Register for courses applicable toward your current major or have approval of substitution course(s) from your academic dean or department chairperson. See your program evaluation on WebAdvisor and or your academic advisor. **Attention:** Financial aid amounts are subject to change based on courses and credit total registered for each term.
9. Submit all requested documents to the Office of Financial Aid. Failure to do so in a timely manner will result in the office's inability to continue its determination of eligibility for financial assistance which may result in the cancellation of all awarded aid.
10. An official withdrawal from individual classes or from the college is required. Failure to do so may result in the cancellation or reduction of your awarded aid.
11. Enrolled Full-time (12 or more credits) or Quarter-time (9-11 credits) or Part-time (6-9 credits) or Less half-time (5-3 credits) per semester. **Note:** eligibility may vary based on award type (i.e PELL, SEOG Loans, TAG, etc.)

**Special Note:** Non-matriculated students (certificate and general credit courses) and students auditing courses are not eligible for state or federal assistance of any kind, including the Federal Direct Stafford Loans (http://studentaid.ed.gov/types/loans/subsidized-unsubsidized).

**Note:** Challenge and/or standardized exams may not be used to satisfy part- or full-time status in determining financial aid eligibility. Fees for credit-by-exam options will not be paid by financial aid.

All federal and state financial aid awards are based on need and are awarded without regard to race, religion, creed, age, sex or handicap.

Scholarships

The college offers a number of scholarships granted on the basis of academic performance and related achievements through the General Scholarship program. Applications for institutional scholarships are available online at www.ccm.edu/admissions/financialAid/Scholarships.aspx (http://www.ccm.edu/admissions/financialAid/Scholarships.aspx).

Federal and New Jersey State Financial Aid Programs

Students may be eligible for need-based financial aid available through New Jersey state and federal programs. These awards may come from more than one source and are called financial aid packages. A package may consist of grant, scholarship, loan and campus employment assistance.

- A grant or scholarship is financial aid that does not have to be repaid.
- Loans are borrowed monies that must be repaid with interest, after the student graduates, withdraws or is enrolled less than half-time (6-11 credits per term) at the college. For more information, visit www.studentloans.gov/ (https://www.studentloans.gov).
- Student Employment (FWS) consists of campus jobs and provides an excellent opportunity for students to meet and work with faculty, staff and fellow students while learning skills that could impact positively on their future. This award is not applied to tuition charges. Rather, payment is made directly to the student in the form of a paycheck once required biweekly time-sheets (http://www.ccm.edu/pdf/FWS_Time_Sheet_Green.xlsx) are processed.

New Jersey State Grants (partial listing)

Tuition Aid Grant (TAG) is awarded to students who are enrolled as undergraduates with at least 6 college credits. Applicants must demonstrate financial need. For complete listing go to http://www.hesaa.org/Pages/NJGrantsHome.aspx. **Attention:** FAFSA must be filed by State deadlines for eligibility, for dates visit http://www.hesaa.org/Pages/StateApplicationDeadlines.aspx.
Parents. The FAFSA must be submitted. The NJCLASS loan is designed as a supplemental source of funding after application for financial assistance through sources such as grants or other loans. This loan has an administrative processing fee, which is deducted from the proceeds on the approved amount. For a complete listing of New Jersey State Financial Aid Programs call 1-800-792-8670 or visit http://www.hesaa.org/.

Federal Grants

The Federal Pell Grant (http://studentaid.ed.gov/types/grants-scholarships/PELL) is awarded to eligible undergraduate students who are enrolled (3 or more credits per term) and demonstrate financial need and do not have a bachelor’s degree. The Federal Supplemental Educational Opportunity Grant (FSEOG) (http://studentaid.ed.gov/types/grants-scholarships/fseog) is awarded to undergraduate students who demonstrate exceptional financial need. Awarding is done on a first-come, first-served basis. Limited funds are available.

Federal Stafford Loan Program

Subsidized Stafford loans are based on financial need, which is determined by using a federal formula. A loan is subsidized when the government pays the interest for the student under certain defined circumstances.

Unsubsidized Stafford loans are not based on federal need and are available to all students regardless of income. Because the government does not subsidize the interest, the student is responsible for all interest, which accrues during in-school, grace and deferment periods.

In addition to completing the FAFSA, student loan applicants must complete the online federal direct loan Master Promissory Note (Application) and the online Entrance Counseling. Visit www.studentloans.gov. Once students complete these steps, the Office of Financial Aid will certify the loan application through the U.S. Department of Education which in turn will disburse the awarded amount directly to the college. Student loans are disbursed in two installments, one per term, upon verification of class attendance.

Repayment for borrowed amount is required six months after separation from the college. Failure to repay your loan may result in Default (http://studentaid.ed.gov/repay-loans/default).

Attention Federal Stafford loan borrowers - Students wishing to cancel their loan must do so in writing (paper or CCM email) to the Financial Aid Office, preferable prior to disbursement. Note: Completion of the loan application and entrance counseling may be applicable for approximately 5 to 10 years after completion and therefore you may be awarded annually.

Federal PLUS Loan Program

PLUS Loans are non-need based and are available to parents of eligible dependent undergraduate students who are enrolled at least half-time. This loan cannot be used to defer tuition charges without the lender’s approval on the amount applied for because this loan is based on a credit check by the lender. Completion of the FAFSA is also required.
Federal Work-Study Program

The Federal Work-Study (http://studentaid.ed.gov/types/work-study) Program provides part-time employment on-campus and in non-profit agencies off-campus to students with financial need. A few non-profit opportunities include participation as a mentor or tutor as part of the “America Reads” or the “America Counts” programs. Students work about 19.5 hours per week and are paid on a bi-weekly basis. If awarded, visit CCM’s Office of Career Services and Cooperative Education for job placement. **Note:** This award is not deferred against tuition charges as employment is required. For additional information on the federal financial aid programs, call 1-800-4-FED-AID (1-800-433-3243). The U.S. Department of Education also maintains a financial aid website at www.studentaid.ed.gov (http://studentaid.ed.gov), www.fafsa.ed.gov (https://fafsa.ed.gov) and www.hesaa.org (http://www.hesaa.org).

Withdrawal Policy for all Financial Aid Recipients

All financial aid recipients are required to follow the college’s withdrawal procedures to ensure an “official” withdrawal. This applies to those students withdrawing from a single course or the college entirely.

Those students who fail to “officially” withdraw may have their financial aid cancelled and, therefore, would be responsible for their tuition charges out-of-pocket. Or, if aid has already been disbursed, students would be required to repay a percentage of their refund or possibly the entire amount to the college.

The date of the institution’s determination that the student withdrew varies depending on the type of withdrawal. For example, if a student begins the official withdrawal process or provides official notification to the college of his or her intent to withdraw, the date of the institution’s determination that the student withdrew would be the student’s withdrawal date or the date of the student’s notification, whichever is later. The withdrawal date may also be determined by the date the faculty informs the college that the student stops attending classes and did not officially withdraw. Based on the student’s unofficial withdrawal from the course, he or she will be assigned the grade of F. Please refer to the Academic Information section for additional information on the college’s withdrawal policies. For Withdrawal information for Financial Aid Recipients, please visit http://www.ccm.edu/admissions/recordsRegistration/WithdrawfromIndivCourse.aspx

Cost of Attendance/Student Budgets

Student budgets reflect average institutional costs and are adjusted according to federal guidelines and other miscellaneous institutional fees. The 2017-2018 average annual cost of education (http://www.ccm.edu/Media/Website%20Resources/pdf/financialAid/Est-FT-Stud-Budgets-1718.pdf) for a Morris County resident who registered full-time (12 or more credits per term) and dependent is as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition and Fees</td>
<td>$4,368.00</td>
</tr>
<tr>
<td>Books and Supplies</td>
<td>$1,400.00</td>
</tr>
<tr>
<td>Personal and Misc.</td>
<td>$1,220.00</td>
</tr>
<tr>
<td>Room/Board and Travel</td>
<td>$5,355.00</td>
</tr>
</tbody>
</table>

Total $12,343.00

Tuition and fees (based on 27 annual credits) are higher for out-of-county and out-of-state students. The tuition and fees listed above are subject to change by the college’s Board of Trustees.

Consortium Agreement Procedures

Information regarding the domestic and study abroad consortia application and conditions may be obtained online at http://www.ccm.edu/admissions/financialAid/form.aspx

Students wishing to take course(s) at another institution as part of their program of study at CCM should take the following steps.

The fully executed Consortium Agreement and all paperwork related to the processing of financial aid must be completed and on file at CCM at least 14 days prior to the enrollment period in which you plan to study. Consortium students are responsible for all “visiting” college charges out-of-pocket. Once confirmation of class attendance from the “visiting” college is received by the CCM Office of Financial Aid, the student may receive a refund check of their semester eligible financial aid, mailed by the Bursar Office.

Return of Title IV (Federal) Aid Policy

Federal financial aid recipients withdrawing from CCM are subject to the following return of federal financial aid refund policies (http://www.ccm.edu/FinancialAid/Return%20of%20TitleIVReflectionPolicy.pdf) required by federal regulation:

- Federal aid must be returned to the appropriate program in the following order:
  - Unsubsidized Federal Stafford Loan, Subsidized Federal Stafford Loan, Federal Plus Loan, Federal Pell Grant, Federal SEOG, other Title IV Aid Programs, other federal sources of aid, state, private or institutional aid.

Federal Refund Calculation

(For all federal financial aid recipients.)

Refund of federal funds to the college is based on a formula percentage, which is calculated according to the last date of attendance recorded by the college when the student was enrolled.

Note: New Jersey state and federal financial aid regulations are subject to change without notice. Additionally, changes in enrollment once awarded is also subject to change, therefore it is recommended that you contact the Financial Aid Office (finaid@ccm.edu) prior to change.

Refund Policies

Students who withdraw from the college may receive a refund based on the following schedule.

Fall or Spring (16-week courses only)

- Prior to first day of the semester – 100 percent of tuition, college and course fees.
- 1st week of the semester – 75 percent of tuition only.
Residency

It is the student’s responsibility to confirm residency status for billing purposes. Failure to do so could result in a higher tuition charge and no refund for that higher charge. While residency status must be established prior to the start of any given term, students have through the midpoint of that term to deliver all required documents to the Office of Student Development and Enrollment Management. After that date, while the residency status may be changed, students forfeit any possible refund for the current term.

Only permanent residents of Morris County are entitled to the lower in-county tuition rate. Some international students must have their permanent residency status in New Jersey for one year to qualify. All others pay the higher out-of-county or out-of-State tuition rate. Undocumented students must submit the following documents to the Office of Student Development and Enrollment Management:

1. Affidavit obtained from the Office of Student Development and Enrollment Management.
2. Any one of the following:
   a. Copy of his or her most recent 1040 or New Jersey income tax form.
   b. Copy of his or her parents’ most recent 1040 or New Jersey income tax form.
   c. Recent tax bill
   d. Recent water bill
   e. Notarized letter from individual with whom you reside
3. Valid New Jersey motor vehicle license, motor vehicle registration, voter registration card or N.J. State I.D. card showing current residential address.
4. Two pieces of current business mail sent to the student. (Personal mail or mail sent from County College of Morris cannot be used. Mail sent to a Post Office Box is unacceptable; the address must show the residential street address. Individuals establishing one-year residency must include one piece of mail from one year ago.)
5. A student under 23 years old, claiming himself or herself for tax purposes and not living with his or her parents or guardian must submit:
   a. Copy of his or her most recent 1040 or New Jersey income tax form; and
   b. Copy of his or her parents’ most recent 1040 or New Jersey income tax form.
6. Permanent residents must provide their green card showing permanent residency status issued one year prior to the term in which they are requesting the lower tuition rate.

PLEASE NOTE:

1. The residency requirement for a New Jersey resident moving into Morris County is one day and is made once all of the above required documents have been submitted.
2. The residency requirement for an out-of-state resident moving into New Jersey is one year. After the 12th month, the student may submit all of the above required documents. (Out-of-state residents will continue to be charged out-of-state tuition until the one-year residency has expired and all appropriate documents are submitted.)
3. To be eligible for a lower tuition rate, a student must be established as a permanent resident before the first day of classes of the new semester.
4. Residence established solely for the purpose of paying the lower tuition rate cannot be considered as fulfilling the residency requirements.

Residency for Undocumented Students

Eligible undocumented individuals may attend County College of Morris at a tuition rate based upon their verified residency status. To be eligible for in-county or out-of-county tuition rates, undocumented students must submit the following documents to the Office of Student Development and Enrollment Management:

1. Verification of having attended a New Jersey high school for at least three (3) years;
2. Verification of graduation from a New Jersey high school or received the equivalent of a New Jersey high school diploma;
3. Filed an affidavit with the Office of Student Development and Enrollment Management stating that the student has filed an application to legalize his/her immigration status or will file such an application. The affidavit may be obtained from the Office of Student Development and Enrollment Management in the Student Community Center, Room 132, or from the college’s website (http://www.ccm.edu/Media/Website%20Resources/pdf/vpsdem/affadavit_of_intent_immigration_status.pdf).

Any undocumented individual who cannot provide the documents above will be charged the out-of-state tuition rate.

Tuition (As of Summer 2017)

<table>
<thead>
<tr>
<th></th>
<th>In County Residency</th>
<th>Out-of-County Residency</th>
<th>Out-of-State Residency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>$125.00</td>
<td>$125.00</td>
<td>$125.00</td>
</tr>
<tr>
<td>Differential Fee</td>
<td>+ .00</td>
<td>+ $125.00</td>
<td>+ $232.00</td>
</tr>
<tr>
<td>College Fee</td>
<td>+ $29.00</td>
<td>+ $29.00</td>
<td>+ $29.00</td>
</tr>
<tr>
<td>Cost/Credit</td>
<td>$154.00</td>
<td>$279.00</td>
<td>$386.00</td>
</tr>
</tbody>
</table>

Note: Senior citizens, defined as persons 65 or older, may enroll for credit and non-credit courses at a reduced rate. Senior citizens who live in the county pay $35 per credit fee hour. Those who live
outside the county pay the $35 per credit fee hour plus the additional out-of-county differential. Rates apply to courses which have sufficient tuition-paid enrollment to warrant their being conducted.

Seniors will not be charged Admission Fees and College Fees. However, seniors will be charged all other fees. This senior citizen tuition waiver is in accordance with NJS 18A:62-3.

For the most up-to-date listing on tuition, go to www.ccm.edu (http://www.ccm.edu).
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