<table>
<thead>
<tr>
<th>Table of Contents</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Catalog</td>
<td>4</td>
</tr>
<tr>
<td>Academic Information</td>
<td>4</td>
</tr>
<tr>
<td> Academic Calendar</td>
<td>4</td>
</tr>
<tr>
<td> Academic Progress</td>
<td>6</td>
</tr>
<tr>
<td> Change of Major and Dropping Grades</td>
<td>7</td>
</tr>
<tr>
<td> Course Information</td>
<td>7</td>
</tr>
<tr>
<td> Dean’s Honor List</td>
<td>9</td>
</tr>
<tr>
<td> Grading System</td>
<td>9</td>
</tr>
<tr>
<td> Graduation</td>
<td>10</td>
</tr>
<tr>
<td> Official Withdrawal from the College</td>
<td>11</td>
</tr>
<tr>
<td> Overloads</td>
<td>11</td>
</tr>
<tr>
<td> Prerequisites and Corequisites</td>
<td>11</td>
</tr>
<tr>
<td> Semester Credit Hours</td>
<td>11</td>
</tr>
<tr>
<td> Academic Support Services</td>
<td>11</td>
</tr>
<tr>
<td> Academic Advisement</td>
<td>11</td>
</tr>
<tr>
<td> Accessibility Services</td>
<td>12</td>
</tr>
<tr>
<td> Career Services and Cooperative Education</td>
<td>12</td>
</tr>
<tr>
<td> Counseling and Student Success</td>
<td>12</td>
</tr>
<tr>
<td> Educational Opportunity Fund</td>
<td>13</td>
</tr>
<tr>
<td> Health Services</td>
<td>13</td>
</tr>
<tr>
<td> New Student Orientation</td>
<td>13</td>
</tr>
<tr>
<td> Student Development</td>
<td>14</td>
</tr>
<tr>
<td> Testing Center</td>
<td>14</td>
</tr>
<tr>
<td> Transcripts</td>
<td>14</td>
</tr>
<tr>
<td> Transfer Services</td>
<td>15</td>
</tr>
<tr>
<td> Tutoring Center: Math, Writing and Science</td>
<td>15</td>
</tr>
<tr>
<td> Administration, Faculty and Staff</td>
<td>15</td>
</tr>
<tr>
<td> Admissions</td>
<td>32</td>
</tr>
<tr>
<td> Documentation Needed for Admissions</td>
<td>32</td>
</tr>
<tr>
<td> English for Speakers of Other Languages (ESOL)</td>
<td>32</td>
</tr>
<tr>
<td> Enrollment Status</td>
<td>33</td>
</tr>
<tr>
<td> Examination Credit</td>
<td>33</td>
</tr>
<tr>
<td> Insurance Requirements</td>
<td>34</td>
</tr>
<tr>
<td> International Students</td>
<td>34</td>
</tr>
<tr>
<td> Military and Veteran Services</td>
<td>35</td>
</tr>
<tr>
<td> Programs for High School Students</td>
<td>35</td>
</tr>
<tr>
<td> Readmitted Students</td>
<td>35</td>
</tr>
<tr>
<td> Restricted and Capped Enrollment</td>
<td>35</td>
</tr>
<tr>
<td> Second Degrees and Certificates</td>
<td>36</td>
</tr>
<tr>
<td>State-Issued High School Diploma</td>
<td>36</td>
</tr>
<tr>
<td>Student Categories</td>
<td>36</td>
</tr>
<tr>
<td>Student Classifications</td>
<td>36</td>
</tr>
<tr>
<td>Transfer Students</td>
<td>37</td>
</tr>
<tr>
<td>Tuition-Free Program</td>
<td>38</td>
</tr>
<tr>
<td>Who May Attend</td>
<td>38</td>
</tr>
<tr>
<td>Areas of Study</td>
<td>39</td>
</tr>
<tr>
<td> Advanced Electronics Certificate of Achievement</td>
<td>96</td>
</tr>
<tr>
<td> Advanced Mechanical Analysis Certificate of Achievement</td>
<td>151</td>
</tr>
<tr>
<td> Agribusiness</td>
<td>40</td>
</tr>
<tr>
<td> Animation</td>
<td>40</td>
</tr>
<tr>
<td> Assembly and Testing Certificate of Achievement</td>
<td>152</td>
</tr>
<tr>
<td> Basic Electronics Certificate of Achievement</td>
<td>96</td>
</tr>
<tr>
<td> Broadcasting Arts and Technology</td>
<td>44</td>
</tr>
<tr>
<td> Business Administration</td>
<td>46</td>
</tr>
<tr>
<td> Business Professional</td>
<td>48</td>
</tr>
<tr>
<td> CDA Educational Endorsement Certificate</td>
<td>51</td>
</tr>
<tr>
<td> Chemical Technology</td>
<td>52</td>
</tr>
<tr>
<td> Chemical Technology Environmental Science Option</td>
<td>52</td>
</tr>
<tr>
<td> Chemistry - Science and Math</td>
<td>202</td>
</tr>
<tr>
<td> Child and Family Studies</td>
<td>58</td>
</tr>
<tr>
<td> Childcare Specialist Certificate</td>
<td>58</td>
</tr>
<tr>
<td> CiS - Game Development Option</td>
<td>62</td>
</tr>
<tr>
<td> Communication</td>
<td>59</td>
</tr>
<tr>
<td> Computer Aided Drafting Certificate</td>
<td>151</td>
</tr>
<tr>
<td> Computer Information Systems</td>
<td>62</td>
</tr>
<tr>
<td> Computer Science</td>
<td>68</td>
</tr>
<tr>
<td> Criminal Justice</td>
<td>73</td>
</tr>
<tr>
<td> Culinary Arts and Science</td>
<td>77</td>
</tr>
<tr>
<td> Culinary Arts Certificate of Achievement</td>
<td>78</td>
</tr>
<tr>
<td> Dance</td>
<td>81</td>
</tr>
<tr>
<td> Design</td>
<td>85</td>
</tr>
<tr>
<td> Digital Media Technology</td>
<td>88</td>
</tr>
<tr>
<td> Digital Technology Certificate of Achievement</td>
<td>96</td>
</tr>
<tr>
<td> Early Childhood Development Certificate</td>
<td>93</td>
</tr>
<tr>
<td> Early Childhood Education</td>
<td>92</td>
</tr>
<tr>
<td> Electronics Engineering Technology</td>
<td>95</td>
</tr>
<tr>
<td> Electronics Engineering Technology - Biomedical Equipment Option</td>
<td>96</td>
</tr>
<tr>
<td> Engineering Science</td>
<td>101</td>
</tr>
</tbody>
</table>
### Index

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fees (As of Summer 2020)</td>
<td>255</td>
</tr>
<tr>
<td>Financial Aid</td>
<td>255</td>
</tr>
<tr>
<td>Refund Policies</td>
<td>259</td>
</tr>
<tr>
<td>Residency</td>
<td>259</td>
</tr>
<tr>
<td>Tuition (As of Summer 2020)</td>
<td>260</td>
</tr>
<tr>
<td>Index</td>
<td>261</td>
</tr>
</tbody>
</table>
Credit Catalog

County College of Morris
Outstanding Education • Affordable Price

2020 - 2021 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 to the left, 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 2020

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 10, 2020</td>
<td>Open registration - Summer 2020</td>
</tr>
<tr>
<td>May 26</td>
<td>Classes Begin - Summer Early 5 Week</td>
</tr>
<tr>
<td>June 1</td>
<td>Last day to drop classes - Summer Early 5 Week classes</td>
</tr>
<tr>
<td>June 1</td>
<td>Classes Begin - Summer 10 Week</td>
</tr>
<tr>
<td>June 12</td>
<td>Last day to drop classes - Summer 10 Week classes</td>
</tr>
<tr>
<td>June 18</td>
<td>Last day to withdraw from classes with a ‘W’ - Summer Early 5 Week classes</td>
</tr>
<tr>
<td>June 27</td>
<td>Classes End - Summer Early 5 Week</td>
</tr>
<tr>
<td>June 29</td>
<td>Final Grades Due - Summer Early 5 Week classes</td>
</tr>
<tr>
<td>June 29</td>
<td>Classes Begin - Summer Late 5 Week</td>
</tr>
<tr>
<td>June 30</td>
<td>Classes Begin - Summer 7 Week</td>
</tr>
<tr>
<td>July 3-4</td>
<td>Independence Day - College Closed</td>
</tr>
<tr>
<td>July 6</td>
<td>Last day to drop classes - Summer Late 5 Week classes</td>
</tr>
</tbody>
</table>

Fall 2020

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 6, 2020</td>
<td>Open registration - Fall 2020</td>
</tr>
<tr>
<td>September 9</td>
<td>Classes Begin - 15 Week, Early Start 2 Week and Early Finish 7 Week classes</td>
</tr>
<tr>
<td>September 11</td>
<td>Last day to drop classes - Early Start 2 Week classes</td>
</tr>
<tr>
<td>September 15</td>
<td>Last day to drop classes - Early Finish 7 Week classes</td>
</tr>
<tr>
<td>September 17</td>
<td>Last day to drop classes with a ‘W’ - Early Start 2 Week classes</td>
</tr>
<tr>
<td>September 22</td>
<td>Last day to drop classes - 15 week classes</td>
</tr>
<tr>
<td>September 22</td>
<td>Classes End - Early Start 2 Week</td>
</tr>
<tr>
<td>September 23</td>
<td>Classes Begin - Mid Start 2 Week and 13 Week classes</td>
</tr>
<tr>
<td>September 24</td>
<td>Final Grades Due - Early Start 2 Week classes</td>
</tr>
<tr>
<td>September 25</td>
<td>Last day to drop classes - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>October 1</td>
<td>Last day to withdraw from classes with a ‘W’ - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>October 6</td>
<td>Classes End - Mid Start 2 Week</td>
</tr>
<tr>
<td>October 6</td>
<td>Last day to drop classes - 13 Week classes</td>
</tr>
</tbody>
</table>
### Winterim 2021

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2, 2020</td>
<td>Open registration - Winterim 2021</td>
</tr>
<tr>
<td>December 23</td>
<td>Classes Begin - Winterim 4 Week classes</td>
</tr>
<tr>
<td>December 24-January 2, 2021</td>
<td>Winter Break - College Closed</td>
</tr>
<tr>
<td>January 3</td>
<td>Last day to drop classes - 4 Week classes</td>
</tr>
<tr>
<td>January 4</td>
<td>Classes Begin - Winterim 2 Week classes</td>
</tr>
<tr>
<td>January 6</td>
<td>Last day to drop classes - 2 Week classes</td>
</tr>
<tr>
<td>January 11</td>
<td>Last day to withdraw from classes with a 'W' - 4 Week and 2 Week classes</td>
</tr>
<tr>
<td>January 16</td>
<td>Classes End - Winterim 2 Week classes</td>
</tr>
<tr>
<td>January 18</td>
<td>Final Grades Due - Winterim 2 Week classes</td>
</tr>
</tbody>
</table>

### Spring 2021

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2, 2020</td>
<td>Classes Begin - Early Start 2 Week and Early Finish 7 Week classes</td>
</tr>
<tr>
<td>January 22</td>
<td>Last day to drop classes - Early Start 2 Week classes</td>
</tr>
<tr>
<td>January 26</td>
<td>Last day to drop classes - Early Finish 7 Week classes</td>
</tr>
<tr>
<td>January 28</td>
<td>Last day to withdraw from classes with a 'W' - Early Finish 2 Week classes</td>
</tr>
<tr>
<td>February 1</td>
<td>Last day to drop classes - 15 Week classes</td>
</tr>
<tr>
<td>February 2</td>
<td>Classes End - Early Start 2 Week classes</td>
</tr>
<tr>
<td>February 3</td>
<td>Classes Begin - Mid Start 2 Week and 13 Week classes</td>
</tr>
<tr>
<td>February 4</td>
<td>Final Grades Due - Early Start 2 Week classes</td>
</tr>
<tr>
<td>February 5</td>
<td>Last day to drop classes - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>February 11</td>
<td>Last day to withdraw from classes with a 'W' - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>February 16</td>
<td>Last day to drop classes - 13 Week classes</td>
</tr>
<tr>
<td>February 16</td>
<td>Classes End - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>February 17</td>
<td>Classes Begin - Late Start 2 Week</td>
</tr>
<tr>
<td>February 18</td>
<td>Final Grades Due - Mid Start 2 Week classes</td>
</tr>
<tr>
<td>February 19</td>
<td>Last day to drop classes - Late Start 2 Week classes</td>
</tr>
<tr>
<td>February 25</td>
<td>Last day to withdraw from classes with a 'W' - Early Finish 7 Week and Late Start 2 Week classes</td>
</tr>
<tr>
<td>March 2</td>
<td>Classes End - Last Start 2 Week classes</td>
</tr>
<tr>
<td>March 4</td>
<td>Final Grades Due - Late Start 2 Week classes</td>
</tr>
<tr>
<td>March 9</td>
<td>Classes End - Early Finish 7 Week classes</td>
</tr>
<tr>
<td>March 11</td>
<td>Final Grades Due - Early Finish 7 Week classes</td>
</tr>
<tr>
<td>March 15-20</td>
<td>Spring Break</td>
</tr>
<tr>
<td>March 22</td>
<td>Classes Resume</td>
</tr>
<tr>
<td>March 24</td>
<td>Classes Begin - Late Start 7 Week classes</td>
</tr>
<tr>
<td>March 30</td>
<td>Last day to drop classes - Late Start 7 Week classes</td>
</tr>
</tbody>
</table>
April 22 | Last day to withdraw from classes with a ‘W’ - 15 Week and 13 Week classes

April 29 | Last day to withdraw from classes with a ‘W’ - Late Start 7 Week classes

May 11 | Classes End - 15 Week, 13 Week and Late Start 7 Week classes

May 13 | Final Grades Due - 15 Week, 13 Week and Late Start 7 Week classes

May 21 | Commencement

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/wp-content/uploads/2016/05/Academic-Bankruptcy-Form-1.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 Dean 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/records-and-registration/downloadable-forms/) 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 grade 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/records-and-registration/downloadable- forms/) must be submitted to the Records and Registration Office for approval and processing.

Course Information

- Course Options (p. 7)
- Class Attendance (p. 7)
- Out-of-Class Time Requirements for CCM Courses (p. 7)
- Auditing (p. 8)
- Dropping and Adding Courses (p. 8)
- Repeating Courses (p. 8)
- Withdrawing from Courses (p. 8)

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 15, 13, 10, 7, 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 that 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 15 week semester.
Term Duration | Minimum Expected Total Time per Week per Credit (Lecture and Laboratory) \\
--- | --- \\
15 Week | 3 hours \\
13 Week | 3.2 hours \\
10 Week | 4.5 hours \\
7 Week | 6 hours \\
5 Week | 9 hours \\
2 Week | 22.5 hours \\

**Examples**
If you are enrolled in ENG-111 (3 credit course – Lecture) during the 7 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 15 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. Students should consult the Refund Schedule on the college’s website or at the Bursar’s Office prior to dropping a course during the refund period.

The Academic Calendar (https://www.ccm.edu/academics/academic-calendar) should be reviewed carefully in terms of when the last date to drop classes is in any mini term.

**Repeating Courses**
- all grades will appear on the student’s transcript including repeated course grades.

- the cumulative grade point average will be calculated based on the repeated course grade.

- 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.

- under no circumstances will a student receive credit more than once for any particular course.

- a student may register for the same course two times (excluding formal withdrawals or where precluded by departmental regulations).

- however, a student will be blocked from registering on the third and subsequent attempts without express permission from the appropriate academic department chairperson and/or division dean.

**Possible consequences of repeating a course (example: first attempt earned a D, second attempt earned an F):**

- earning a lower grade when repeating a course will negatively impact your GPA

- earning a lower grade when repeating a course may prevent you from enrolling in a course where the repeated course is a pre-requisite (where course requires a C or better)

- may have implications of being accepted into certain CCM programs and/or graduation

**Withdrawing from Courses**
Prior to withdrawing from a class, students are highly encouraged to have a discussion with their professor regarding their intention to withdraw. To officially withdraw from a course, students must complete a Withdrawal Form (http://catalog.ccm.edu/credit/academicinformation/courseinformation/Withdrawal_Form.pdf) available at the Office of Records and Registration or by visiting the Records and Registration (http://www.ccm.edu/admissions/records-and-registration/) web page. Instructions on how to withdraw electronically via your CCM email account is 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. If you are withdrawing from all of your courses, your Withdrawal Form will need to be signed by the Office of Counseling and Student Success.

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>
</tbody>
</table>

Grades used in non-credit courses

<table>
<thead>
<tr>
<th>Grade</th>
<th>Interpretation</th>
<th>Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>Withdrawed</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Registered to Audit</td>
<td>None</td>
</tr>
<tr>
<td>R</td>
<td>Incomplete</td>
<td>None</td>
</tr>
<tr>
<td>I</td>
<td>Pass</td>
<td>None</td>
</tr>
<tr>
<td>SP</td>
<td>Satisfactory Progress</td>
<td>None^1</td>
</tr>
<tr>
<td>W</td>
<td>None</td>
<td>None^2</td>
</tr>
<tr>
<td>EX</td>
<td>Credit by Examination</td>
<td>None</td>
</tr>
<tr>
<td>TR, TA, TA-, TB+, TB, TC+, TB, TC, TC-, TD</td>
<td>None</td>
<td></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>Total</td>
<td></td>
<td></td>
<td></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 Warnings

Midterm warning notifications are sent to students when they are demonstrating unsatisfactory academic work and/or lack of attendance through the midpoint of the 15 and/or the 13 week semesters. 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, but is a good indicator that a student should seek academic support through The Academic Success Center and/or tutoring from the Tutoring Center.

Incomplete Grades

An Incomplete (I grade) 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. Academic 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/records-and-registration/) by the posted deadlines. Graduation Applications (http://www.ccm.edu/wp-content/uploads/2016/05/App-for-Grad-1.pdf) are available online, at the Office of Records and Registration or students can apply online through their Titans Direct account.
- 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>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>January Graduation</td>
<td>October 1</td>
</tr>
<tr>
<td>May Graduation</td>
<td>February 1</td>
</tr>
<tr>
<td>August Graduation</td>
<td>June 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 do not meet the requirements must re-apply for graduation when registering for the course(s) that will complete the requirements. The graduation fee is transferable from one graduation cycle to the next. 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 web page (http://www.ccm.edu/admissions/records-and-registration/downloadable-forms/).

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 Titans Direct 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:

<table>
<thead>
<tr>
<th>Honor</th>
<th>GPA Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summa cum laude</td>
<td>3.85 - 4.00 GPA</td>
</tr>
<tr>
<td>Magna cum laude</td>
<td>3.65 - 3.84 GPA</td>
</tr>
<tr>
<td>Cum laude</td>
<td>3.45 - 3.64 GPA</td>
</tr>
<tr>
<td>Certificate with Merit</td>
<td>3.45 - 4.00 GPA</td>
</tr>
</tbody>
</table>

These honors will be noted on the academic transcript as well as on the diploma.

Official Withdrawal from the College

Students who wish to officially withdraw from the college must complete a withdrawal form (http://www.ccm.edu/wp-content/uploads/2016/05/Withdrawal-Form-2.pdf) and submit it to the Office of Counseling and Student Success. Forms can be downloaded from the Record and Registration web page or picked up in front of the Records and Registration Office located in the Student Community Center, Room 220. 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 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 does not 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 or Dean of Student Development and Enrollment Management. 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 enrollment 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. The Commission expects all candidate and accredited institutions to demonstrate that they use acceptable and consistent methods for assigning credit hours to all courses and programs of study.

The U.S. Department of Education defines ‘credit hour’ as:

1) one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately 15 weeks for one semester or the equivalent amount of work over a different amount of time; or,

2) at least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution, including lab work, internships, practica, studio work, and other academic work leading to the award of credit hours’

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. Certain segments of the CCM student body may also take advantage of the opportunity to connect with a Student Success Specialist in The Academic Success Center (TASC) for academic advisement and educational support. 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. All students are encouraged to communicate with their faculty advisors using the Student Planning module on the College’s Titans Direct system.

Questions regarding advisor/advisee assignments should be directed to the Coordinator of Academic Advisement and Student Success in Cohen Hall, Room 203, 973-328-5303. The advisement link on the CCM website, http://www.ccm.edu/student-life/campus-services/academic-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 physical, psychological, medical, sensory, learning or other 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 accommodations may be appropriate for use during their courses. Accessibility Services is designed to offer accommodations that provide equal access to college classes and services. Accommodations may include any or all of the following: extended time for exams and quizzes, alternative to print materials, Assistive Technology, sign language interpreters or other accommodations as needed. To qualify for accommodations, a student must submit appropriate documentation that shows an impairment that limits a major life activity.

Accessibility Services also offers individualized strategies tutoring, a time-limited mentoring service designed to help students strengthen study and organizational skills. This service is offered upon request only on a first-come, first-served basis.

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 operates as a multifunctional office serving CCM students and graduates 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/student-life/career-services/) website.

### Job Listings

Listings of full-time and part-time off-campus employment opportunities are posted on [JobConnect](http://www.ccm.edu/student-life/career-services/students/jobconnect-job-posting-system/).

### Job Search Preparation

Students and alumni may request assistance with regard to employment concerns, resume development, interview techniques, job search strategies, and other related topics.

### Campus Student Employment Program

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

### Experiential Learning Programs

Cooperative education, internship and other experiential learning opportunities allow students to integrate classroom instruction with practical experience and are available in many academic programs at County College of Morris. For more information, visit the [Cooperative Education/Internships](http://www.ccm.edu/student-life/career-services/students/cooperative-education-internship/) website.

### Web-Based Resources

Students and alumni are afforded access to a variety of web-based job search tools and resources including, but not limited to, Optimal Resume, Optimal Interview, Career Concourse, What Can I Do With This Major?, and JobConnect.

### Counseling and Student Success

Counseling and Student Success strive to support students throughout their educational journey by providing personal, career, and educational counseling. Programs for special populations are also offered. Through an individualized approach, counselors promote wellness by assisting students in clarifying and achieving their personal and educational goals.

Through counseling, students learn about themselves and develop personally as part of a complete education. Services available to students are:

- Advising for Non-Matriculated Students (not seeking a degree)
- Advising for Student-Athletes
- Career Exploration and Counseling
- Educational Counseling
- Guidance for students Returning from Academic Dismissal
- NJ STARS Program
• Personal Counseling
• Workshops and events on prevalent topics

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 (CCM) has been delivering top-notch academic enrichment services, such as a summer orientation, workshops, seminars, one-on-one counseling, tutoring assistance, professional mentoring, 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 or the New Jersey Alternative Financial Aid Application (https://www.hesaa.org/Pages/NJAlternativeApplication.aspx) (NJ Dreamers). 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/student-life/campus-services/educational-opportunity-fund/) website. The EOF office is located in Cohen Hall, Room 211. You can also check out the EOF program on social media - Facebook (http://www.facebook.com/ eofccm/), Twitter (https://twitter.com/eofccm/) and Instagram (https://www.instagram.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 recombinax IP given between 11 and 15 years of ages.

Beginning July 1, 2020, the State of New Jersey requires that certain individuals will be required to provide verification of immunization against meningococcal disease. Such documentation must be submitted to the Office of Health Services along with other immunization documentation.

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.


Athletic 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/student-life/campus-services/health-services/) 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/student-life/campus-life/new-student-orientation/) 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;
- Connecting students with community resources to address basic, personal, medical, mental health, and financial needs that impede academic progress;
- 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 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 wanting to place into more advanced Mathematics courses. Sample questions are available through the Testing Center (https://www.ccm.edu/admissions/placement-testing-2/) website.

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/placement-testing-2/testing-center/) website. CLEP testing is scheduled on one or two dates per month.

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

Exams for CCM online and hybrid courses can be administered in the Testing Center or through the college’s online proctoring systems. For instructions and more information, visit the Testing Center (http://www.ccm.edu/admissions/placement-testing-2/testing-center/) website.

The Testing Center offers a number of workforce development certification assessments, such as the Microsoft Office Specialist certification. You may contact the Testing Center via email at Testing@ccm.edu with any inquiries.

The Testing Center provides proctoring services for other schools and organizations. Please view our NON-CCM Proctoring Services (http://www.ccm.edu/admissions/placement-testing-2/testing-center/non-ccm-proctoring/) (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

Transcript Request Policy and Procedures

Students who would like to request their County College of Morris (CCM) transcript can do so using one of 3 ways:

1) stop by the Office of Records and Registration to fill out and sign a Transcript Request Form
2) visit our web page and complete an Online Transcript Request Form (http://www.ccm.edu/wp-content/uploads/2016/05/Transcript-Request-Form-1-1.pdf)
3) using the National Student Clearinghouse (https://studentclearinghouse.org/students/) (NSC) to order and pay with a credit card for their CCM transcript. This service is available 24 hours a day/7 days a week. Links to the NSC can be found on Titans Direct and the Records and Registration web page.

- Transcripts are $5.00 per transcript; $6.00 for electronic copies through the NSC
- a signed written request via the form or electronically through the NSC is required
- picking up a transcript in person requires a valid photo ID
- requests are processed within three business days 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.
- a transcript may be picked up by somebody other than the student requesting the transcript, however this individual needs to present a valid photo ID and authorization signed by the student indicating they are permitted to pick up the transcript.

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 or via request from the National Student Clearinghouse. 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.

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

Transfer Services

Students planning to pursue a baccalaureate 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/student-life/campus-services/transfer-services/) 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 is located in DeMare Hall, Room DH-156 and it is home to the Math, Writing and Science Centers. The center provides FREE academic support in a variety of subjects within these disciplines, as well as other subjects. Tutoring is available for one-on-one appointments, walk-ins (math and writing - check center for schedule) and group tutoring. Services include:

- Assistance with writing assignments and mechanics of writing in any subject – Faculty tutors
- Assistance with various math and science course assignments/problems – Faculty and peer tutors
- ESL & Spanish tutoring
- Assistance with tutoring in other subjects (i.e. accounting, economics, art/design, and/or others)
- Speech tutoring via our adjacent Storyteller’s Speech Lab
- Academic workshops

- Online tutoring 24/7 via Smarthinking (accessible thru the Center's Blackboard course - Tutoring Center: Math, Writing & Science)
- Quiet place to study and computer access to complete assignments

To make a tutoring appointment for each area (Math, Writing & Science), click the following link - http://www.ccm.edu/academics/academic-support-services/tutoring-center/. The center provides students with a variety of options to receive tutoring support. Any questions, students can visit the center in person - DH156 or call 973-328-5367.

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<tr>
<td>DeMare Hall</td>
<td>973-328-5210</td>
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<tr>
<td>Student Community Center</td>
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<td>Student Community Center</td>
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<td>Student Community Center</td>
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<tr>
<td>Sheffield Hall</td>
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<tr>
<td>Music Technology Center</td>
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<tr>
<td>Emeriti Hall</td>
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<tr>
<td>Sheffield Hall</td>
<td>973-328-5332</td>
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<td>DeMare Hall</td>
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<td>Department</td>
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<td>Economics Program</td>
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<td>Educational Opportunity Fund</td>
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<td>Emergency Closing Information</td>
<td>Sheffield Hall</td>
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<tr>
<td>Engineering Technologies/Engineering Science Department</td>
<td>Sheffield Hall</td>
</tr>
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<td>English and Philosophy Department</td>
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<td>Financial Aid</td>
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<td>Fine Arts Program</td>
<td>Emeriti Hall</td>
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<td>Foundation Office</td>
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<td>Graphic Design Program</td>
<td>Emeriti Hall</td>
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<tr>
<td>Health and Exercise Science Department</td>
<td>Health/Physical Education Bldg.</td>
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<tr>
<td>Health Service</td>
<td>Cohen Hall</td>
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<td>History and Political Science Department</td>
<td>DeMare Hall</td>
</tr>
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<td>Hospitality Management and Culinary Arts Department</td>
<td>Student Community Center, Room 240</td>
</tr>
<tr>
<td>Human Services</td>
<td>DeMare Hall</td>
</tr>
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<td>Information Technologies Department</td>
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<td>Institutional Effectiveness</td>
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<td>Institutional Grants</td>
<td>Henderson Halls</td>
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<td>Intramural Office</td>
<td>Health/Physical Education Bldg.</td>
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<td>Landscape and Horticultural Technology Department</td>
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<td>Languages and ESL Department</td>
<td>Emeriti Hall</td>
</tr>
<tr>
<td>Library</td>
<td>Learning Resource Center/Library</td>
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<td>Marketing and Public Relations</td>
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<td>Math Center</td>
<td>DeMare Hall</td>
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<td>Media Center</td>
<td>Learning Resource Center/Library</td>
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<td>Music, Dance and Performing Arts Department</td>
<td>Music Technology Center</td>
</tr>
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<td>Newspaper (The Youngtown Edition)</td>
<td>Student Community Center</td>
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<td>Non-Credit Programs</td>
<td>Sheffield Hall</td>
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<td>Nursing Department</td>
<td>Cohen Hall</td>
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<td>Performing Arts</td>
<td>Music Technology Center</td>
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<td>Photography Program</td>
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<td>Planetarium</td>
<td>Cohen Hall</td>
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<td>DeMare Hall</td>
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<td>Public Administration</td>
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</tr>
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<td>Public Health Program</td>
<td>Health and Physical Education Building</td>
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<td>Public Safety</td>
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<td>Radiography Program</td>
<td>Cohen Hall</td>
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<td>Science Center</td>
<td>DeMare Hall</td>
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<td>School of Health Professions and Natural Sciences</td>
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<tr>
<td>School of Liberal Arts</td>
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<td>School of Professional Studies and Applied Sciences</td>
<td>Sheffield Hall</td>
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<td>Sociology, Economics and Anthropology Department</td>
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<td>Special Events</td>
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<td>Student Activities</td>
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<td>Student Development and Enrollment Management</td>
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<td>Student Government</td>
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<td>Student Records</td>
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<td>Teacher Education Program</td>
<td>DeMare Hall</td>
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<tr>
<td>Testing Center</td>
<td>Learning Resource Center/Library</td>
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<tr>
<td>The Academic Success Center</td>
<td>Cohen Hall</td>
</tr>
<tr>
<td>Transfer Services</td>
<td>Student Community Center</td>
</tr>
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<td>Tutoring Center</td>
<td>DeMare Hall</td>
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<td>Veterans' Counseling</td>
<td>Student Community Center</td>
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<tr>
<td>Virtual Campus/Distance Education</td>
<td>Sheffield Hall</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
- A highly engaged campus life and intercollegiate program
- Diverse and comprehensive student support services

To obtain more information about the college’s admissions processes, access the department’s webpage at https://www.ccm.edu/admissions/

Documentation Needed for Admissions

Applicants are required to submit a completed application with a $30 application fee to the Admissions office. The application for admission is available from the college’s website at www.ccm.edu. All matriculated students must provide high school and/or college 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 to support their admission application to County College of Morris (CCM). However, they may be required to take an additional placement examination administered at 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 97 (computer-based test) or 32 (Internet-based) or a minimum IELTS exam score of 5 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 prior to registering for class.

4. Proof of Resident Status

Students who are non-immigrants, visa holders, temporary residents, refugees or employment authorization card holders (I-688A) must present evidence of their status to the Admissions office.

Permanent Resident (I-551) students must present to the Admissions office their cards that are not expired. Copies are not accepted.

Undocumented students must provide proof of attending a New Jersey High School for three (3) or more years and proof of having graduated from a New Jersey high school or that they possess a GED or equivalent. Undocumented students must also sign a notarized affidavit indicating that the student has filed an application to legalize his/her immigration status or indicating an intent to legalize immigration status.

The tuition rate charged to an eligible undocumented individual who satisfies all requirements shall be based upon county of residence. All others will be billed the out-of-state tuition rate.

English for Speakers of Other Languages (ESOL)

County College of Morris (CCM) offers a three-level program of study for non-native speakers who are preparing for matriculation at CCM or other American colleges and universities. Courses in reading, writing, and conversation form the core of the ESOL program.

Placement in one of these three levels is determined by an examination which includes a written essay. This Level of English Proficiency (LOEP) examination is administered on the CCM campus by the Testing Center. Students planning to arrive from abroad should allow a minimum of 20 days prior to the start of the Fall or Spring semester to provide sufficient time to take this examination and have it scored. Depending on their LOEP scores, students may be required to complete up to all three levels of ESOL. These courses are non-credit, meaning that they count towards a student’s course load and full-time status, but not towards one’s
major. Students may enroll in classes in their major once they complete Level II of the program or are placed into Level III.

**Enrollment Status**

A part-time student is one who takes fewer than 12 credit hours per semester, while a full-time student is one who takes 12 credits or more per semester. Depending on their scores on the Placement Test, students are often required to complete certain developmental courses that carry institutional credit only but which can nevertheless be used for determining semester course load and full-time status. For timely completion of degrees, full-time students should consider enrolling in at least 15 credits each semester.

**Examination Credit**

The college’s placement test provides information to the college about a student’s skill level in English, Mathematics, and technology literacy. The results of the test(s) are used to determine the proper placement of students in academic courses.

**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 academic 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:
   - SAT = 590 Evidence -based Reading and Writing or 560 Math*
   - SAT = 540 Critical Reading or 530 Math*  
2. Students who have taken ACTs and have earned scores of 23 for English or 23 for Mathematics*.
3. Students who have taken the NJSLA or PARCC Test and scored 4 or 5 on the Algebra II or 4 or 5 on the Grade 11 English Language Arts and Literacy exams*.
4. Students who have satisfied English or mathematics college-level course placement as a result of a review of high school courses, grades, and cumulative grade point average.
5. 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.
6. Students who have passed the appropriate remedial coursework at another college or university.

*All students who are exempt from the Math section of the placement test should 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. Students who apply for STEM programs and are exempt from the Math section of the placement test are required to take the CLM exam.

**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.

**Technology Literacy Competency Exam**

All students will be required to take the Technology 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 Office of Accessibility Services.

**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 results that will be accepted, based upon the score, can be obtained at the following link:

http://www.ccm.edu/admissions/more-information/ap-exam-information/

The number of advanced placement credits will be determined by the appropriate department chair.

Credit for Prior Learning

County College of Morris (CCM) grants credit for prior learning for certain college level knowledge acquired through traditional college level education as well as non-traditional education.

Non-traditional education may be acquired through experiences such as independent study, professional and/or job-related experiences.

This credit may be granted:

1. For certain specialized courses at CCM, successfully passing a departmental evaluation of the type, content and rigor as determined by each academic department. This could include a portfolio or performance assessment. Students should contact the appropriate academic department for specific information.

2. For non-collegiate military training courses accredited under the American Council on Education Military Guide, as verified by the Office of Records and Registration, and with the final evaluation and approval of the appropriate academic department.

3. For non-collegiate corporate training courses accredited by the American Council on Education, as verified by the Office of Records and Registration, and with the final evaluation and approval of the appropriate academic department.

Applicants should consult the Credit for Learning Policy available through the Office of Records and Registration for more details.

College Level Examination Program (CLEP)

Students who have acquired knowledge through life experiences may earn college credit without enrolling in certain courses. To determine a student’s level of knowledge in a particular subject, the college administers College Level Examination Program (CLEP) subject examinations or a Portfolio Assessment (through the appropriate academic department).

With departmental approval in certain disciplines, department examinations may be administered. Students who register for a course and withdraw before the end of the second week of classes are eligible to take the applicable CLEP examination during that semester. Please contact the Testing Center for more information.

Insurance Requirements

Health Insurance

For information about obtaining affordable healthcare insurance, visit the Health Services (http://www.ccm.edu/student-life/campus-services/health-services/) 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 or International English Language Testing System (IELTS) exam 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).

F-1 applicants are required to submit a completed International Student Application for Admission, the application fee, an original secondary school transcript, the Agreement of International Financial Support with supporting documentation, TOEFL or IELTS scores and transcripts by 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 minimum score on the International English Language Testing System (IELTS) exam is 5.

The Agreement of International Financial Support form can be found online at International Forms and Documents (http://www.ccm.edu/admissions/apply/international-forms/) 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. The School Certifying Officer is available to 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 Department of Veteran Affairs (DVA) and the county.

The School Certifying Officer is available in The Academic Success Center, Cohen Hall. Room 203. Inquiries regarding all educational benefits (Montgomery GI Bill, NJ National Guard Tuition Waiver, tuition assistance for active military personnel) can be made by calling 973-328-5149.

Programs for High School Students

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/programs-for-high-school-students/) 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.

The Titans Express Dual Enrollment Program enables students to receive college credits by taking CCM courses at their high school while still in enrolled high school.

The Academy Program, through Morris County Vocational and Technical School, offers a number of programs by which students enroll in classes at both the high school and on the CCM campus.

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 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/state-issued-high-school-diploma/) 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/records-and-registration/downloadable-forms/) 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/records-and-registration/) web page or at the Office of Records and Registration.

Students who were 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 consideration is given to students who have taken (some or all) pre-professional courses at CCM and the grades earned in those courses.

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 on the Department of Nursing and Department of Allied Health website. 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 courses exceed the seven-year limit, students can prove competency by testing or they must repeat the course. All grades must be a C or higher. Multiple grades of D and F as well as W (withdrawal from a course) in science and English courses prior to obtaining a passing grade will decrease the student’s ranking and chances of getting a seat in the professional (clinical) phase.

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Internal or transfer credits for science courses over seven years old will not be accepted. If courses exceed the seven-year limit, students can prove competency by testing or they must repeat the course. All grades must be a C or higher. Multiple grades of D and F as well as W (withdrawal from a course) in science and English courses prior to obtaining a passing grade will decrease the student’s ranking and chances of getting a seat in the professional (clinical) phase.

Admission into CCM and completion of prerequisite (pre-professional) courses does NOT guarantee acceptance into the professional phase of these programs. A separate and distinct admission application must be completed for admission into
the professional phase of the programs and the process is competitive. Due to the competitive nature of these programs, obtaining a seat in the professional (clinical) phase is based on a number of factors, including courses completed at County College of Morris, the grades earned, and the overall grade point average at the time the application form is filed and reviewed. Students must abide by guidelines set forth in clinical contracts, including Criminal History Background Checks and drug testing. Results of these screenings may impact initial acceptance and continued enrollment in these programs.

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.

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, either 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. 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.

Submit to the Admissions Office a completed CCM Admissions Application (http://www.ccm.edu/admissions/apply/), including the non-refundable application fee; be sure to indicate that you are applying for the 30 Credit Program.

Shortly thereafter, students will receive a letter from the Admissions Office with instructions about taking the 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 the Office of Accessibility Services at 973-328-5284. The Admissions Office staff can assist with any other 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 Workforce Development (http://www.ccm.edu/businesscommunity/) office at CCM.

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 visual, 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 remain in good academic standing.

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 Academic Success Center.

Note: Individuals who are eligible for the Montgomery GI Bill under Chapters 30, Chapter 35, 1606, and 1607 are responsible for paying their own tuition regardless of when they receive their VA benefits check. CCM does not provide tuition deferment for veterans using any of the above listed chapters.

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 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 credit provided the courses are applicable to the applicant’s program at County College of Morris (CCM). 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 by filing the Free Application for Financial Aid.

Interested students should contact the School Certifying Officer in The Academic Success Center 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**

**CCM 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. Applicants seeking admission as degree-seeking (matriculated) students are required to provide one of the following documents to demonstrate their preparedness or a demonstrated ability to benefit from post-secondary studies. Please note the section *Restricted and Capped Programs* (p. 35) for exceptions.

- High School Diploma
- State Issued HS Diploma issued based on:
  - General Equivalency Diploma (GED)
  - High School Equivalency Test (HiSET)
  - Test Assessing Secondary Completion (TASC)
  - Thirty (30) College Credit Program
- Home School Certificate

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 as a non-matriculating student. Prospective students must schedule an appointment to meet with an Admissions Counselor by calling 973-328-5100.

Prospective students must take and pass placement exams in English, mathematics and technology literacy. Once enrolled in CCM, students must take courses in designated subject areas as per the State of New Jersey requirements equaling 30 total credit hours. Upon completion, the student may request 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 through Morris County School of Technology
- Challenger Program (including home schooled)
- CCM Titans Express Dual Enrollment Program
Areas of Study

- Advanced Electronics Certificate of Achievement (P0637) (p. 95)
- Advanced Mechanical Analysis Certificate of Achievement (P0635) (p. 150)
- Agribusiness (P3321) (http://catalog.ccm.edu/credit/areasofstudy/landscape/#degreestext)
- Animation (P4142) (p. 40)
- Assembly and Testing Certificate of Achievement (P0627) (p. 150)
- Basic Electronics Certificate of Achievement (P0631) (p. 95)
- Biology - Science and Math (P2160) (p. 198)
- Broadcasting Arts and Technology (P1132) (p. 48)
- Business Administration (P2110) (p. 46)
- Business Professional (P3400) (p. 48)
- CDA Educational Endorsement Certificate (P0331) (p. 51)
- Chemical Technology (P3450) (p. 52)
- Chemical Technology Environmental Science Option (P3451) (p. 52)
- Chemistry - Science and Math (P2152) (p. 198)
- Child and Family Studies (P2941) (p. 58)
- Childcare Specialist Certificate (P5134) (p. 58)
- CIS - Game Development Option (P3504) (p. 62)
- Communication (P1129) (p. 59)
- Computer Aided Drafting Certificate (P5710) (p. 150)
- Computer Information Systems (P3504) (p. 62)
- Computer Science (P2500) (p. 68)
- Criminal Justice (P2950) (p. 73)
- Culinary Arts and Science (P3425) (p. 77)
- Culinary Arts Certificate of Achievement (P0420) (p. 77)
- Dance (P4170) (p. 81)
- Design (P4141) (p. 85)
- Digital Media Technology (P3530) (p. 88)
- Digital Technology Certificate of Achievement (P0629) (p. 95)
- Early Childhood Development Certificate (P5134) (p. 92)
- Early Childhood Education (P2940) (p. 92)
- Electronic Music (P2171) (p. 164)
- Electronics Engineering Technology (P3600) (p. 95)
- Electronics Engineering Technology - Biomedical Equipment Option (P3601) (p. 95)
- Engineering Science (P2180) (p. 101)
- Engineering Technology Certificate of Achievement (P0633) (p. 150)
- Environmental Track (Biology) (P2160) (p. 198)
- ESL - English for Speakers of Other Languages (P0961) (p. 104)
- Exercise Science (P2960) (p. 106)
- Finance Certificate of Achievement (P0344) (p. 46)
- Fire Science Technology (P3460) (p. 110)
- Foundations in Business Certificate of Achievement (P0345) (p. 47)
- Garden Center Certificate of Achievement (P0323) (http://catalog.ccm.edu/credit/areasofstudy/landscape/)
- Graphic Design (P3560) (p. 111)
- Grounds Maintenance Certificate of Achievement (P0321) (http://catalog.ccm.edu/credit/areasofstudy/landscape/)
- Health Related Track (Biology) (P2160) (p. 198)
- Honors Study (p. 114)
- Hospitality Management (P3420) (p. 115)
- Hospitality Management and Event Planning Certificate of Achievement (P0421) (p. 115)
- Hospitality Management - Restaurant and Culinary Management Option (P3434) (https://www.ccm.edu/academics/divdep/bmet/hospitality/)
- Human Services (P1134) (p. 120)
- Information Security Certificate of Achievement (P0354) (p. 122)
- Information Technology (P3525) (p. 121)
- International Studies (P1160) (p. 128)
- Journalism (P1133) (p. 129)
- Landscape Contractor Certificate of Achievement (P0322) (http://catalog.ccm.edu/credit/areasofstudy/landscape/)
- Landscape Design Certificate of Achievement (P0320) (http://catalog.ccm.edu/credit/areasofstudy/landscape/)
- Landscape Management and Design (P3320) (http://catalog.ccm.edu/credit/areasofstudy/landscape/)
- Languages (p. 132)
- Liberal Arts and Sciences - Humanities/Social Science (P1130) (p. 139)
- Mathematics - Science and Math (P2150) (p. 198)
- Mechanical CAD Certificate of Achievement (P0625) (p. 150)
- Mechanical Engineering Technology (P3700) (p. 150)
- Media Technology Certificate of Achievement (P0360) (p. 90)
- Music (P1190) (p. 156)
- Music Technology (P2170) (p. 164)
- Musical Theatre (P2006) (p. 172)
- Nursing (P3800) (p. 180)
- Nutrition Track (Biology) (P2160) (p. 198)
- Occupational Therapy Assistant (P2155) (p. 183)
- Personal Trainer Certificate of Achievement (P0950) (p. 184)
- Photography Technology (P3550) (p. 188)
- Preprofessional Scientific Track (Biology) (P2160) (p. 198)
- Public Health (P2156) (p. 190)
- Radiography (P3840) (p. 191)
- Respiratory Therapy (P3850) (p. 194)
- Routing (CISCO CCNA) Certificate of Achievement (P0622) (p. 197)
- Science and Mathematics (P2160) (p. 199)
- Small Business Management Certificate of Achievement (P0400) (p. 46)
- Study Abroad (p. 212)
- Teacher Education - Biology (P2160 TEBIO) (p. 212)
- Teacher Education - Chemistry (P2152 TECHM) (p. 212)
Animation

With the growing need for 3D computer animation worldwide, the Animation program offers student artists a chance to take their first steps towards a career creating visual effects. This program will provide creative and technical skills students need to transfer seamlessly to the best animation schools in the country and eventually find a career in the animation industry.

Students will gain knowledge and experience in multiple disciplines by learning drawing techniques, figure drawing, basic design and storyboard, as well as professional animation software. Graduates will have acquired the personal and professional skills necessary to begin their career as visual artists in a highly competitive, creative medium.

Degrees

General Education Foundation

Communication

ENG-111 English Composition I 6
ENG-112 English Composition II or COM-109 Speech Fundamentals

Math-Science-Technology

MAT-120 Mathematics for Liberal Arts 8
Laboratory Science Elective (4)

Social Science OR Humanities

Social Science or Humanities Elective 3

General Education Electives

ART-133 Art History I 6
ART-134 Art History II

General Education Foundation Credits 23

ANIMATION CORE (37)

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
MED-110 Multimedia I 3
MED-113 Multimedia II 3
COM-114 Media Aesthetics 3
MED-220 Animation 3
MED-240 Advanced Animation 3
ART-230 Portfolio and Presentation 3
ART-102 Introduction to Computer for Fine Art 1

ANIMATION CORE (37) Credits 37

Total Credits 60

Faculty

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Courses

ART-102. Introduction to Computer for Fine Art. 1 Credit.
LECT 1 hr
This 7-week, 1-credit introductory course will teach Fine Art Students the essential elements of the Photoshop interface. Students will learn basic retouching as well as photo editing, including how to correct, enhance, and distort digital images of their art work, and prepare those images for use in print and on the web.

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 and ART-130 or DSN-108.
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 and ART-130 or DSN-108
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-135. Art Appreciation. 3 Credits.
LECT 3 hrs
Art Appreciation will introduce students to the creative processes and techniques used in the diverse media of the visual arts. Through the study and analysis of artworks, students are introduced to visual literacy principles to examine and understand historical, global economic, cultural and conceptual contexts. Students will correlate the arts with a general history of culture, develop a multicultural perspective of the arts, and learn to understand its application to our contemporary visual culture and its uses. Students will discover the human impulse to create art, and how artistic expression addresses universal humanistic themes.
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-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 1 hr
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 targetted 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, and ART-130 or DSN-108.
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-250. Beginning Glassblowing I. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course provides a basic introduction to hot glassblowing. Through a series of lectures, demonstrations and exercises students will be introduced to a variety of techniques used to produce functional and artistic glass objects. Students will be introduced to the history of glassmaking and its development to contemporary equipment and practice.
Additional Fees: Course fee applies.

ART-251. Intermediate Glassblowing. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course provides advanced topics in hot glassblowing. It condenses years of knowledge into a series of explanations, demonstrations and exercises. Students will continue their knowledge of various methods and techniques giving them the experience to create both functional and artistic glass objects. Students will be briefed in advanced techniques of glass making as it relates to contemporary equipment and practice.
Prerequisites: ART-250
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.

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. Several projects throughout the course give students hands-on experience with a variety of digital multimedia tools.
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 multimedia 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-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 or COM-211
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-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.
COOP 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, kinematics, 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 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-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.

Broadcasting Arts and Technology

Having earned an Associates Degree in Broadcasting Arts and Technology, graduates are prepared to transfer and complete requirements for a Bachelor's Degree 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 program also provides opportunities for a supervised media internship.

For more information, visit the Department of Communication (http://www.ccm.edu/academics/divdep/liberal-arts/department-of-communication) webpage.

Degrees

AA Broadcasting Arts and Media Studies
(P1132)

General Education Foundation

<table>
<thead>
<tr>
<th>Category</th>
<th>Credits</th>
</tr>
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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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<tr>
<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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<tr>
<td>MAT-120 Mathematics for Liberal Arts</td>
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<td>or MAT-130 Probability and Statistics</td>
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<tr>
<td>Laboratory Science Elective</td>
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<tr>
<td>CMP-126 Computer Technology and Applications</td>
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<tr>
<td>Social Science</td>
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<tr>
<td>SOC-120 Principles of Sociology</td>
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<td>PSY-113 General Psychology</td>
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<td>Humanities Elective</td>
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<tr>
<td>History</td>
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<tr>
<td>ISA-110 Intercultural Communication</td>
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Broadcasting Arts and Technology Core

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<thead>
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<tr>
<td>COM-114 Media Aesthetics</td>
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<tr>
<td>COM-115 Introduction to Mass Media</td>
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<td>COM-211 Television Production I</td>
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<td>MED-210 Digital Video Editing</td>
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<td>COM-212 Television Production II</td>
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<td>MED-110 Multimedia I</td>
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<tr>
<td>COM-103 Introduction to Public Relations</td>
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<td>COM-104 Interpersonal Communication</td>
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<td>PHO-213 Documentary Photography</td>
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Degrees

AA Broadcasting Arts and Media Studies
(P1132)

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Broadcasting Arts and Technology Core Credits 15
Total Credits 60

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

Raymond Kalas
Assistant Professor, Broadcasting
M.A, Montclair State University
B.A., San Francisco State University
LRC 216-D 973-328-5276 rkalas@ccm.edu

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. Several projects throughout the course give students hands-on experience with a variety of digital multimedia tools.
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-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 or COM-211
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-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 composting 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.
COOP 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, kinematics, dynamics 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

MED-292. 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-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.

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 [website](http://www.ccm.edu/academics/divdep/bmet/business/business-administration-transfer-program/).

Certificate of Achievement

- Finance-A Certificate of Achievement Within Business Administration
- Foundations in Business - A Certificate of Achievement
- Small Business Management - A Certificate of Achievement Within Business Administration

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. Please see curriculum checksheet.

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.
Foundations in Business
A Certificate of Achievement within Business Administration
(P0345)
A 12-credit certificate or achievement to provide non-business majors with an overview of major business concepts. This certificate will enable students to earn a credential, which will enhance their employability. Topics covered include analyzing accounting and financial data to assess the financial needs of the organization and methods used in market planning, pricing, promotion and distribution of goods and services.

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: Computerized Accounting, Small Business Planning and Finance, and Small Business Operations. It also includes an elective course, either Customer Relations, Advertising or Sales Principles and Practices. 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.

Degrees
A.S. Business Administration
(P2110)

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<td>Math-Science-Technology</td>
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<tr>
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<tr>
<td>MAT-117 Mathematical Analysis for Business and Economics</td>
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<td>MAT-118 Calculus With Application to Business And Economics</td>
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<tr>
<td>MAT-123 Precalculus</td>
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<td>MAT-124 Statistics</td>
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<td>MAT-130 Probability and Statistics</td>
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| Humanities                                                        | 3     |
| History Elective                                                  |       |
| General Education Electives                                        | 6     |
| General Education Foundation Credits                               | 31    |
| Business Core                                                     |       |
| ACC-111 Principles of Accounting I - Financial Accounting         | 3     |
| ACC-112 Principles of Accounting II - Managerial Accounting       | 3     |
| BUS-112 Introduction to Business                                   | 3     |
| BUS-215 Principles of Management                                   | 3     |
| BUS-119 Business Information Systems and Applications              | 3     |
| MKT-113 Principles of Marketing I                                  | 3     |
| Business Electives  
| Free Electives                                                     | 2     |
| Business Core Credits                                              | 29    |
| Total Credits                                                      | 60    |

**BUSINESS ELECTIVES:** Students may take any course with an ACC, BUS, or MKT prefix (outside of the required Business Core courses) to meet the 9 credit Business Elective requirement. Please note that some courses are offered every semester, while others are only offered once a year. Please check Web Advisor for the schedule by term.

Students may also choose 6 credits of the 9 requirement from the following list: CMP-239 The Internet & Web Page Design 
HOS-118 Introduction to the Hospitality Industry 
MAT-118 Calculus for Business 
MAT 114- Introduction to Data Science 
MAT-131 Analytical Geometry Calculus 
ECO-217 Economics of Labor 
HOS-120 Hotel/Hospitality Management 
MAT-123 Pre-Calculus 
CMP-128 Computer Science I 
COM-111 Introduction to Journalism 
COM-102 Advertising and Society 
COM 103 Introduction to Public Relations 
COM-209 Editing and Publication Design

**NOTE:** Students will not receive credit toward graduation for more than one of the following courses: CMP-135, CMP-126 or BUS-119. Students will not receive credit towards graduation for more than one of these courses: (BUS-201 and PSY-231) OR (BUS 135 and BUS 233) OR (MAT 124 and MAT 130). Students interested in obtaining a Small Business Management Certificate or Finance Certificate should consider using their Business electives to fulfill those requirements.

**GENERAL EDUCATION ELECTIVES:** Students should consult with an academic adviser or a Transfer counselor in choosing their general education electives. Please note some 4 year colleges require 6 credits of a foreign language as a graduation requirement for their Bachelor degrees.

**FREE ELECTIVES:** Students may take any (2) credit course that they have interest in, or would help them in their major. The Business department offers a 2 credit internship - work experience (BUS 228). The college also offers 2 credit classes in Health & Wellness, Health & Exercise Science, Music and Dance.) Students
can also choose to take any 3 credit course that the college offers, that they have not already taken. Since the program is 60 credits, these 2 credits may be met with two 4 credit math electives (e.g. MAT 123, MAT 130 or MAT 131.)

**Faculty**

Maureen Sutton  
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MBA, Fairleigh Dickinson University  
B.A., Rutgers University  
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Apurv Ved  
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M.B.A., Pace University  
B.Com., University of Bombay, India  
CH 204D  973-328-5674  aived@ccm.edu

**Courses**

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<tr>
<th>Code</th>
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<tr>
<td>ACC-108</td>
<td>Accounting for Hospitality</td>
<td>3</td>
</tr>
</tbody>
</table>

**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 (http://www.ccm.edu/academics/divdep/bmet/business/business-professional-career-program/) website.

Degrees

AAS Business Professional

(P3400)

General Education Foundation

<table>
<thead>
<tr>
<th>Subject</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>6</td>
</tr>
<tr>
<td>ENG-111 English Composition I</td>
<td></td>
</tr>
<tr>
<td>ENG-112 English Composition II</td>
<td></td>
</tr>
<tr>
<td>Math-Science-Technology</td>
<td></td>
</tr>
<tr>
<td>MAT-124 Statistics (or)</td>
<td>3</td>
</tr>
<tr>
<td>MAT-110 College Algebra (or)</td>
<td></td>
</tr>
<tr>
<td>MAT-117 Mathematical Analysis for Business and Economics (or)</td>
<td></td>
</tr>
<tr>
<td>MAT-120 Mathematics for Liberal Arts</td>
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</tr>
<tr>
<td>Social Science or Humanities</td>
<td>3</td>
</tr>
<tr>
<td>ECO-113 Elements of Economics</td>
<td></td>
</tr>
<tr>
<td>or ECO-21 Principles of Economics I Macroeconomics</td>
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<td>General Education Electives</td>
<td>9</td>
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<tr>
<td>COM-109 Speech Fundamentals</td>
<td></td>
</tr>
<tr>
<td>ISA-110 Intercultural Communication</td>
<td></td>
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<tr>
<td>PSY-113 General Psychology</td>
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<td>General Education Foundation Credits</td>
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Business Core

<table>
<thead>
<tr>
<th>Subject</th>
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<tbody>
<tr>
<td>BUS-112 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-119 Business Information Systems and Applications</td>
<td>3</td>
</tr>
<tr>
<td>BUS-213 Business Law I</td>
<td>3</td>
</tr>
<tr>
<td>BUS-215 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>ACC-105 Computerized Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MKT-113 Principles of Marketing I</td>
<td>3</td>
</tr>
<tr>
<td>BUS-229 Internship Experience-Business (135-300 Hours) (OR )</td>
<td>3</td>
</tr>
<tr>
<td>BUS-227 Internship Experience-Business (45-100 Hours) (AND)</td>
<td></td>
</tr>
<tr>
<td>BUS-228 Internship Experience-Business (90-200 Hours)</td>
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<tr>
<td>Business Electives by Track</td>
<td>15</td>
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<tr>
<td>Business Core Credits</td>
<td>36</td>
</tr>
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<td>Free Electives</td>
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<td>Total Credits</td>
<td>60</td>
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</tbody>
</table>

Sales/Marketing Track

Designed for students aspiring for a career in sales

<table>
<thead>
<tr>
<th>Subject</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKT-114 Principles of Marketing II</td>
<td>3</td>
</tr>
<tr>
<td>MKT-208 Social Media Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKT-215 Sales Principles and Practices</td>
<td>3</td>
</tr>
<tr>
<td>MKT-218 Advertising</td>
<td>3</td>
</tr>
<tr>
<td>BUS-242 Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>Sales/Marketing Track Credits</td>
<td>15</td>
</tr>
<tr>
<td>Total Credits</td>
<td>15</td>
</tr>
</tbody>
</table>

Accounting/Financial Management

Designed for students interested in careers in bookkeeping, banking and cash management

<table>
<thead>
<tr>
<th>Subject</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACC-111 Principles of Accounting I - Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC-112 Principles of Accounting II - Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS-211 Money and Banking</td>
<td>3</td>
</tr>
<tr>
<td>BUS-212 Principles of Finance</td>
<td>3</td>
</tr>
<tr>
<td>BUS-218 Investment Principles (OR)</td>
<td>3</td>
</tr>
<tr>
<td>BUS-136 Personal Finance</td>
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</tr>
<tr>
<td>Accounting/Financial Management Credits</td>
<td>15</td>
</tr>
<tr>
<td>Total Credits</td>
<td>15</td>
</tr>
</tbody>
</table>

Management

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

<table>
<thead>
<tr>
<th>Subject</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BUS-242 Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>BUS-233 Principles of International Business</td>
<td>3</td>
</tr>
<tr>
<td>9 credits of any elective that begins with ACC, BUS, MKT, AVT, HOS course not already taken</td>
<td>9</td>
</tr>
<tr>
<td>Management Credits</td>
<td>15</td>
</tr>
<tr>
<td>Total Credits</td>
<td>15</td>
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</table>

Entrepreneurship

Designed for students interested in owning and operating their own business

<table>
<thead>
<tr>
<th>Subject</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-219 Small Business Operations</td>
<td>3</td>
</tr>
<tr>
<td>CMP-239 The Internet and Web Page Design</td>
<td>3</td>
</tr>
<tr>
<td>Take 9 credits from the following:</td>
<td>9</td>
</tr>
<tr>
<td>MKT-215 Sales Principles and Practices (OR)</td>
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</tr>
</tbody>
</table>
NOTE: Students will not receive credit toward graduation for more than one of the following courses: CMP-135, CMP-126 or BUS-119. Students may not receive credit toward graduation for more than one of the following courses: BUS-201 and PSY-231 OR BUS 135 and 233. Students interested in obtaining a Small Business Management Certificate or Finance Certificate should consider using their Business electives to fulfill those requirements.

Faculty

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B.A., Fairleigh Dickinson University

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Courses

ACC-105    Computerized Accounting  3
ACC-108    Accounting for Hospitality  3
ACC-111    Principles of Accounting I - Financial Accounting  3
ACC-112    Principles of Accounting II - Managerial Accounting  3
ACC-211    Intermediate Accounting I  3
ACC-291    Special Topics in Accounting  3
ACC-292    Special Topics in Accounting  3
BUS-112    Introduction to Business  3
BUS-119    Business Information Systems and Applications  3
BUS-135    Introduction to International Business  3
BUS-136    Personal Finance  3
BUS-201    Human Relations in Business  3
BUS-205    Landscape Specifications and Estimating  3
BUS-211    Money and Banking  3
BUS-212    Principles of Finance  3
BUS-213    Business Law I  3
BUS-215    Principles of Management  3
BUS-218    Investment Principles  3
BUS-219    Small Business Operations  3
BUS-222    International Finance  3
BUS-224    Cooperative Work Experience-Business  3
BUS-225    Cooperative Work Experience Business-Related Class  1
BUS-226    Internship Work Experience-Business  3
BUS-227    Internship Experience-Business (45-100 Hours)  1
BUS-228    Internship Experience-Business (90-200 Hours)  2
BUS-229    Internship Experience-Business (135-300 Hours)  3
BUS-233    Principles of International Business  3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BUS-240</td>
<td>Small Business Planning and Finance</td>
<td>3</td>
</tr>
<tr>
<td>BUS-242</td>
<td>Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>BUS-291</td>
<td>Special Topics in Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-292</td>
<td>Special Topics in Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS-ELE</td>
<td>Business Elective</td>
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<tr>
<td>MKT-113</td>
<td>Principles of Marketing I</td>
<td>3</td>
</tr>
<tr>
<td>MKT-114</td>
<td>Principles of Marketing II</td>
<td>3</td>
</tr>
<tr>
<td>MKT-208</td>
<td>Social Media Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKT-210</td>
<td>Social Media Analytics</td>
<td>3</td>
</tr>
<tr>
<td>MKT-215</td>
<td>Sales Principles and Practices</td>
<td>3</td>
</tr>
<tr>
<td>MKT-218</td>
<td>Advertising</td>
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</tr>
<tr>
<td>MKT-291</td>
<td>Special Topics in Marketing</td>
<td>3</td>
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<td>MKT-292</td>
<td>Special Topics in Marketing</td>
<td>3</td>
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<tr>
<td>CDC-110</td>
<td>Early Childhood Development</td>
<td>3</td>
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<tr>
<td>CDC-210</td>
<td>Curriculum, Teaching and Learning in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>CDC-220</td>
<td>CDA Capstone: Effective Preschool Practices</td>
<td>3</td>
</tr>
</tbody>
</table>

**CDA Educational Endorsement Certificate**

The Child Development Associate (CDA) Educational Endorsement Certificate is a three-course series approved by the Council for Professional Recognition. It is ideal for those currently employed or seeking workforce entry as a childcare professional. In addition to being offered face-to-face, CDA courses are offered fully online through CCM's Virtual Campus. The CDA Educational Endorsement Certificate can be submitted to the Council for Professional Recognition as part of the CDA application process.

Grounded in research and evidence-based practice, the curriculum blends academic and professional preparation. The content is aligned with the national competency standards for the CDA Credential and prepares the students in the following goals:

- To establish and maintain a safe, healthy learning environment
- To advance physical and intellectual competence
- To support social and emotional development and provide positive guidance
- To establish positive and productive relationships with families
- To ensure a well-run, purposeful program responsive to participant needs
- To maintain a commitment to professionalism

Completing the CDA Educational Endorsement is the final step toward a career as a preschool group teacher in a childcare center, as well as careers as a paraprofessional, substitute teacher, and many other child-related careers.

**Faculty**

Dr. Melissa Kasmin  
Assistant Professor, Psychology and Education  
Ph.D, Rutgers University  
MSW, University of Michigan  
BA, Kenyon College  
DH323 973-328-5612, mkasmin@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 eight. 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-210. Curriculum, Teaching and Learning in Early Childhood Education. 3 Credits.**  
LECT 3 hrs  
This course studies designing, implementing, and evaluating developmentally appropriate curriculum for children birth through age eight with a focus on language and literacy, social and emotional learning, creative arts, and social studies, math, science and technology. It will cover practical applications of theories and current research in early childhood education, methods of observing children's behavior and progress, and strategies for developing and using curriculum in all aspects of the daily routine. Attention will be given to anti-bias curriculum and elements of diversity that can influence learning including cultural backgrounds, gender, sexual orientation, religion, English language learners, socio-economic status, family circumstances, and children with special needs. A field work component includes observation of curriculum and teaching and learning in an Early Childhood Education setting.  
**Prerequisites:** CDC-110.

**CDC-220. CDA Capstone: Effective Preschool Practices. 3 Credits.**  
LECT 3 hrs  
This course studies effective, practical, research-based methods for developing preschool teachers. Course content is aligned with the national competency standards for the Child Development Associate (CDA) Credential. It will cover the essentials of planning a safe environment, advancing children's development, building family partnerships, program operations, professional development, authentic assessment, and principles of developmentally appropriate learning. Attention will also be given to current research on brain development in young children, designing the learning environment, professional ethics, and cultural competence.  
**Prerequisites:** CDC-110 and CDC-210.
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, CDC-210
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, CDC-210
Corequisites: CDC-228.

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 gas chromatography (GC), high-performance liquid chromatography (HPLC), Fourier-transform infrared spectroscopy (FTIR) and other state-of-the-art equipment, as well as modern wet chemical techniques.

Chemical Technology graduates earn an Associate in Applied Science degree, which provides them with 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. The department works collaboratively with Career Services in providing opportunities to our students for paid and unpaid internships. Graduates can 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.

For more information, visit the Chemical Technology (http://www.ccm.edu/academics/divdep/health-professions-natural-sciences/department-of-biology-and-chemistry/chemical-technology/) website.

Degrees

• AAS Chemical Technology (p. 52)
• AAS Chemical Technology - Environmental Science Option (p. 52)

AAS Chemical Technology

(P3450)

General Education Foundation

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

Math-Science-Technology 3
MAT-124 Statistics

Social Science or Humanities 3
Choose from General Education course list (Humanities/Social Science)

General Education Electives 9
Choose from General Education course list

General Education Foundation Credits 21

Chemical Technology Core Credits 39

Total Credits 60

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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>ENG-111</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-112</td>
<td>English Composition II</td>
<td>3</td>
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<tr>
<td>MAT-124</td>
<td>Statistics</td>
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</table>

Choose from General Education course list (Humanities/Social Science) 3

**General Education Electives** 9

Choose from General Education course list

**General Education Foundation Credits** 21

**Environmental Science Core**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CHM-125</td>
<td>General Chemistry I - Lecture</td>
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<tr>
<td>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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<tr>
<td>CHM-128</td>
<td>General Chemistry II - Laboratory</td>
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<tr>
<td>BIO-121</td>
<td>General Biology I</td>
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<tr>
<td>BIO-122</td>
<td>General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>BIO-202</td>
<td>Ecology (Fall)</td>
<td>4</td>
</tr>
<tr>
<td>CHM-210</td>
<td>Essentials of Organic Chemistry (Summer)</td>
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<tr>
<td>CHM-218</td>
<td>Analytical Chemistry - Instrumental Analysis</td>
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<tr>
<td>PHY-103</td>
<td>Concepts of Physics</td>
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</tr>
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</table>

Technical Electives 7

**Environmental Science Core Credits** 39

**Total Credits** 60

*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**

Dr. Maria Isaza  
Chairperson, Biology and Chemistry  
Associate Professor, Biology  
Ph.D., Biomedical Sciences, University of Medicine and Dentistry of New Jersey  
B.S., College of Saint Elizabeth  
A.S., County College of Morris  
A.A.S., County College of Morris  
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Courses

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 integumentary, 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-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 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. This course requires field exercises that may include moderate physical activity.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.

BIO-129. Introduction to Botany. 4 Credits.
LECT 3 hrs, LAB 2 hrs
Botany 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 laboratories and greenhouse facilities.
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 majors or for those students enrolled in Curriculum 2160, Nutrition Track. It is an introduction to the body systems and the factors that affect human physiology. Lectures include 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 1 hr
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. This course requires field exercises that may include moderate physical activity.
Prerequisites: Minimum grade of C required for BIO-121 and BIO-122 or BIO-180 and BIO-181 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 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: Permission of department chair.

BIO-228. Internship Work Experience - Biology. 3 Credits.
COOP 3 hrs
This course provides selected students enrolled in the 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: 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-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.

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) 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-210. Essentials of Organic Chemistry. 4 Credits.
LECT 3 hrs, LAB 3 hrs
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-125 and CHM-126 (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 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-218. Analytical Chemistry - Instrumental Analysis. 4 Credits.
LECT 3 hrs, LAB 3 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: 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: 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.

Child and Family Studies

The A.S. Degree in Child and Family Studies is an interdisciplinary option for those curious about teaching and also interested in other related careers. Graduates can transfer to pursue a variety of B.A. Degree programs such as Education, Childhood Studies, Human Development, Social Work, and Counseling. The Child and Family Studies curriculum provides a strong foundation for those directly entering the workforce as well as students pursuing further education.

The interdisciplinary nature of this degree ensures that candidates develop theoretical and practical knowledge in areas such as child development, family studies, humanities, mathematics, technology, social sciences, biological sciences, the arts, and multicultural/global perspectives.

The Early Childhood Programs provide outstanding instruction and experiential learning to prepare students for advanced study and child-related careers in a diverse and changing world. The curriculum is aligned with state and national standards and blends academic and professional preparation in a wide variety of courses.

Degrees

A.S. Child and Family Studies

(P5134)

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Faculty

Dr. Melissa Kasmin
Assistant Professor, Psychology and Education
Ph.D, Rutgers University
MSW, University of Michigan
BA, Kenyon College
DH323 973-328-5612, mkasmin@ccm.edu

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<td>CDC-210</td>
<td>Curriculum, Teaching and Learning in Early Childhood Education</td>
<td>3</td>
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</tbody>
</table>
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 eight. 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-210. Curriculum, Teaching and Learning in Early Childhood Education. 3 Credits.**

LECT 3 hrs

This course studies designing, implementing, and evaluating developmentally appropriate curriculum for children birth through age eight with a focus on language and literacy, social and emotional learning, creative arts, and social studies, math, science and technology. It will cover practical applications of theories and current research in early childhood education, methods of observing children's behavior and progress, and strategies for developing and using curriculum in all aspects of the daily routine. Attention will be given to anti-bias curriculum and elements of diversity that can influence learning including cultural backgrounds, gender, sexual orientation, religion, English language learners, socio-economic status, family circumstances, and children with special needs. A field work component includes observation of curriculum and teaching and learning in an Early Childhood Education setting.

**Prerequisites:** CDC-110.

**CDC-220. CDA Capstone: Effective Preschool Practices. 3 Credits.**

LECT 3 hrs

This course studies effective, practical, research-based methods for developing preschool teachers. Course content is aligned with the national competency standards for the Child Development Associate (CDA) Credential. It will cover the essentials of planning a safe environment, advancing children's development, building family partnerships, program operations, professional development, authentic assessment, and principles of developmentally appropriate learning. Attention will also be given to current research on brain development in young children, designing the learning environment, professional ethics, and cultural competence.

**Prerequisites:** CDC-110 and CDC-210.

**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, CDC-210

**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, CDC-210

**Corequisites:** CDC-228.

Communication

Communication majors are exposed to a variety of Liberal Arts offerings 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 in Communication.

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 in 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 [webpage](http://www.ccm.edu/academics/divdep/liberal-arts/department-of-communication/).
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.

**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-007 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.

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
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 a student television program.
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 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. The culmination of the course is a student television program.
Prerequisites: COM-111 or permission of department chair.

COM-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.

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-025 or ENG-022 or ENG-007.

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
Corequisites: COM-111
Additional Fees: Course fee applies.

COM-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.

COM-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: COM-114 and COM-211
Corequisites: MED-210
Additional Fees: Course fee applies.
COM-213. Screenwriting. 3 Credits.
LECT 3 hrs
Screenwriting is a course in creating and adapting stories for film. Theories of narrative and cinematic structure provide a foundation for students to create and explore characters, conflicts, relationships, and imaginary worlds of their own design. A particular focus on story structure and dialog guides all lessons and assignments and distinguishes this course as one that is applicable to both the study and performance of a wide variety of narrative and dramatic art forms.
Prerequisites: ENG-111 and COM-234.

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

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

Associate in Applied Science Degree - Game Development

The Game Development option offers students interested in the computer game and simulation fields a solid background in the foundations of hardware/software, operating systems, programming, 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/divdeptrmet/department-of-information-technologies/) website.

Degrees

• AAS Computer Information Systems - Game Development (p. 62)

Game Development

A Computer Information Systems AAS Degree Option
(P3504)

General Education Foundation

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
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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>MAT-123 Precalculus</td>
<td>4</td>
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<td>Humanities</td>
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<td>General Education Electives</td>
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Courses

CMP-000. Technology Literacy Test. 0 Credits.
LECT hrs
Technology Literacy Test.

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 Information Technologies Department majors.

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-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. Not for Information Technologies Department majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-126, CMP-135, or BUS-119. **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.

LECT 2 hrs, LAB 2 hrs
This is a fundamental course in problem solving and programming. This course introduces concepts such as how to solve problems by designing and implementing algorithms using a popular programming language. Topics include: pseudocode, algorithms, variables, constants, using decisions and loop structures to construct effective code, using built-in functions, creating functions and modules, and simple debugging techniques for detecting errors. Use of real-world problems in Web Development, Cybersecurity and Data Science are explored. No prior programming experience is required. **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-149. Critical Game Play. 3 Credits.
LECT 2 hrs, LAB 1 hr
This is an introductory course designed to increase games literacy and foster a shared understanding of the history of games, culturally and aesthetically. A thorough knowledge of the games that have shaped this industry is integral for all students considering entering the field. The class covers a wide spectrum of digital and analogue games. Students will take part in discussions and lectures. They will compose a short analyses of different games and justify their stances in group-wide presentations. The primary activity of the class is critical play - playing games and analyzing them in order to better understand the medium on a personal and professional level.
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-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-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-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.
Prerequisites: CMP-124 or equivalent or permission of department chair
Additional Fees: Course fee applies.

CMP-241. Database Programming (SQL). 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-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-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 back end support for 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-255. Linux. 4 Credits.
LECT 3 hrs, LAB 1 hr
This is a hands-on course in the administration of a Linux Operating System. Students utilize the command line interface to control the operating system and its utilities. Focus is placed on the file system, user system, file security, process and job management, X-Windows, shells and shell scripting. A POSIX-compliant shell, such as ash, dash, bash or ksh, is introduced. Concepts include redirection, piping, and regular expressions. Upon successful completion of this course, students are proficient in using the Linux operating system, with combined lecture and lab exercises focusing on basic/intermediate skills essential to an IT professional.
Prerequisites: CMP-128
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-263. Web Development Workflow. 4 Credits.**
LECT 3 hrs, LAB 2 hrs
This course provides students with cutting edge Web development skills to create and maintain Web sites that are modern, responsive, and dynamically delivered across a wide range of devices. Students learn leading Web design and development tools including current industry standard Web interactive tools, Git, JQuery Framework, and content management systems. Instruction and practice on available platforms provide seamless integration and unified interface across all tools to streamline Web development from local development to staging to production. Students will develop competence in the use of industry-leading development tools in building a current, engaging, and dynamic Web site.
Corequisites: CMP-239 or MED-110 or GRD-108
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-280. Software Engineering. 3 Credits.**
LECT 2 hrs, LAB 2 hrs
Software engineering practices are examined in the context of the system development life cycle, comparing traditional structured approach and the object-oriented approach, with the main focus on object-oriented approach. Topics include user stories, use cases, object-oriented modeling, comprehensive project management, the Unified Modeling Language (UML) diagrams, Agile techniques, and user-interface design. Class projects provide students with practice in developing soft skills necessary to work as part of a team. Students participate in a semester-long team project to design an application using system analysis and design techniques.
Prerequisites: CMP-128 and one of the following: CMP-129, CMP-150, or CMP-237
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.

### 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), Computer Assembly Language, and Software Engineering.

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 US Bureau of Labor Statistics predicts that computing will have 1,240,100 job openings by 2022 and that the growth rate of job opportunities is much faster than average for all occupations. For example, it projects a 22.8 percent employment growth for software developers between 2012 and 2022. 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/department-of-information-technologies/) website.

#### Degrees

**AS Computer Science**

(P2500)

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### General Education Foundation

<table>
<thead>
<tr>
<th>Category</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>Math-Science-Technology</td>
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<tr>
<td>MAT-123 Precalculus</td>
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<tr>
<td>MAT-131 Analytic Geometry and Calculus I</td>
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<td>General Education Foundation Credits</td>
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### Computer Science Core

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CMP-128 Computer Science I</td>
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<tr>
<td>CMP-129 Computer Science II</td>
<td>3</td>
</tr>
<tr>
<td>CMP-230 Computer Architecture and Assembly Language</td>
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<td>CMP-233 Data Structures and Algorithms</td>
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<td>MAT-225 Discrete Mathematics</td>
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<td>Computer Science Core Credits</td>
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</tr>
</tbody>
</table>

Total Credits 60

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

### Faculty

Colleen Bamford
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Certificates of Achievement

Information Security

A Certificate of Achievement within Computer Information Systems  
(P0354)

<table>
<thead>
<tr>
<th>Course</th>
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<td>CMP-120</td>
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<tr>
<td>CMP-124</td>
<td>Network Security</td>
<td>3</td>
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<td>CMP-125</td>
<td>Information Security Management</td>
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<tr>
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<td>CMP-101</td>
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<tr>
<td>CMP-108</td>
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¹ Students should consult their academic advisors when selecting these courses.

Total Credits 18

Additional Fees: Course fee applies.

For more information, please consult your academic advisor.

Certificate of Achievement in Information Security

A Certificate of Achievement within Computer Information Systems (P0354)

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Total Credits 18

Additional Fees: Course fee applies.

For more information, please consult your academic advisor.
**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. Not for Information Technologies Department majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-126, CMP-135, or BUS-119.

**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-131. Fundamentals of Programming (python). 3 Credits.**
LECT 2 hrs, LAB 2 hrs
This is a fundamental course in problem solving and programming. This course introduces concepts such as how to solve problems by designing and implementing algorithms using a popular programming language. Topics include: pseudocode, algorithms, variables, constants, using decisions and loop structures to construct effective code, using built-in functions, creating functions and modules, and simple debugging techniques for detecting errors. Use of real-world problems in Web Development, Cybersecurity and Data Science are explored. No prior programming experience is required.

**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-149. Critical Game Play. 3 Credits.**
LECT 2 hrs, LAB 1 hr
This is an introductory course designed to increase games literacy and foster a shared understanding of the history of games, culturally and aesthetically. A thorough knowledge of the games that have shaped this industry is integral for all students considering entering the field. The class covers a wide spectrum of digital and analogue games. Students will take part in discussions and lectures. They will compose a short analyses of different games and justify their stances in group-wide presentations. The primary activity of the class is critical play - playing games and analyzing them in order to better understand the medium on a personal and professional level.

**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, collision, 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-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-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-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 (SQL). 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-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-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-255. Linux. 4 Credits.
LECT 3 hrs, LAB 1 hr
This is a hands-on course in the administration of a Linux Operating System. Students utilize the command line interface to control the operating system and its utilities. Focus is placed on the file system, user system, file security, process and job management, X-Windows, shells and shell scripting. A POSIX-compliant shell, such as ash, dash, bash or ksh, is introduced. Concepts include redirection, piping, and regular expressions. Upon successful completion of this course, students are proficient in using the Linux operating system, with combined lecture and lab exercises focusing on basic/intermediate skills essential to an IT professional.
Prerequisites: CMP-128
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-263. Web Development Workflow. 4 Credits.
LECT 3 hrs, LAB 2 hrs
This course provides students with cutting edge Web development skills to create and maintain Web sites that are modern, responsive, and dynamically delivered across a wide range of devices. Students learn leading Web design and development tools including current industry standard Web interactive tools, Git, JQuery Framework, and content management systems. Instruction and practice on available platforms provide seamless integration and unified interface across all tools to streamline Web development from local development to staging to production. Students will develop competence in the use of industry-leading development tools in building a current, engaging, and dynamic Web site.
Corequisites: CMP-239 or MED-110 or GRD-108
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-280. Software Engineering. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Software engineering practices are examined in the context of the system development life cycle, comparing traditional structured approach and the object-oriented approach, with the main focus on object-oriented approach. Topics include user stories, use cases, object-oriented modeling, comprehensive project management, the Unified Modeling Language (UML) diagrams, Agile techniques, and user-interface design. Class projects provide students with practice in developing soft skills necessary to work as part of a team. Students participate in a semester-long team project to design an application using system analysis and design techniques.
Prerequisites: CMP-128 and one of the following: CMP-129, CMP-150, or CMP-237
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 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-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-294. 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-295. 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-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/divdep/bmnet/department-of-engineering-technologies-and-engineering-science/criminal-justice/) 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
ENG-111 English Composition I
ENG-112 English Composition II
COM-109 Speech Fundamentals

Math-Science-Technology
CMP-135 Computer Concepts With Applications
or
CMP-126 Computer Technology and Applications
CHM-105 Forensic Science

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

Humanities
HIS-203 History of Minorities in U.S.

General Education
SOC-214 Cultural Diversity in America - the Sociology of Ethnic and Minority Groups

General Education Foundation Credits 31

Criminal Justice Core
CJS-105 Introduction to Careers in Public Safety 2
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
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

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

POL-270 Civil Liberties-Basic Rights and Freedom 3
or POL-222 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

Department 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

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 2 3

1 Depending on the courses selected to satisfy this category, the total number of credits may exceed a total of 10 credits.
2. Department Permission is needed for students seeking to substitute an internship for CJS-224

Faculty

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B.A., William Patterson University
A.S., County College of Morris
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Courses

CJS-105. Introduction to Careers in Public Safety. 2 Credits.
LECT 2 hrs
This mandatory first-semester hybrid course is an introduction
to careers in the Public Safety field, as well as an introduction to
research and writing, ethics, and critical thinking. The course also
incorporates student success initiatives designed to address and
improve the student experience.
Corequisites: CJS-121.

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-118. Fundamentals of Law. 3 Credits.
LECT 3 hrs
Fundamentals of Law is an introduction to the court system and the
principles of substantive law in the field of contracts, torts, property,
and family law.
Prerequisites: CJS-105 CJS-121
Corequisites: ENG-111.

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.
Prerequisites: CJS-105
Corequisites: CJS-105.

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-140. Basic Emergency Telecommunicat. 3 Credits.
LECT 3.2 hrs
The 40-hour basic Telecommunicator Training Course, as approved by the Office of Emergency Telecommunication Service (OETS), is designed for dispatchers having less than 320 hours of public safety dispatch experience. The course addresses both functional jobs of complaint taker and dispatcher, rather than dealing with them separately. Likewise, it deals with the basics of telecommunications for all public safety services. All participants who successfully complete this course will be certified by the State Office of Emergency Telecommunication Service as a P.S.A.P. (Public Safety Answering Point) operator.

CJS-141. Basic Emergency Medical Dispat. 2 Credits.
LECT 2.6 hrs
A required course for 9-1-1 Telecommunicator. This state-approved certification course will enable the student to properly answer, prioritize and dispatch calls for medical aid, and to provide instructions for preliminary emergency medical care prior to the arrival of emergency medical personnel. This class will include practical exercises and demonstrations.

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 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-220. Litigation Procedures. 3 Credits.
LECT 3 hrs
This course is an introduction to the legal system with a focus on the New Jersey Court System. A review of substantive areas of law and application of procedural concepts from initiation of a lawsuit through entry of judgment will be undertaken. The course will also address the process of client interviewing, investigation, drafting of pleadings and other documents, and preparation for trial.
Prerequisites: CJS-105 CJS-121
Corequisites: ENG-111.

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-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-226. Internship/Work Experience-Criminal Justice. 1 Credit.
COOP 1 hr
This course provides students enrolled in the Criminal Justice program with job-oriented training and practical work experience in a work environment prior to permanent employment and requires a minimum of 45 hours of engagement. The course may be taken in fulfillment of requirement of an elective in the Criminal Justice curricula. Students desiring to participate in this experience must make their intention known to the coordinator of Criminal Justice internships prior to beginning the internship.
Prerequisites: CJS-121 CJS-116 Students must have a minimum of a 2.5 GPA and completed a minimum of 30 credits.
CJS-227. Internship/Work Experience-Criminal Just. 2 Credits.
COOP 2 hrs
This course provides students enrolled in the Criminal Justice program with job-oriented training and practical work experience in a work environment prior to permanent employment and requires a minimum of 90 hours of engagement. The course may be taken in fulfillment of requirement of an elective in the Criminal Justice curricula. Students desiring to participate in this experience must make their intention known to the coordinator of Criminal Justice internships prior to beginning the internship. **Prerequisites:** CJS-116 CJS-121 Students must have a minimum of a 2.5 GPA and completed a minimum of 30 credits.

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-230. Ethics in the Law. 3 Credits.
LECT 3 hrs
This course will introduce students to the ethical issues that are present in the legal system. Emphasis will be placed on the New Jersey Rules of Professional Conduct. Students will analyze case studies and apply the appropriate Rules of Conduct. This class is designed for students seeking positions in the legal system including careers as paralegals, judiciary staff, attorneys, and law enforcement officers. **Prerequisites:** ENG-111 CJS-105 CJS-121.

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.

CJS-ELE. Criminal Justice Elective. 3 Credits.
LECT 3 hrs

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**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/culinary-arts-and-science-degree/) 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)

**General Education Foundation**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>6</td>
</tr>
<tr>
<td>Math-Science-Technology Elective</td>
<td>3</td>
</tr>
<tr>
<td>Social Science or Humanities</td>
<td>3</td>
</tr>
<tr>
<td>General Education Electives</td>
<td>8</td>
</tr>
</tbody>
</table>

Choose from General Education Course List

**Specialized Culinary Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOS-100</td>
<td>Serv-Safe Food Handling</td>
<td>1</td>
</tr>
<tr>
<td>HOS-101</td>
<td>Introduction to Food</td>
<td>3</td>
</tr>
<tr>
<td>HOS-102</td>
<td>Food Management</td>
<td>3</td>
</tr>
<tr>
<td>HOS-103</td>
<td>Food Production</td>
<td>3</td>
</tr>
<tr>
<td>HOS-105</td>
<td>Food Science and Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>HOS-106</td>
<td>Success in Hospitality</td>
<td>1</td>
</tr>
<tr>
<td>HOS-117</td>
<td>Introduction to Baking</td>
<td>3</td>
</tr>
<tr>
<td>HOS-118</td>
<td>Introduction to the Hospitality Industry</td>
<td>3</td>
</tr>
<tr>
<td>HOS-210</td>
<td>Dining Room Management</td>
<td>3</td>
</tr>
<tr>
<td>HOS-211</td>
<td>Human Resource Management in the Hospitality Industry</td>
<td>3</td>
</tr>
<tr>
<td>HOS-213</td>
<td>Food and Beverage Purchasing and Cost Controls</td>
<td>3</td>
</tr>
<tr>
<td>HOS-233</td>
<td>Food as Art</td>
<td>3</td>
</tr>
<tr>
<td>HOS-235</td>
<td>Restaurant Operations</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose four (4) credits from below electives

4
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 3 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-100 or equivalent  
Additional Fees: Course fee applies.

HOS-105. Food Science and Nutrition. 3 Credits.  
LECT 2 hrs, LAB 2 hrs  
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 or equivalent  
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. The four primary areas of the Hospitality Industry (Food services, accommodations, recreation, and entertainment sectors) are all introduced. Also studied are basic concepts of event planning, ownership, human resources, marketing, cost controls, facilities management, and customer service.

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. Chocolates. 1 Credit.
LECT 2 hrs
The art of working with chocolate is the emphasis of this class. This course will cover the theoretical, practical and artistic aspect of chocolate and confections. The students will apply tempering techniques to create a variety of truffles, hand dipped and molded chocolates. The course will also build on sugar cooking skills for the students to create brittle and toffee.

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.
LECT 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.

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.

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.
COOP 1 hr
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in a 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.
COOP 2 hrs
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in a 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.
COOP 3 hrs
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in a 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, HOS 121
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 2 hrs
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 and 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 and faculty member.

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.

HOS-250. Food Truck Entrepreneur. 3 Credits.
LECT 2 hrs, LAB 1 hr
Food trucks have become a popular and important part of the hospitality industry. This course introduces the fundamentals of owning and operating a food trailer or truck. The relatively low cost of entry combined with free and low-cost ways to market via social media are just two of the reasons that budding entrepreneurs are joining this exciting field. The basics of food vending, business plans, menu planning, production design, location selection, federal/state/local regulations, licenses and permits will all be covered in the coursework. Students will develop the necessary skills to succeed in this exciting and growing industry while experiencing practical experience in customer service and food trailer operations.
Prerequisites: HOS-100.

Dance

The Associate in Fine Arts (AFA) degree in Dance focuses on developing an understanding of the subject through the study of technique, history, theory, and performance. The program focuses on intensive technical training and artistic development, and is designed to provide students with the competencies necessary to achieve seamless articulation into a Bachelor of Fine Arts program.

Articulation Agreements

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

Degrees

AFA Dance

(P4170)
General Education Foundation

Communication 6
- ENG-111 English Composition I
- ENG-112 English Composition II
Math-Science 8
- MAT-120 Mathematics for Liberal Arts
- BIO-133 Human Biology

Humanities 3
- DAN-112 Dance Appreciation

General Education Electives 6
- Diversity Elective

General Education Foundation Credits 23

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

Dance Elective 1

Dance Core Credits 37

Total Credits 60

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. 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 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. 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. 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. 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 articulate 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 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, auditions, rehearsals and possible performance. Practical experience is gained by participating in concerts at County College of Morris, on stage and/or backstage.

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.

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. 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. 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. 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. 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. 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.

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.
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.
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.
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.
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.
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.
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.
Prerequisites: DAN-224
Additional Fees: Course fee applies.

**DAN-230. Dance Internship (45-100 hours). 1 Credit.**
COOP 1 hr
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.

**DAN-231. Dance Internship (90-200 hours). 2 Credits.**
COOP 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.

**DAN-232. Dance Internship (135-300 hours). 3 Credits.**
COOP 3 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

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 research-based 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 BFA or B.A. degree. Design graduates major in industrial design, interior design, architecture, fashion design, fashion merchandising or other design disciplines.

Articulation Agreements

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

For more information, visit the Design [website](http://www.ccm.edu/academics/divdep/department-of-art-and-design/design/).

Degrees

- Architecture: (p. 85) A Track within the AFA Design Option
- Fashion Design: (p. 85) A Track within the AFA Design Option
- Fashion Merchandising: (p. 86) A Track within the AFA Design Option
- Industrial Design: (p. 86) A Track within the AFA Design Option
- Interior Design: (p. 86) A Track within the AFA Design Option

AFA Design

(P4141)

Architecture

A Track within Design

General Education Foundation

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<td>MAT-123 Precalculus</td>
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<td>PHY-125 General Physics I - Lecture</td>
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Design/Architecture Core

| DSN-110 History of Design | 3 |
| ART-122 Drawing I | 3 |
| ART-131 Color Theory | 3 |
| ART-132 Three Dimensional Design | 3 |
| Design Elective | |
| DSN-165 Drawing for Designers | 3 |
| DSN-125 Design Rendering | 3 |
| DSN-120 Design Concepts I | 3 |
| DSN-220 Design Concepts II | 3 |
| ART-230 Portfolio and Presentation | 3 |
| ENR-117 Computer-Aided Drafting I | 2 |
| ENR-118 Computer-Aided Drafting II | 2 |
| DSN-219 Advanced CAD 3D Modeling | 3 |
| Architecture Design Elective | 3 |

Total Credits | 60

Fashion Design

A Track within Design

General Education Foundation

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Design/Fashion Design Core

| DSN-110 History of Design | 3 |
| Design Elective | |
| ART-122 Drawing I | 3 |
| ART-131 Color Theory | 3 |
| ART-132 Three Dimensional Design | 3 |
| DSN-165 Drawing for Designers | 3 |
| DSN-125 Design Rendering | 3 |
| DSN-120 Design Concepts I | 3 |
| DSN-220 Design Concepts II | 3 |
| ART-230 Portfolio and Presentation | 3 |
| DSN-135 Fashion Construction Technology I | 3 |
| DSN-160 Fashion Construction Technology II | 3 |
| Fashion Design Elective | 3 |
| Design/Fashion Design Core Credits | 40 |

Total Credits | 60
## Fashion Merchandising

**A Track within Design**

### General Education Foundation

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### Design/Fashion Merchandising Core

| DSN-110       | History of Design | 3 |
| ART-122       | Drawing I         | 3 |
| ART-132       | Three Dimensional Design | 3 |
| ART-131       | Color Theory      | 3 |
| DSN-165       | Drawing for Designers | 3 |
| DSN-125       | Design Rendering  | 3 |
| DSN-220       | Design Concepts I | 3 |
| ART-230       | Portfolio and Presentation | 3 |
| DSN-145       | Introduction to Fashion and Visual Merchandising | 3 |
| DSN-146       | Fashion Merchandising II | 3 |
| MKT-113       | Principles of Marketing I | 3 |
| Design Elective | 4 |
| Design/Fashion Merchandising Core Credits | 40 |

### Total Credits

60

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## Industrial Design

**A Track within Design**

### General Education Foundation

<table>
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<tr>
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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>or COM-10</td>
<td>Speech Fundamentals</td>
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<td>ART-133</td>
<td>Art History I</td>
</tr>
<tr>
<td>or ART-134</td>
<td>Art History II</td>
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</table>

### Design/Interior Design Core

| DSN-110       | History of Design | 3 |
| Design Elective | 3 |
| ART-122       | Drawing I         | 3 |
| ART-131       | Color Theory      | 3 |
| ART-132       | Three Dimensional Design | 3 |
| DSN-165       | Drawing for Designers | 3 |
| DSN-125       | Design Rendering  | 3 |
| DSN-220       | Design Concepts I | 3 |
| DSN-165       | Design Concepts II | 3 |
| ART-230       | Portfolio and Presentation | 3 |
| ENR-117       | Computer-Aided Drafting I | 2 |
| ENR-118       | Computer-Aided Drafting II | 2 |
| DSN-115       | Basic Drafting    | 3 |
| Design/Interior Design Core Credits | 40 |

### Total Credits

60

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## Interior Design

**A Track within Design**

### General Education Foundation

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<td>Art History I</td>
</tr>
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<td>or ART-134</td>
<td>Art History II</td>
</tr>
</tbody>
</table>

### Design/Interior Design Core

| DSN-110       | History of Design | 3 |
| Design Elective | 3 |
| ART-122       | Drawing I         | 3 |
| ART-131       | Color Theory      | 3 |
| ART-132       | Three Dimensional Design | 3 |
| DSN-165       | Drawing for Designers | 3 |
| DSN-125       | Design Rendering  | 3 |
| DSN-220       | Design Concepts I | 3 |
| DSN-219       | Advanced CAD 3D Modeling | 3 |
| Design/Interior Design Core Credits | 40 |

### Total Credits

60
Faculty

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Courses

DSN-103. Introduction to Sewing. 1 Credit.
LECT 1 hr
A studio course that introduces the student to the primary aspects
of Fashion Construction. Content includes an overview of industry
related equipment and tools, dart manipulation, and pattern reading.
Students will illustrate understanding of key lectures/demonstrations
through evidence found in sewing skill samplers.

DSN-108. Two Dimensional Design for Designers. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A studio course that explores a variety of techniques of visualization
to develop and present design concepts. Students learn to use
elements and principles to achieve a synthesis of form, space,
composition, and content. Emphasis will be given on communicating
ideas for realization as architectural and interior spaces, consumer
products, packaging, and fashion design. The course is designed
to address the range of formal issues, processes, and material
practices students will encounter as they move into the more
specialized areas of design
Corequisites: ART-122.

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 2 hrs, LAB 3 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, DSN-108
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-108, DSN-120 and ART-122
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.
Prerequisites: DSN-103
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, DSN-108, 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-detalled 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 department chair
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.

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 department chair.

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 topics that have both a lecture and a laboratory (studio) component in an area of Design.
Additional Fees: Course fee applies.

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/department-of-information-technologies/) 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
- AAS Digital Media Technology Track 2 - Game Design
- AAS Digital Media Technology Track 3 - Graphic Design
- AAS Digital Media Technology Track 4 - Journalism
- AAS Digital Media Technology Track 5 - Music
- AAS Digital Media Technology Track 6 - Photography
- AAS Digital Media Technology Track 7 - Web Development
- AAS Digital Media Technology Track 8 - Mobile App Design

AAS Digital Media Technology
(P3530)

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<td>Science Elective</td>
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Digital Media Technology Core

| CMP-239  The Internet and Web Page Design | 3 |
| CMP-244  Web Design II | 3 |
| MED-110  Multimedia I | 3 |
| CMP-263  Web Development Workflow | 4 |
| MED-113  Multimedia II | 3 |
| COM-114  Media Aesthetics | 3 |
| MED-119  Digital Media Production | 3 |
| MED-210  Digital Video Editing | 3 |
| MED-213  Multimedia Authoring and Design | 3 |
| or CMP-250  Game Production |   |
| MED-220  Animation | 3 |
| Technical Tracks | 6 |
| Free Elective | 3 |
| Digital Media Technology Core Credits | 40 |
| Total Credits | 60 |

Broadcasting

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

| COM-211  Television Production I | 3 |
| COM-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.

<table>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
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<td>CMP-128</td>
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<tr>
<td>CMP-249</td>
<td>Advanced Web Programming</td>
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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.

<table>
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<tr>
<td>CMP-128</td>
<td>Computer Science I</td>
<td>3</td>
</tr>
<tr>
<td>CMP-170</td>
<td>Mobile App Design</td>
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</tbody>
</table>

Certificates of Achievement

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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
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<tr>
<td>MED-119</td>
<td>Digital Media Production</td>
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<td>Introduction to Electronic Music</td>
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<td>CMP-263</td>
<td>Web Development Workflow</td>
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<td>MUS-165</td>
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<tr>
<td>PHO-115</td>
<td>Photography I</td>
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</table>

Total Credits: 15

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

Faculty

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B.S., Jersey City State College

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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, 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. Several projects throughout the course give students hands-on experience with a variety of digital multimedia tools.
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-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 or COM-211
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-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 After Effects (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.
COOP 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, kinematics, 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 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-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 Degrees

Early Childhood Education

The Associate in Science degree in Early Childhood Education is an excellent starting point for those pursuing Teacher Certification. Students can transfer to earn a B.A. Degree in Early Childhood Education and/or Elementary Education. This foundation prepares students to become P-3 and/or K-6 teachers in public and private sectors. Many students also elect to pursue Special Education Certification upon transfer.

Early Childhood Education is a multidisciplinary field and candidates develop theoretical and practical knowledge in areas such as child development, humanities, mathematics, technology, social sciences, biological sciences, the arts, and multicultural/global perspectives.

The Early Childhood Education Programs provide outstanding instruction and experiential learning to prepare students for advanced study and child-related careers in a diverse and changing world. The curriculum is aligned with state and national standards and blends academic and professional preparation in a wide variety of courses.

For more information, visit the Early Childhood Education (https://www.ccm.edu/academics/divdep/liberal-arts/department-of-psychology-and-education/early-childhood-education/) website.

Child and Family Studies

The A.S. Degree in Child and Family Studies is an interdisciplinary option for those curious about teaching but also interested in other related careers. Graduates can transfer to pursue a variety of B.A. Degree programs such as Education, Childhood Studies, Human Development, Social Work, and Counseling. The Child and Family Studies curriculum provides a strong foundation for those directly entering the workforce as well as students pursuing further education.

The interdisciplinary nature of this degree ensures that candidates develop theoretical and practical knowledge in areas such as child development, family studies, humanities, mathematics, technology, social sciences, biological sciences, the arts, and multicultural/global perspectives.

The Child and Family Studies program provide outstanding instruction and experiential learning to prepare students for advanced study and child-related careers in a diverse and changing world. The curriculum is aligned with state and national standards and blends academic and professional preparation in a wide variety of courses.

For more information, visit the Child and Family Studies (https://www.ccm.edu/academics/divdep/liberal-arts/department-of-psychology-and-education/child-and-family-studies/) website.

Degrees

• A.S. Degree in Child and Family Studies (p. 92)
• A.S. Degree in Early Childhood Education (p. 92)

A.S. Degree in Child and Family Studies

(P2941)

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>
<td>6</td>
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<tr>
<td>ENG-112 English Composition II</td>
<td>6</td>
</tr>
<tr>
<td>Math/Science/Tech Lab Science Elective</td>
<td>12</td>
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<tr>
<td>Mathematics Elective CMP-126 Computer Technology and Applications</td>
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<tr>
<td>Social Sciences PSY-113 General Psychology</td>
<td>6</td>
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</table>
SOC-120  Principles of Sociology  
Humans Elective  3  
General Education Electives  6  
Diversity Elective  
Communication Elective  
Child & Family Studies Core  27  
PSY-213  Child Psychology  
PSY-219  Developmental Psychology - the Human Lifespan  
HMS-215  Introduction to Social Welfare and Human Services  
CDC-110  Early Childhood Development  
MUS-129  Music in Early Childhood (OR ENG-118 Children's Literature)  
CDC-210  Curriculum, Teaching and Learning in Early Childhood Education  
CDC-220  CDA Capstone: Effective Preschool Practices  
SOC-209  The Family  
PSY-291  Special Topics in Psychology  
GENERAL EDUCATION FOUNDATION Credits  60  

A.S. Early Childhood Education  
(P2940)  

**General Education Foundation**  
Communication  6  
ENG-111  English Composition I  
ENG-112  English Composition II  
Math-Science-Technology  11  
Mathematics Elective  
Laboratory Science Elective  
CMG-130  Computer Concepts With Applications  
Social Science  6  
PSY-113  General Psychology  
SOC-120  Principles of Sociology  
Humanities  3  
Choose from General Education Course List (Humanities)  
General Education Courses  6  
COM-109  Speech Fundamentals  
General Education Diversity Elective (choose one of the following)  
ENG-118  Children's Literature  
SOC-202  Contemporary Social Issues - America As a Diverse Society  
PSY-116  Psychology and Education of the Disabled  
SOC-209  The Family  
General Education Foundation Credits  32  

**Early Childhood Education Core**  
PSY-213  Child Psychology  3  
PSY-217  Educational Psychology  3  
MUS-129  Music in Early Childhood  3  
CDC-110  Early Childhood Development  3  
CDC-210  Curriculum, Teaching and Learning in Early Childhood Education  3  
CDC-220  CDA Capstone: Effective Preschool Practices  3  
CDC-228  Cooperative Work Experience- Child Care  1  
CDC-229  Cooperative Work Experience-Child Care - Related Class  

Total Credits  34  

**Certificates**  
- Childcare Specialist Certificate (p. 93)  
- CDA Educational Endorsement Certificate (p. 94)  

**Childcare Specialist Certificate**  
(P5134)  

This program is designed to prepare students for a career in the field of child care. The Childcare Specialist Certificate is an in-depth credential for the early childhood professional. 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 and Education department at 973-328-5631.  

For more information, please visit the Childcare Specialist Certificate (https://www.ccm.edu/academics/divdep/liberal-arts/department-of-psychology-and-education/childcare-specialist-certificate/) webpage.  

Communications  3  
ENG-111  English Composition I  
Social Science  9  
PSY-113  General Psychology  
SOC-120  Principles of Sociology  
PSY-213  Child Psychology  
General Education Diversity Elective (Choose two of the following)  6  
ENG-118  Children's Literature  
SOC-209  The Family  
PSY-116  Psychology and Education of the Disabled  
Childcare Specialist Core  16  
MUS-129  Music in Early Childhood  
or PSY-217 Educational Psychology  
CDC-110  Early Childhood Development  
CDC-210  Curriculum, Teaching and Learning in Early Childhood Education  
CDC-220  CDA Capstone: Effective Preschool Practices  
CDC-228  Cooperative Work Experience- Child Care  1  
CDC-229  Cooperative Work Experience-Child Care - Related Class  

Total Credits  60
Students should consult their academic advisors when selecting these courses.

CDA Educational Endorsement Certificate
(P0331)

The CDA Educational Endorsement is designed to support achieving the national CDA credential. Grounded in research and evidence-based practice, the curriculum blends academic and professional preparation through a series of three courses recognized by the Council for Professional Recognition.

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 and Education department at 973-328-5631.

For more information, please visit the CDA Educational Endorsement Certificate (https://www.ccm.edu/academics/divdep/liberal-arts/department-of-psychology-and-education/cda-educational-endorsement-certificate/) webpage.

Faculty

Dr. Melissa Kasmin
Assistant Professor, Psychology and Education
Ph.D, Rutgers University
MSW, University of Michigan
BA, Kenyon College
DH323 973-328-5612, mkasmin@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 eight. 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-210. Curriculum, Teaching and Learning in Early Childhood Education. 3 Credits.
LECT 3 hrs
This course studies designing, implementing, and evaluating developmentally appropriate curriculum for children birth through age eight with a focus on language and literacy, social and emotional learning, creative arts, and social studies, math, science and technology. It will cover practical applications of theories and current research in early childhood education, methods of observing children's behavior and progress, and strategies for developing and using curriculum in all aspects of the daily routine. Attention will be given to anti-bias curriculum and elements of diversity that can influence learning including cultural backgrounds, gender, sexual orientation, religion, English language learners, socio-economic status, family circumstances, and children with special needs. A field work component includes observation of curriculum and teaching and learning in an Early Childhood Education setting.
Prerequisites: CDC-110.

CDC-220. CDA Capstone: Effective Preschool Practices. 3 Credits.
LECT 3 hrs
This course studies effective, practical, research-based methods for developing preschool teachers. Course content is aligned with the national competency standards for the Child Development Associate (CDA) Credential. It will cover the essentials of planning a safe environment, advancing children's development, building family partnerships, program operations, professional development, authentic assessment, and principles of developmentally appropriate learning. Attention will also be given to current research on brain development in young children, designing the learning environment, professional ethics, and cultural competence.
Prerequisites: CDC-110 and CDC-210.

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: CDC-110 and CDC-210.

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: ENL-111, ENG-118, MUS-129, PSY-113, PSY-213, PSY-217, SOC-120, SOC-209, CDC-110, CDC-210
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 crafts-person 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, www.abet.org, and is in compliance with the Electronics Engineering Technology program criteria. You can find more information on the commission at the ABET (http://www.abet.org) (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 (https://www.ccm.edu/academics/divdep/bmet/department-of-engineering-technologies-and-engineering-science/electronics-engineering-technology/) website.

Degrees

- AAS Electronics Engineering Technology (p. 95)
- AAS Electronics Engineering Technology - Biomedical Equipment Option (p. 96)

AAS Electronics Engineering Technology

(P3600)

General Education Foundation

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>ENG-111</td>
<td>English Composition I</td>
<td>6</td>
</tr>
<tr>
<td>ENG-112</td>
<td>English Composition II</td>
<td></td>
</tr>
<tr>
<td>Math-Science-Technology</td>
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<td>3</td>
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<tr>
<td>CMP-128</td>
<td>Computer Science I</td>
<td></td>
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<tr>
<td>Social Science or Humanities</td>
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<tr>
<td>This course must meet both the General Education and Diversity requirements.</td>
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<td>Math Elective</td>
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Electronics Core

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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ELT-100</td>
<td>Circuit Analysis DC/AC</td>
<td>3</td>
</tr>
<tr>
<td>ELT-115</td>
<td>Active Circuit Components</td>
<td>3</td>
</tr>
<tr>
<td>ELT-110</td>
<td>Digital Principles</td>
<td>3</td>
</tr>
<tr>
<td>ELT-209</td>
<td>Advanced Digital and Microprocessors</td>
<td>4</td>
</tr>
<tr>
<td>ELT-210</td>
<td>Electronic Fabrication</td>
<td>1</td>
</tr>
<tr>
<td>ELT-213</td>
<td>Active Circuit Design</td>
<td>4</td>
</tr>
<tr>
<td>ELT-215</td>
<td>Industrial Electronics</td>
<td>4</td>
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<tr>
<td>ELT-231</td>
<td>Electronic Communication Systems</td>
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</tr>
<tr>
<td>ENR-117</td>
<td>Computer-Aided Drafting I</td>
<td>2</td>
</tr>
<tr>
<td>PHY-111</td>
<td>Technical Physics I</td>
<td>4</td>
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</table>
1. Math Elective - any four credit math course except MAT-120.

## AAS Biomedical Equipment

### An Electronics Engineering Technology Option

(P3601)

#### General Education Foundation

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<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>ENG-111</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-112</td>
<td>English Composition II</td>
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#### Technology

<table>
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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CMP-128</td>
<td>Computer Science I</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Social Science or Humanities

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
</table>

This course must meet both the General Education and Diversity requirements.

#### General Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BIO-133</td>
<td>Human Biology</td>
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</table>

#### Math Elective

1. Math Elective - any four credit math course except MAT-120.

#### Electronics Engineering Technology Biomedical Equipment Option Core

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ELT-100</td>
<td>Circuit Analysis DC/AC</td>
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<tr>
<td>ELT-102</td>
<td>Circuit Measurement and Fundamentals</td>
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</tr>
<tr>
<td>ELT-115</td>
<td>Active Circuit Components</td>
<td>3</td>
</tr>
<tr>
<td>ELT-200</td>
<td>Biomedical Electronics</td>
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<tr>
<td>ELT-209</td>
<td>Advanced Digital and Microprocessors</td>
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<tr>
<td>ELT-210</td>
<td>Electronic Fabrication</td>
<td>1</td>
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<tr>
<td>ELT-213</td>
<td>Active Circuit Design</td>
<td>4</td>
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<td>ELT-215</td>
<td>Industrial Electronics</td>
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<td>ELT-110</td>
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<td>ELT-227</td>
<td>Biomedical Clinical Experience</td>
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<td>ELT-231</td>
<td>Electronic Communication Systems</td>
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<td>PHY-111</td>
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<tr>
<td>ENR-132</td>
<td>Introduction to Experimentation and Design</td>
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</table>

#### Total Credits: 60

## Certificates of Achievement

### 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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<td>ELT-110</td>
<td>Digital Principles</td>
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<tr>
<td>ELT-209</td>
<td>Advanced Digital and Microprocessors</td>
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<tr>
<td>CMP-128</td>
<td>Computer Science I</td>
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<tr>
<td>TEL-110</td>
<td>Routing I (CISCO)</td>
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</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>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>ENR-132</td>
<td>Introduction to Experimentation and Design</td>
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<tr>
<td>ELT-115</td>
<td>Active Circuit Components</td>
<td>3</td>
</tr>
<tr>
<td>ELT-100</td>
<td>Circuit Analysis DC/AC</td>
<td>3</td>
</tr>
<tr>
<td>ELT-102</td>
<td>Circuit Measurement and Fundamentals</td>
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</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>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>ELT-213</td>
<td>Active Circuit Design</td>
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<td>ELT-215</td>
<td>Industrial Electronics</td>
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<td>ELT-231</td>
<td>Electronic Communication Systems</td>
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<tr>
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</tr>
</tbody>
</table>

## Faculty

Venancio L. Fuentes, P.E.  
Chairperson, Engineering Technologies/Engineering Science  
Chairperson, Criminal Justice  
Professor, Engineering Technologies  
M.E., Stevens Institute of Technology  
B.E., Stony Brook University  
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vfuentes@ccm.edu

G. Nicholas Aska  
Assistant Professor, Engineering Technologies  
M.S., B.S., New Jersey Institute of Technology  
A.S., University of Technology Jamaica  
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gaska@ccm.edu

Jefferson Cartano  
Assistant Professor, Physics and Engineering  
M.S., Stanford University  
B.S., University of Pennsylvania  
SH 273A 973-328-5762  
cartano@ccm.edu

## Courses

**ELT-100. Circuit Analysis DC/AC. 3 Credits.**  
LECT 2 hrs, LAB 2 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/equivalent and ENR 119 and ENR-124 OR MAT-110/equivalent and ENR-132 OR MAT-123  
**Additional Fees:** Course fee applies.

**ELT-102. Circuit Measurement and Fundamentals. 1 Credit.**  
LAB 2 hrs  
An introductory course in electrical circuit analysis and measurement. This course will cover topics in DC and AC circuits, as well as the instruments needed to properly characterize the behavior of these types of circuits. This course is required by the majors in the Electronics Engineering Technology and the Biomedical Equipment Options, and will serve as a supplement to material covered in the Circuit Analysis course.  
**Corequisites:** ELT-100  
**Additional Fees:** Course fee applies.

**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 OR ELT-100 AND ELT-102  
**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: 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
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 OR ELT-100 AND ELT-102
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.
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 or ENR-121
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-130. Introduction to Engineering. 1 Credit.
LECT 1 hr
This course provides the entering engineering student with an overview of the engineering profession and the design process. In addition this course is designed to assist the first year engineering science student in their adjustment and success with the college experience. Topics discussed include the engineering course of study, academic advisement and transfer process, types of engineering disciplines, solving techniques, academic expectations, time management and study skills.

ENR-132. Introduction to Experimentation and Design. 3 Credits.
LECT 2 hrs, LAB 1 hr
A required course in the Engineering Technology programs that introduces students to the field of engineering. Students will be introduced to experimental techniques, data collection and representation, as well as the proper method for documenting experimental results. The course will also cover topics that will help students succeed in their field of study and in their college experience.
Corequisites: MAT-016 or placement into MAT 110, or beyond
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.

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/divdep/bmet/department-of-engineering-technologies-and-engineering-science/engineering-science/) website.

Degrees
AS Engineering Science
(P2180)

General Education Foundation
Communication
ENG-111 English Composition I
ENG-112 English Composition II
Math-Science-Technology
MAT-131 Analytic Geometry and Calculus I
MAT-244 Ordinary Differential Equations
CHM-125 General Chemistry I - Lecture
CHM-126 General Chemistry I - Laboratory
Social Science
ECO-211 Principles of Economics I Macroeconomics
Humanities
Choose from General Education course list
Humartes or Social Science
Choose from General Education courses list
General Education
4
Chemistry II Sequence
CHM-127 General Chemistry II - Lecture
CHM-128 General Chemistry II - Laboratory
or Physics III sequence instead
PHY-232 Engineering Physics III
PHY-233 Laboratory for Engineering Physics III
General Education Foundation Credits
31

Engineering Science Core
MAT-132 Analytic Geometry and Calculus II
MAT-230 Calculus III
ENR-121 Engineering Graphics
ENR-130 Introduction to Engineering
ENR-223 Engineering Mechanics I (Statics)
ENR-224 Engineering Mechanics II (Dynamics)
Restricted Engineering Science Elective See your adviser for course selection
PHY-130 Engineering Physics I
PHY-133 Engineering Physics II
PHY-134 Laboratory for Engineering Physics II
Engineering Science Core Credits: 29

Total Credits: 60

Restricted Engineering Science Elective: See your adviser for course selection

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ENR-125</td>
<td>Computer Programming for Engineers</td>
</tr>
<tr>
<td>ENR-222</td>
<td>Mechanics of Solids</td>
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<tr>
<td>ENR-235</td>
<td>Engineering Circuit Analysis I</td>
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<tr>
<td>ENR-236</td>
<td>Engineering Circuit Analysis Laboratory I</td>
</tr>
<tr>
<td>CHM-221</td>
<td>Organic Chemistry I</td>
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</tbody>
</table>

Restricted Engineering Science Elective Credits: 3

Faculty:

Venancio L. Fuentes, P.E.
Chair, Engineering Technologies/Engineering Science
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Thomas Roskop
Assistant Professor, Engineering Science and Mechanical Engineering Technology
M.E., B.E., Stevens Institute of Technology
SH 273A 973-328-5721 troskop@ccm.edu

Courses:

**ENR-103. Basic Engineering Graphics I. 1 Credit.**
LECT 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.

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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.

**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.

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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.

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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.

**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.

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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-130. Introduction to Engineering. 1 Credit.
LECT 1 hr
This course provides the entering engineering student with an overview of the engineering profession and the design process. In addition this course is designed to assist the first year engineering science student in their adjustment and success with the college experience. Topics discussed include the engineering course study, academic advisement and transfer process, types of engineering disciplines, solving techniques, academic expectations, time management and study skills.

ENR-132. Introduction to Experimentation and Design. 3 Credits.
LECT 2 hrs, LAB 1 hr
A required course in the Engineering Technology programs that introduces students to the field of engineering. Students will be introduced to experimental techniques, data collection and representation, as well as the proper method for documenting experimental results. The course will also cover topics that will help students succeed in their field of study and in their college experience.
Corequisites: MAT-016 or placement into MAT 110, or beyond
Additional Fees: Course fee applies.

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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.

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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)

The ESL program 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/languages/) webpage. The ESL program is not currently a certificate or degree program.

<table>
<thead>
<tr>
<th>Level</th>
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<tbody>
<tr>
<td>I</td>
<td>ESL-010</td>
<td>ESL Reading I</td>
<td>N4</td>
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<td>ESL-017</td>
<td>ESL Writing I</td>
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<td>ESL-021</td>
<td>Conversational English</td>
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(P0961)
Level II

ESL-019  ESL Reading II  N4
ESL-020  ESL Writing II  N8
ESL-022  Advanced Conversational English  N3

Level III

ESL-033  Writing III  N6
ESL-040  ESL Writing Review ¹  N1

¹ 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

Faculty

James Hart
Chairperson, Languages and ESL
Assistant Professor, Spanish, Intercultural Communication, and ESL
M.A., Montclair State University
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Program Specialist, College Student Success
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Courses

ESL-00A. Reg Code for ESL-010 and ESL-021. 0 Credits.
LECT hrs
Allows students to register for level 1 ESL Reading 010 and Conversational English 021.

ESL-00B. Reg Code for ESL-017. 0 Credits.
LECT hrs
Allows student to register for Level I ESL Writing.

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 score.

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 score.

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 score.

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. 214).

For more information, visit the Exercise Science (http://www.ccm.edu/academics/divdep/health-professions-natural-sciences/department-of-health-and-exercise-science/exercise-science/) website.

Degrees

AS Exercise Science  
(P2960)

General Education Foundation
Communication 6
ENG-111 English Composition I 3
ENG-112 English Composition II 3
Math-Science-Technology
MAT-110 College Algebra 3
or MAT-124 Statistics 3
CMP-135 Computer Concepts With Applications 3
CHM-117 Introductory Chemistry Lecture 3
or CHM-125 General Chemistry I - Lecture 3
CHM-118 Introductory Chemistry Laboratory 1
or CHM-126 General Chemistry I - Laboratory 1
Social Science 3
PSY-113 General Psychology 3
Humanities 3
Choose from General Education Course List (Humanities) 3

Exercise Science Core

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<tr>
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<td>BIO-102</td>
<td>Anatomy and Physiology II</td>
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<td>HES-211</td>
<td>Kinesiology</td>
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<td>HED-295</td>
<td>First Aid and Emergency Care</td>
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<td>HES-212</td>
<td>Exercise Physiology</td>
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<td>HED-115</td>
<td>Personal and Family Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>HED-286</td>
<td>Personal Health and Wellness</td>
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<tr>
<td>HES-213</td>
<td>Exercise Measurement and Prescription</td>
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</table>

Total Credits 60

Faculty

Dr. Michael Paul  
Chairperson, Health and Exercise Science  
Associate Professor, Health and Exercise Science  
Ph.D., University of Toledo  
M.S., East Stroudsburg University  
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Kelly Miniter  
Assistant Professor, Health and Exercise Science  
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B.S., University of Maryland  
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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.

HED-ELE. Health and Wellness Elective for Cutk. 3 Credits.
LECT 3 hrs
Pseudo course to hold a place in student planner.
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-227. Exercise Science Internship (45-100 Hour S). 1 Credit.
COOP 1 hr
This course provides students enrolled in the Exercise Science major with pre-professional, job-oriented training, practical work experience and/or career related exploration in a paid or unpaid work environment prior to permanent employment and/or degree transfer. The student will participate in planned, supervised work that integrates career related experience into their education. The duration of the experience ranges between 45 and 100 hours. The course may be taken in fulfillment of requirement or as elective in the Exercise Science curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of the semester prior to the semester in which they intend to do the internship.
Prerequisites: Permission of department chair.

HES-291. Special Topics in Exercise Science. 1 Credit.
LECT 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.
LECT 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.

HES-ELE. Exercise Science Restricted Elective. 1-3 Credits.
LECT 10 hrs
Pseudo course holder for student planner.
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 Inter-Active 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 (http://www.ccm.edu/academics/divdep/bmet/department-of-engineering-technologies-and-engineering-science/fire-science/) website.

1 Courses with FST designation.

Degrees

AAS Fire Science Technology

(P3460)

General Education Foundation

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Faculty

Venancio L. Fuentes, P.E.
Chairperson, Engineering Technologies/Engineering Science

Professor, Engineering Technologies

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B.E., Stony Brook University
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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
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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.

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/divdep/department-of-art-and-design/graphic-design/) website.

Degrees

AAS Graphic Design
(P3560)

General Education Foundation

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<tr>
<td>ENG-111 English Composition I</td>
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Graphic Design Core

<table>
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<tr>
<th>GRD-110 History of Graphic Design (Required)</th>
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<tr>
<td>ART-130 Two Dimensional Design</td>
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<tr>
<td>GRD-120 Graphic Design I</td>
<td>3</td>
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<td>GRD-220 Graphic Design II</td>
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<td>GRD-117 Digital Prepress</td>
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<td>GRD-118 Typography I</td>
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<td>GRD-227 Portfolio Project</td>
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<td>GRD-250 Brochure and Magazine Design</td>
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<td>GRD-262 Branding for the Web and Other Media</td>
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<td>GRD-108 Computer Graphics for Designers I</td>
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<td>GRD-109 Computer Graphics for Designers II</td>
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<td>Graphic Design Core Credits</td>
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Total Credits

60

Courses

LECT 2 hrs, LAB 3 hrs
A studio course providing an introduction to drawing, type and image by exploring the formal qualities and elements of design using the most current vector-base illustration software for graphic designers. Emphasis on communication ideas, concepts, good form, linear structure and compositional layout.
Prerequisites: ART-130.

GRD-109. Computer Graphics for Designers II. 3 Credits.
LECT 2 hrs, LAB 3 hrs
A continuation of GRD 108 to develop visualizing techniques and skills by introducing additional software programs. In addition to the latest vector-based illustration/draw program, GRD 109 will include learning the most current page-layout, and photo/paint software in addition to an illustration/draw program to support the creation of two-dimensional projects as it applies to printed material.
Prerequisites: ART-130 and GRD-108.

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.

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 software programs including paint, draw and page layout applications support the creation of two-dimensional design projects as it applies to printed material.
Prerequisites: ART-130, ART-122 or MED-114
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 mechanics. 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.

Faculty

Nieves Gruneiro-Roadcap
Chairperson, Art and Design
Associate Professor, Art and Design
M.F.A., Mason Gross School of the Arts, Rutgers University
B.F.A., New Jersey City University
EH 101 973-328-5435 ngruneiro@ccm.edu

Stephen H. Longo
Special Projects, Graphic Design
Professor, Art and Design
M.S., Pratt Institute
B.F.A., New York Institute of Technology
EH 111 973-328-5438 slongo@ccm.edu
GRD-117. Digital 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 finished traditional and electronic mechanicals. Field trips to a printing facility and/or service bureau may be included.
Prerequisites: ART-122 ART-130 GRD-118 GRD-120 and GRD-109 or GRD-110.

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 a design element. Students engage in the skills of hand lettering and compositional layout while addressing letter proportion, anatomy, structure and typographic space. Communication design problems emphasize typography as the primary focus.
Prerequisites: ART-130 or COM-114
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-130 or COM-114
Additional Fees: Course fee applies.

GRD-200. Freelancing for Designers. 1 Credit.
LECT 1 hr
This course introduces the student to the entrepreneurial side of creativity and provides them with the information and tools needed to begin a freelance career and what is expected of them in the professional arena.

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-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 108, GRD 118, GRD 120 AND GRD 109 or GRD 111
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-118, GRD-120 and GRD-109 or GRD-111
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. This course should be scheduled during the student's final semester.
Prerequisites: Permission of department chair.

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-108, GRD-109, GRD-117, 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 108, GRD 118, GRD 120 AND GRD 109 or GRD 111
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.
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: Permission of department chair
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 108, GRD 118, GRD 120 AND GRD 109 or GRD 111
Additional Fees: Course fee applies.
GRD-255. Advertising Design. 3 Credits.
LECT 1 hr, LAB 4 hrs
This course is designed to further develop concept and design skills with the goal of creating an advertising campaign. Implementing an ad agency format, students will work in creative teams to research and develop the advertising campaign from initial concept to final production. 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 2 hrs, LAB 2 hrs
The course approaches graphic design from a page layout perspective. Students apply the principles learned in Graphic Design courses to arrive at a well-designed brand identity and presence that works within the overall semiotic branding experience for the Web and other media.
Prerequisites: ART 130, ART 122, GRD 118, GRD 120 AND GRD 111 or GRD 109.
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 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, Professor Laura Gabrielsen, lgabrielsen@ccm.edu or 973-328-5459.

Courses

Biology
BIO-180 General Biology I - Honors 4
BIO-181 General Biology II - Honors 4

English
ENG-123 Introduction to Linguistics - Honors 3
ENG-131 English Composition I Honors 3
ENG-132 English Composition II Honors 3
ENG-283 World Literary Traditions: Beginnings - 1650 - Honors 3
ENG-284 World Literary Traditions: 1650 to Present: Honors 3

History
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

Philosophy
PHL-180 Introduction to Philosophy-Honor 3

Psychology
PSY-180 General Psychology - Honors 3
PSY-292 Honors Abnormal Psychology 3

Sociology
SOC-180 Principles of Sociology - Honors 3

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 (http://catalog.ccm.edu/credit/areasofstudy/culinaryarts/) 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
ENG-111 English Composition I
ENG-112 English Composition II
Math-Science-Technology 6
Math Elective
Laboratory Science/Technology Elective
Social Science or Humanities 3
Choose from General Education course list
General Education Electives 6
ECO-113 Elements of Economics
or ECO-211 Principles of Economics I Macroeconomics

General Education Elective

General Education Foundation Credits 21

Hospitality/Business Core

HOS-100 Serv-Safe Food Handling 1
HOS-101 Introduction to Food 3
HOS-102 Food Management 3
HOS-103 Food Production 3
HOS-106 Success in Hospitality 1
HOS-118 Introduction to the Hospitality Industry 3
HOS-120 Hotel/Hospitality Management 3
HOS-211 Human Resource Management in the Hospitality Industry 3
HOS-213 Food and Beverage Purchasing and Cost Controls 3
HOS-240 Hotel Operations 3
Co-op/Internship Work Experience 1
ACC-108 Accounting for Hospitality 3
BUS-112 Introduction to Business 3
BUS-213 Business Law I 3
Hospitality/Business Core Credits 36

One restricted Hospitality elective 3

One restricted Hospitality elective Credits 0

Total Credits 60
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.

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<td>or ECO-21 Principles of Economics I Macroeconomics</td>
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Hospitality/Business Core

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<td>HOS-102 Food Management</td>
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<td>HOS-103 Food Production</td>
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<td>HOS-106 Success in Hospitality</td>
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<td>HOS-118 Introduction to the Hospitality Industry</td>
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<tr>
<td>HOS-210 Dining Room Management</td>
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<td>or HOS-223 Cooperative Work Experience Hospitality (135-300 Hours)</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-235 Restaurant Operations</td>
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<td>ACC-108 Accounting for Hospitality</td>
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<td>HOS Electives</td>
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Hospitality/Business Core Credits 39

Total Credits 60

Certificates of Achievement

Hospitality 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.

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<td>HOS-213 Food and Beverage Purchasing and Cost Controls</td>
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<tr>
<td>For Event Planning</td>
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<tr>
<td>HOS-201 Marketing and Event Planning</td>
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<td>HOS-234 Meeting and Event Sales, Planning, and Management</td>
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<td>For Hospitality Management</td>
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<td>HOS-102 Food Management</td>
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<tr>
<td>HOS-120 Hotel/Hospitality Management</td>
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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

Najib Iftikhar  
Assistant Professor  
Business and Hospitality Management and Culinary Arts  
Professional Studies and Applied Sciences  
MBA, Colorado Technical University  
BS, University of Phoenix  
CH 204 E  973-328-5667  niftikhar@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.

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) towards 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-107. 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-108. 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. The four primary areas of the Hospitality Industry (Food services, accommodations, recreation, and entertainment sectors) are all introduced. Also studied are basic concepts of event planning, ownership, human resources, marketing, cost controls, facilities management, and customer service.

HOS-109. 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. Chocolates. 1 Credit.
LECT 2 hrs
The art of working with chocolate is the emphasis of this class. This course will cover the theoretical, practical and artistic aspect of chocolate and confections. The students will apply tempering techniques to create a variety of truffles, hand dipped and molded chocolates. The course will also build on sugar cooking skills for the students to create brittle and toffee.

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 Alcohol 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.

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.

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 and 300 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.

HOS-227. Internship Work Experience Hospitality (45-100 Hrs). 2 Credits.
COOP 2 hrs
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in a work environment prior to permanent employment and amounting to between 45 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-228. Internship Work Experience Hospitality (90-200 Hours). 2 Credits.
COOP 2 hrs
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in a 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.
COOP 3 hrs
This course provides students enrolled in the Hospitality Management and Culinary Arts Programs with job-oriented training and practical work experience in a 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 3 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, HOS 121
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 2 hrs
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 and 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 and faculty member.

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.

HOS-250. Food Truck Entrepreneur. 3 Credits.
LECT 2 hrs, LAB 1 hr
Food trucks have become a popular and important part of the hospitality industry. This course introduces the fundamentals of owning and operating a food trailer or truck. The relatively low cost of entry combined with free and low-cost ways to market via social media are just two of the reasons that budding entrepreneurs are joining this exciting field. The basics of food vending, business plans, menu planning, production design, location selection, federal/state/local regulations, licenses and permits will all be covered in the coursework. Students will develop the necessary skills to succeed in this exciting and growing industry while experiencing practical experience in customer service and food trailer operations.
Prerequisites: HOS-100.

Human Services - Liberal Arts and Sciences

Associate in Arts Degree

This program is designed for students who plan to graduate and transfer to a four-year college or university to study for the baccalaureate degree in Human Services or Social Work.

Degrees

A.A. Human Services

An Option within Liberal Arts and Sciences

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

Communication

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<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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<tr>
<td>COM-109</td>
<td>Speech Fundamentals</td>
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Math-Science-Technology

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<tr>
<td>MAT-124</td>
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<tr>
<td>or MAT-130</td>
<td>Probability and Statistics</td>
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Mathematics Elective

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Technology

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<td>SOC-120</td>
<td>Principles of Sociology</td>
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<td>PSY-113</td>
<td>General Psychology</td>
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Social Science

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<td>HIS-203</td>
<td>History of Minorities in U.S.</td>
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History

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<td>HIS-204</td>
<td>History of the African-American Experience</td>
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<tr>
<td>HIS-209</td>
<td>History of American Women</td>
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Diversity

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<tr>
<td>SOC-202</td>
<td>Contemporary Social Issues - America As a Diverse Society</td>
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Human Services Core

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<tr>
<th>Course</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>HMS-215</td>
<td>Introduction to Social Welfare and Human Services</td>
<td>3</td>
</tr>
<tr>
<td>HMS-216</td>
<td>Human Needs and Social Services</td>
<td>3</td>
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<tr>
<td>PSY-229</td>
<td>Community Mental Health</td>
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<tr>
<td>SOC-209</td>
<td>The Family</td>
<td>3</td>
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<tr>
<td>ECO-211</td>
<td>Principles of Economics I Macroeconomics</td>
<td>3</td>
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</table>

Total Credits 60
**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

Dr. Melissa Kasmin  
Assistant Professor, Psychology and Education  
Program Coordinator, Human Services  
Ph.D., Rutgers University  
MSW, University of Michigan  
B.A., Kenyon College  
DH 323  973-328-5612  mkasmin@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.

**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 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.

**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**

**Communication**  
ENG-111 English Composition I  
ENG-112 English Composition II  
Math/Science/Technology  
CMP-128 Computer Science I  
Social Science  
Choose from General Education list (Social Science)  
General Education Electives  
Laboratory Science  
MAT-130 Probability and Statistics  
GENERAL EDUCATION FOUNDATION Credits  

**INFORMATION TECHNOLOGIES CORE**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>CMP-130</td>
<td>Introduction to Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>CMP-131</td>
<td>Fundamentals of Programming (Python)</td>
<td>3</td>
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<tr>
<td>TEL-107</td>
<td>Computers and Data Networks</td>
<td>3</td>
</tr>
<tr>
<td>TEL-110</td>
<td>Routing I</td>
<td>3</td>
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<tr>
<td>CMP-124</td>
<td>Network Security</td>
<td>3</td>
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<tr>
<td>CMP-200</td>
<td>Computer Operating Systems and Utilities</td>
<td>3</td>
</tr>
<tr>
<td>CMP-239</td>
<td>The Internet and Web Page Design</td>
<td>3</td>
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<tr>
<td>CMP-241</td>
<td>Database Programming (SQL)</td>
<td>3</td>
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<tr>
<td>CMP-255</td>
<td>Linux</td>
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<td>CMP-280</td>
<td>Software Engineering</td>
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**Total Credits**  

60

**Web Development Track**

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<tr>
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<tbody>
<tr>
<td>CMP-244</td>
<td>Web Design II</td>
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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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**Mobile Applications Development**

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<tr>
<td>CMP-129</td>
<td>Computer Science II</td>
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<tr>
<td>CMP-170</td>
<td>Mobile App Design</td>
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Certificates of Achievement


Information Security

A Certificate of Achievement within Computer Information Systems
(P0354)

<table>
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<th>Title</th>
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<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</td>
<td>3</td>
</tr>
<tr>
<td>Restricted Electives</td>
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<td>6</td>
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</table>

Select two of the following:

- CJS-116 Introduction to Criminology
- CJS-121 Criminal Justice System
- CMP-128 Computer Science I
- CMP-160 Digital Forensics I
- CMP-243 Ethical Hacking and Systems Defense
- CMP-261 Digital Forensics II
- CMP-280 Software Engineering
- CMP-292 Special Topics in Information Technology
- CMP-293 Special Topics in Information Technology II
- PHL-114 Ethics
- TEL-110 Routing I
- TEL-120 Routing II (CISCO)

Total Credits: 15

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

A Certificate of Achievement within Computer Information Systems (P0352)

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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<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>
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<td>CMP-263</td>
<td>Web Development Workflow</td>
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<tr>
<td>Restricted Electives</td>
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Select two courses from the following list:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CMP-120</td>
<td>Foundations of Information Security</td>
</tr>
<tr>
<td>CMP-128</td>
<td>Computer Science I</td>
</tr>
<tr>
<td>CMP-170</td>
<td>Mobile App Design</td>
</tr>
<tr>
<td>CMP-205</td>
<td>Database Programming (MS Access)</td>
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<tr>
<td>CMP-249</td>
<td>Advanced Web Programming</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-119</td>
<td>Digital Media Production</td>
</tr>
<tr>
<td>MED-220</td>
<td>Animation</td>
</tr>
<tr>
<td>MED-240</td>
<td>Advanced Animation</td>
</tr>
</tbody>
</table>

Total Credits 16

Students should consult their academic advisors when selecting these courses.

Courses

CMP-000. Technology Literacy Test. 0 Credits.
LECT hrs
Technology Literacy Test.

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 Information Technologies Department majors.

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-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.

Not for Information Technologies Department majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-126, CMP-135, or BUS-119.

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-131. Fundamentals of Programming (python). 3 Credits.**
LECT 2 hrs, LAB 2 hrs
This is a fundamental course in problem solving and programming. This course introduces concepts such as how to solve problems by designing and implementing algorithms using a popular programming language. Topics include: pseudocode, algorithms, variables, constants, using decisions and loop structures to construct effective code, using built-in functions, creating functions and modules, and simple debugging techniques for detecting errors. Use of real-world problems in Web Development, Cybersecurity and Data Science are explored. No prior programming experience is required.
**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-149. Critical Game Play. 3 Credits.**
LECT 2 hrs, LAB 1 hr
This is an introductory course designed to increase games literacy and foster a shared understanding of the history of games, culturally and aesthetically. A thorough knowledge of the games that have shaped this industry is integral for all students considering entering the field. The class covers a wide spectrum of digital and analogue games. Students will take part in discussions and lectures. They will compose a short analyses of different games and justify their stances in group-wide presentations. The primary activity of the class is critical play - playing games and analyzing them in order to better understand the medium on a personal and professional level.
**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-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-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-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 (SQL). 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-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.
Prerequisites: on basic/intermediate skills essential to an IT professional.

Operating system, with combined lecture and lab exercises focusing on redirection, piping, and regular expressions. Upon successful completion, students are proficient in using the Linux operating system and its utilities. Focus is placed on the file system, user system, file security, process and job management, X-Windows, shells and shell scripting. A POSIX-compliant shell, such as ash, dash, bash or ksh, is introduced. Concepts include redirection, piping, and regular expressions. Upon successful completion of this course, students are proficient in using the Linux operating system, with combined lecture and lab exercises focusing on basic/intermediate skills essential to an IT professional.

Additional Fees: Course fee applies.

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.

Additional Fees: Course fee applies.

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.

Additional Fees: Course fee applies.

This is a hands-on course in the administration of a Linux Operating System. Students utilize the command line interface to control the operating system and its utilities. Focus is placed on the file system, user system, file security, process and job management, X-Windows, shells and shell scripting. A POSIX-compliant shell, such as ash, dash, bash or ksh, is introduced. Concepts include redirection, piping, and regular expressions. Upon successful completion of this course, students are proficient in using the Linux operating system, with combined lecture and lab exercises focusing on basic/intermediate skills essential to an IT professional.

Additional Fees: Course fee applies.

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.

Additional Fees: Course fee applies.

This course provides students with cutting edge Web development skills to create and maintain Web sites that are modern, responsive, and dynamically delivered across a wide range of devices. Students learn leading Web design and development tools including current industry standard Web interactive tools, Git, JQuery Framework, and content management systems. Instruction and practice on available platforms provide seamless integration and unified interface across all tools to streamline Web development from local development to staging to production. Students will develop competence in the use of industry-leading development tools in building a current, engaging, and dynamic Web site.

Additional Fees: Course fee applies.

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.

Additional Fees: Course fee applies.

Software engineering practices are examined in the context of the system development life cycle, comparing traditional structured approach and the object-oriented approach, with the main focus on object-oriented approach. Topics include user stories, use cases, object-oriented modeling, comprehensive project management, the Unified Modeling Language (UML) diagrams, Agile techniques, and user-interface design. Class projects provide students with practice in developing soft skills necessary to work as part of a team. Students participate in a semester-long team project to design an application using system analysis and design techniques.

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.

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. 3 Credits.
LECT 2 hrs, LAB 3 hrs
The course introduces basic routing principles in a network environment, supplemented with industry-standard labs, such as those provided by CISCO. 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 telecommunications 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

Associate in Arts Degree

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. This program also accommodates individuals seeking two years of a liberal higher education.

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

(P1160)

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

Literature Survey Electives

Choose from General Education course list

History | 6

Choose from General Education course list

Diversity | 3

SOC108 or SOC202

General Education Foundation Credits | 45

International Studies Core

| ISA-110 | Intercultural Communication | 3 |
| Modern Language | 12 |

International Studies Core Credits | 15

Total Credits | 60

Faculty

James Hart
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Assistant Professor, Spanish, Intercultural Communication, and ESL
M.A., Montclair State University
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Nadir Kaddour
Professor, Languages and ESL
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B.A., University of Algiers
EH 118 973-328-5406 nkaddour@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

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 that contribute to the practice of journalism and related professions. The Journalism program also allows some degree of specialization.

For more information, visit the Department of Communication (http://www.ccm.edu/academics/divdep/liberal-arts/department-of-communication/) webpage.

Degrees

AA Journalism

(P1133)

General Education Foundation

| Communication | 9 |
| ENG-111 | English Composition I |
| ENG-112 | English Composition II |
### Journalism

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM-109</td>
<td>Speech Fundamentals</td>
<td>12</td>
</tr>
<tr>
<td>MAT-130</td>
<td>Probability and Statistics</td>
<td></td>
</tr>
<tr>
<td>or MAT-120</td>
<td>Mathematics for Liberal Arts</td>
<td></td>
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<tr>
<td>Laboratory Science Elective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMP-126</td>
<td>Computer Technology and Applications</td>
<td></td>
</tr>
<tr>
<td>Social Science</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>SOC-120</td>
<td>Principles of Sociology</td>
<td></td>
</tr>
<tr>
<td>Political Science Elective</td>
<td></td>
<td></td>
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<tr>
<td>Humanities</td>
<td></td>
<td>9</td>
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<tr>
<td>Language/Literature Sequence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humanities Elective</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>History ^1</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Diversity</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ISA-110</td>
<td>Intercultural Communication</td>
<td></td>
</tr>
<tr>
<td>General Education Foundation Credits</td>
<td></td>
<td>45</td>
</tr>
<tr>
<td><strong>Journalism Core</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COM-111</td>
<td>Introduction to Journalism</td>
<td>3</td>
</tr>
<tr>
<td>COM-112</td>
<td>Advanced Journalism</td>
<td>3</td>
</tr>
<tr>
<td>COM-115</td>
<td>Introduction to Mass Media</td>
<td>3</td>
</tr>
<tr>
<td>COM-209</td>
<td>Editing and Publication Design</td>
<td>3</td>
</tr>
<tr>
<td>Restricted Electives (select two classes)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>COM-101</td>
<td>Introduction to Communication</td>
<td></td>
</tr>
<tr>
<td>COM-102</td>
<td>Advertising and Society</td>
<td></td>
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<tr>
<td>COM-103</td>
<td>Introduction to Public Relations</td>
<td></td>
</tr>
<tr>
<td>COM-104</td>
<td>Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td>COM-105</td>
<td>Media Literacy</td>
<td></td>
</tr>
<tr>
<td>COM-114</td>
<td>Media Aesthetics</td>
<td></td>
</tr>
<tr>
<td>COM-120</td>
<td>Broadcast Journalism</td>
<td></td>
</tr>
<tr>
<td>COM-211</td>
<td>Television Production I</td>
<td></td>
</tr>
<tr>
<td>COM-212</td>
<td>Television Production II</td>
<td></td>
</tr>
<tr>
<td>COM-230</td>
<td>Communications Internship</td>
<td></td>
</tr>
<tr>
<td>COM-234</td>
<td>Introduction to Film</td>
<td></td>
</tr>
<tr>
<td>COM-291</td>
<td>Special Topics in Communication</td>
<td></td>
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<td>COM-292</td>
<td>Special Topics in Communication</td>
<td></td>
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<tr>
<td>PHO-213</td>
<td>Documentary Photography</td>
<td></td>
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<tr>
<td><strong>Journalism Core Credits</strong></td>
<td></td>
<td>15</td>
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<tr>
<td><strong>Total Credits</strong></td>
<td></td>
<td>60</td>
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</tbody>
</table>

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

### Faculty

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### 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.

**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-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.

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-025 or ENG-022 or ENG-007.

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
Corequisites: COM-111
Additional Fees: Course fee applies.

COM-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.
COM-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: COM-114 and COM-211
Corequisites: MED-210
Additional Fees: Course fee applies.

COM-213. Screenwriting. 3 Credits.
LECT 3 hrs
Screenwriting is a course in creating and adapting stories for film. Theories of narrative and cinematic structure provide a foundation for students to create and explore characters, conflicts, relationships, and imaginary worlds of their own design. A particular focus on story structure and dialog guides all lessons and assignments and distinguishes this course as one that is applicable to both the study and performance of a wide variety of narrative and dramatic art forms.
Prerequisites: ENG-111 and COM-234.

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
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: Permission of Coordinator
Corequisites: COM-228.

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

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.

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/liberal-arts/ department-of-psychology-and-education/).

Additional information about the foreign language classes and program requirements:

- 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 may receive academic credit for the AP exam in Chinese, French, German, Italian or Spanish.
- 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 [webpage](http://www.ccm.edu/academics/divdep/liberal-arts/department-of-languages-and-esl/languages/).

**Faculty**

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B.A., City College of New York  
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**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 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 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.

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 Chinese 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.
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-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.

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.

ITL-291. Special Topics in Italian. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Italian. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An advanced course in Italian or permission of department chair.

ITL-292. Special Topics in Italian. 3 Credits.
LECT 3 hrs
An examination of selected topics or issues in Italian. Topics may differ each time the course is offered. Students should consult the department chair for further information.
Prerequisites: An advanced course in Italian 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.

LAT-211. Intermediate Latin I. 3 Credits.
LECT 3 hrs
Intended for students who have completed Elementary Latin 111 and 112. This course continues the study of Latin grammar and vocabulary with selected readings that stress syntax, the relationship of Latin grammar to English grammar, and the understanding of more complex aspects of the Latin language. Students continue to refine their skills in the language and are expected to be able to complete more complex readings which are based on original Latin texts.
Prerequisites: LAT-112 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-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.
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, 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 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.
Liberal Arts and Sciences - Humanities/Social Science

Associate in Arts Degree

This degree program is designed to meet the requirements of the first two years of a Bachelor's degree. Students who graduate with this degree typically transfer to a four-year college or university, majoring in one of several fields in the humanities (such as English, history, philosophy, or a foreign language) or the social sciences (such as psychology, sociology, political science, or economics). The program offers a wide range of flexibility in terms of a student's ultimate educational goals and provides excellent preparation for further study.

This program also accommodates individuals seeking two years of education in the liberal arts.

Degrees

AA Liberal Arts and Sciences--Humanities/Social Science

(P1130)
The Liberal Arts and Sciences--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>
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<td>ENG-112</td>
<td>English Composition II</td>
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<tr>
<td>COM-109</td>
<td>Speech Fundamentals</td>
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<td>CHM-101</td>
<td>General Chemistry</td>
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Total Credits: 45

Liberal Arts Core

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<td>General Psychology</td>
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Total Credits: 15

Total Credits: 60

Faculty

Dean, School of Liberal Arts

Dr. Margaret Ball

Doctorate of Musical Arts, The Catholic University of America

Master of Music, McGill University

Bachelor of Music, University of Toronto

CH253 973-328-5400 LiberalArts@ccm.edu

Courses

ART-102. Introduction to Computer for Fine Art. 1 Credit.
LECT 1 hr
This 7-week, 1-credit introductory course will teach Fine Art Students the essential elements of the Photoshop interface. Students will learn basic retouching as well as photo editing, including how to correct, enhance, and distort digital images of their art work, and prepare those images for use in print and on the web.

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 and ART-130 or DSN-108
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 and ART-130 or DSN-108
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-135. Art Appreciation. 3 Credits.
LECT 3 hrs
Art Appreciation will introduce students to the creative processes and techniques used in the diverse media of the visual arts. Through the study and analysis of artworks, students are introduced to visual literacy principles to examine and understand historical, global, economic, cultural and conceptual contexts. Students will correlate the arts with a general history of culture, develop a multicultural perspective of the arts, and learn to understand its application to our contemporary visual culture and its uses. Students will discover the human impulse to create art, and how artistic expression addresses universal humanistic themes.
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-228. Sculpture I. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Sculpture I, students explore space and form, and threedimensional 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 1 hr
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-131, and ART-130 or DSN-108.
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-250. Beginning Glassblowing I. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course provides a basic introduction to hot glassblowing. Through a series of lectures, demonstrations and exercises students will be introduced to a variety of techniques used to produce functional and artistic glass objects. Students will be introduced to the history of glassmaking and its development to contemporary equipment and practice.
Additional Fees: Course fee applies.

ART-251. Intermediate Glassblowing. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course provides advanced topics in hot glassblowing. It condenses years of knowledge into a series of explanations, demonstrations and exercises. Students will continue their knowledge of various methods and techniques giving them the experience to create both functional and artistic glass objects. Students will be briefed in advanced techniques of glass making as it relates to contemporary equipment and practice.
Prerequisites: ART-250
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 MAT-120.

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.

ENG-007. Writing Skills Review. 0 Credits.
8 2hr Sessions
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-121. Introduction to Linguistics. 3 Credits.
LECT 3 hrs
An overview of the study of language. The course examines the fundamental concepts of language, structure, development, and variation. Major topics include morphology, syntax, phonology, phonetics, semantics, language change, typology, language contact, language acquisition, and language and computers.
**Prerequisites:** ENG-111 or ENG-131.

ENG-122. Introduction to the Drama. 3 Credits.
LECT 3 hrs
An introduction to world dramatic literature through study of the development of drama and its various genres. The course will focus on the cultural, literary and political contexts of individual works by diverse playwrights from Ancient Greece to the present day.
**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, N.K. Jemisin, 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. Romans, 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 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.

HIS-ELE. History Elective Track 2016. 3 Credits.
LECT 3 hrs
pseudo course holder for student planner.

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-213. Philosophy of Religion. 3 Credits.
LECT 3 hrs
This is a course in the philosophy of Western monotheistic religion. Its main focus is on the doctrine (often said to be common to Islam, Christianity, and Judaism) that there is exactly one supreme being, God, who is all-knowing, all-powerful, morally perfect, and created the world (among other things). The course evaluates arguments for and against the existence of God, and examines questions pertinent to the existence of such a God. Central to the course are these two questions: 1) Regardless of what people have believed or why they have believed it, can we establish, by reason, that God exists (or doesn't exist); and 2) what is the nature of a perfect being.
Prerequisites: ENG-025 or ENG-022 or ENG-007.

PHL-216. Contemporary Moral Issues. 3 Credits.
LECT 3 hrs
Contemporary Moral Issues ranges over current topics of interest in philosophy, including but not limited to: philosophies of race, gender, violence, and warfare. In addition, it revisits familiar issues, such as the relationship between philosophy and science, philosophy and religion, the evolution of right and wrong, philosophy and literature, and morality without religion. Further topics include moral relativism, the difficulty of philosophy, philosophy's purpose, the philosophy of love, and many more. The course introduces new topics in philosophy and revisits old ones.
Prerequisites: Placement basis or ENG-025, ENG-022, 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.

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.

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-219. Developmental Psychology - the Human Lifespan. 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-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-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.

SOC-ELE. Social Science Elective for Cutk. 3 Credits.
LECT 3 hrs
Pseudo course to hold a place on student planner.

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, www.abet.org. You can find out more at the ABET [http://www.abet.org](http://www.abet.org) (www.abet.org) website.

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 [https://www.ccm.edu/academics/divdep/bmet/department-of-engineering-technologies-and-engineering-science/mechanical-engineering-technology](https://www.ccm.edu/academics/divdep/bmet/department-of-engineering-technologies-and-engineering-science/mechanical-engineering-technology) website.

Degrees

AAS Mechanical Engineering Technology

(P3700)

General Education Foundation

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<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>ENG-111</td>
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<tr>
<td>ENG-112</td>
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<tr>
<td>Math-Science-Technology</td>
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<td>CMP-128</td>
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<tr>
<td>Social Science or Humanities</td>
<td>3</td>
</tr>
</tbody>
</table>

General Education 8

Math Elective 1

General Education Foundation Credits 20

Mechanical Engineering Core

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENR-132</td>
<td>3</td>
</tr>
<tr>
<td>ENR-117</td>
<td>2</td>
</tr>
</tbody>
</table>
ENR-118 Computer-Aided Drafting II 2
ENR-240 Engineering Technology Project 3
MEC-104 Statics 3
MEC-109 Manufacturing Process for Engineering Technology 4
MEC-110 Materials for Engineering Technology 4
MEC-141 Strength of Materials for Engineering Technology 3
MEC-204 Dynamics for Technology 2
MEC-209 Introduction to Advanced Manufacturing And CNC Programming 3
ELT-100 Circuit Analysis DC/AC 3
PHY-111 Technical Physics I 4
PHY-112 Technical Physics II 4
Mechanical Engineering Core Credits 40
Total Credits 60

1 Course selected can be any 4-credit math course except for MAT-120

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 3
Mathematics and Science
Select one math and one physics from the following: 1
or
MAT-110 College Algebra (3 CR) or MAT-120 Statistics
or MAT-130 Probability and Statistics
PHY-103 Concepts of Physics (4 CR) 1
or PHY-111 Technical Physics I
Specialized Courses
CMP-135 Computer Concepts With Applications 3
or CMP-126 Computer Technology and Applications
ENR-117 Computer-Aided Drafting I 2
ENR-118 Computer-Aided Drafting II 2
MEC-109 Manufacturing Process for Engineering Technology 4
ENR-132 Introduction to Experimentation and Design 3
MEC-110 Materials for Engineering Technology 4
ELT-210 Electronic Fabrication 1
Technical Elective 2 1-4
Total Credits 30-34

1 Students should consult their academic advisors when selecting these courses.
2 Technical Elective are courses that start with any of the following Department Prefixes: ENR, ELT or MEC. ELT-123 is not acceptable as a technical elective for this certificate.

Certificates of Achievement
• Advanced Mechanical Analysis - A Certificate of Achievement within Mechanical Engineering Technology (p. 151)
• Assembly and Testing - A Certificate of Achievement within Mechanical Engineering Technology (p. 152)
• Engineering Technology - A Certificate of Achievement within Mechanical Engineering Technology (p. 152)
• Mechanical CAD - A Certificate of Achievement within Mechanical Engineering Technology (p. 152)

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.

MAT-110 College Algebra 3
MAT-123 Precalculus 4
MEC-104 Statics 3
MEC-141 Strength of Materials for Engineering Technology 3
MEC-204 Dynamics for Technology 2
Total Credits 15
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>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENR-117</td>
<td>Computer-Aided Drafting I</td>
<td>2</td>
</tr>
<tr>
<td>ELT-110</td>
<td>Digital Principles</td>
<td>3</td>
</tr>
<tr>
<td>ENR-132</td>
<td>Introduction to Experimentation and Design</td>
<td>3</td>
</tr>
<tr>
<td>ELT-210</td>
<td>Electronic Fabrication</td>
<td>1</td>
</tr>
<tr>
<td>MAT-016</td>
<td>Intermediate Algebra (or test into a higher level N3 Math class)</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 9

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>
<tr>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENR-117</td>
<td>Computer-Aided Drafting I</td>
<td>2</td>
</tr>
<tr>
<td>ENR-118</td>
<td>Computer-Aided Drafting II</td>
<td>2</td>
</tr>
<tr>
<td>MEC-109</td>
<td>Manufacturing Process for Engineering Technology</td>
<td>4</td>
</tr>
<tr>
<td>ELT-110</td>
<td>Digital Principles</td>
<td></td>
</tr>
<tr>
<td>ELT-115</td>
<td>Active Circuit Components</td>
<td></td>
</tr>
<tr>
<td>ELT-201</td>
<td>Electricity and Electronics</td>
<td></td>
</tr>
<tr>
<td>ELT-210</td>
<td>Electronic Fabrication</td>
<td></td>
</tr>
<tr>
<td>MEC-209</td>
<td>Introduction to Advanced Manufacturing And CNC Programming</td>
<td></td>
</tr>
</tbody>
</table>

Electives Credits 9

Total Credits 14

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.

Required Core Courses
<table>
<thead>
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<th>Course Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENR-117</td>
<td>Computer-Aided Drafting I</td>
<td>2</td>
</tr>
<tr>
<td>ENR-132</td>
<td>Introduction to Experimentation and Design</td>
<td>3</td>
</tr>
</tbody>
</table>

Required Core Courses Credits 5

Electives
<table>
<thead>
<tr>
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<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENR-118</td>
<td>Computer-Aided Drafting II</td>
<td></td>
</tr>
<tr>
<td>MEC-110</td>
<td>Materials for Engineering Technology</td>
<td></td>
</tr>
<tr>
<td>ELT-110</td>
<td>Digital Principles</td>
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<tr>
<td>MEC-109</td>
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<td></td>
</tr>
<tr>
<td>MEC-209</td>
<td>Introduction to Advanced Manufacturing And CNC Programming</td>
<td></td>
</tr>
</tbody>
</table>

Choose from the following Credits 3-4

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CMP-126</td>
<td>Computer Technology and Applications</td>
<td></td>
</tr>
<tr>
<td>or CMP-135</td>
<td>Computer Concepts With Applications</td>
<td></td>
</tr>
<tr>
<td>or ENR-132</td>
<td>Introduction to Experimentation and Design</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 11-12

Faculty

Ian Colquhoun
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B.S., New Jersey Institute of Technology
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Thomas Roskop
Assistant Professor, Engineering Science and Mechanical Engineering Technology
M.E., B.E., Stevens Institute of Technology
SH 273A 973-328-5721 troskop@ccm.edu

Joshua Denholtz
Instructor, Engineering Technologies
M.E., Cornell University
B.S., Rutgers University
SH 305 973-328-5767 jdenholtz@ccm.edu
Courses

ENR-103. Basic Engineering Graphics I. 1 Credit.
LECT 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 or ENR-121
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-130. Introduction to Engineering. 1 Credit.
LECT 1 hr
This course provides the entering engineering student with an overview of the engineering profession and the design process. In addition this course is designed to assist the first year engineering science student in their adjustment and success with the college experience. Topics discussed include the engineering course of study, academic advisement and transfer process, types of engineering disciplines, solving techniques, academic expectations, time management and study skills.
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: ENR-233.  
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 or MAT-110 and ENR-132 or MAT-123.

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.

Music

Associate in Arts Degree

The Music program prepares students to transfer to programs in primary and secondary school music education, music therapy, music theory and performance degrees. Students are provided with a thorough grounding in music theory and music history, and must complete several applied music (performance) classes. The program also provides a thorough grounding in general education, mirroring what is offered by four-year institutions.

For more information, visit the Music (https://www.ccm.edu/academics/divdep/liberal-arts/department-of-music-performing-arts-music-technologies/music/) website.

Degrees

AA Music

(P1190)

All students must pass a theory placement exam or register for MUS-011 Basic Musicianship I and MUS-176 Aural Comprehension I during their 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**
- 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**
- 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

**History**
- *Please refer to the #1190 Curriculum Check Sheet for specific History choices.

**Diversity**
- Choose one of the following:
  - MUS-143 World Music and Culture
  - MUS-163 Rock History and Culture

**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
  - MUS-118 Music Theory II
  - MUS-215 Music Theory III
  - MUS-216 Music Theory IV
  - MUS-135 Applied Music Primary I
  - MUS-136 Applied Music Primary II
  - MUS-137 Applied Music Primary III
  - MUS-138 Applied Music Primary IV

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)

**Ensemble**
- MUS-145 Chamber Choir I
- MUS-146 Chamber Choir II
- MUS-147 Chamber Choir III
- MUS-148 Chamber Choir IV
- MUS-149 Chamber Choir V

**Total Credits**
- 68

**Faculty**

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B.M., Montclair State University  
A.A., South Plains College  
A.A.S., South Plains College  
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Dr. Jose Bevia  
Professor, Music  
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B.M., Berklee College of Music  
B.M., Valencia Conservatory  
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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: Music Majors only. Permission of Department Chair.

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.
LECT 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.
LECT 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.
LECT 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.
LECT 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-144. 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-145. 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-146. 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-147. 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-148. Introduction to Technical Theatre. 3 Credits.
LECT 1 hr, LAB 2 hrs
In this course students will be introduced to all facets of western technical theatre practices. Through a series of lectures, practical exercises, and projects, along with field trips to professional scene shops and theaters, students will explore various production roles, fundamental terminology, and conventional processes including maintaining a theater and scene shop, construction of scenery, hanging and focusing lights, sound and light-board operation, scenic painting, and building and acquisition of costumes and props. Students will practice and apply these skills in the actual creative process while developing time-management skills in the process. Throughout the semester the student will log a minimum of 30 hours of shop and production time assisting a Theatre Program production.

MUS-149. 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-151. Introduction to Lighting Design. 3 Credits.
LECT 1 hr, LAB 2 hrs
In this course students will explore the practicality & artistry of Lighting Design for the stage. Through a series of lectures, collaboration projects, and first-hand demonstrations, students will be able to explain and apply the properties and functions of Light while acquiring the knowledge and skillset to perform common duties of a theatrical electrician. This class also emphasizes critical thinking while analyzing scripts, synthesizing artistic and stylistic choices and their effects on the stage. Students will be challenged with a hands-on training approach; assisting with various light hangs and focuses, as well as learning how to program and operate an ETC Ion lighting console. Upon completion students will gain an overall working technical knowledge of electricity, the equipment and tools of the trade, and learn how to apply them to a final design. Throughout the semester the student will log a minimum of 30 hours of shop and production time assisting a Theatre Program production.

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 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-156. 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-157. 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-158. Guitar III. 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-159. Guitar IV. 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. 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-161. 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-162. Music Business I. 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. Project will include developing a professional press kit that will be presented to the artist at the end of the semester.

MUS-163. 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-164. 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-165. 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-166. 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-167. Music Recording I. 3 Credits.
LECT 3 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-168. Music Recording II. 3 Credits.
LECT 3 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-169. Music Recording III. 3 Credits.
LECT 3 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-170. Music Recording IV. 3 Credits.
LECT 3 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. Music Recording V. 3 Credits.
LECT 3 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. Music Recording VI. 3 Credits.
LECT 3 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. Music Recording VII. 3 Credits.
LECT 3 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. Music Recording VIII. 3 Credits.
LECT 3 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-175. Music Recording IX. 3 Credits.
LECT 3 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. Prerequisites: Permission of department chair.

MUS-185. Appreciation of Musical Theatre. 3 Credits.
LECT 3 hrs
The course charts the history of the American Musical from its roots in vaudeville and operetta to its flowering in the Golden Age of the 40s, 50s, up to the contemporary scene. Through the use of film clips, recordings, lectures and discussions, students will gain an understanding of an appreciation for one of America's greatest contributions to the arts. Prerequisites: Permission of department chair.

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. *Note: Music Theory, Applied Music Primary and Applied Music Secondary (Piano or Voice) are co-requisite courses and in most cases should be taken together. Please refer to your Curriculum Check-sheet and consult with your Academic Advisor for specific program requirement Prerequisites: MUS-118 For Music Students Only.

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. *Note: Music Theory, Applied Music Primary and Applied Music Secondary (Piano or Voice) are co-requisite courses and in most cases should be taken together. Please refer to your Curriculum Checksheet and consult with your Academic Advisor for specific program requirements. Prerequisites: MUS-215 For Music Students Only.
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-231. 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-232. 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 faculty member and student and must be approved by the department chair.
Prerequisites: Permission of department chair
Additional Fees: Course fee applies.

MUS-233. Independent Study in Music. 1 Credit.
LECT 1 hr
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-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  
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 three song professional EP and podcast will be  
produced and presented to the artist at the end of the semester.  
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  
estudio 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-251. Sound Reinforcement. 3 Credits.  
LECT 3 hrs  
Sound Reinforcement introduces students to the set-up and use of  
equipment for live sound events ranging from musical performances  
to musical theater. Students learn first-hand about sound system  
set up and operation. Sound Reinforcement provides students a  
well-rounded and practical audio education that prepares them for  
professional work in the audio industry.  
Prerequisites: MUS-165.

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. Independent Study in Music IV. 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

Electronic Music
(P2171)
The Electronic Music program 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 compositions and learn techniques and application of software programs dealing with music recording, notation, sound editors and sound libraries.

For more information about the Electronic Music program, visit the Music website.

Associate in Science Degree

Music Recording
(P2170)
The Music Recording program 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.

For more information about the Music Recording program, visit the Music website.

Degrees
• AS Music Technology - Electronic Music Option (p. 164)
• AS Music Technology - Music Recording Option (p. 164)

Electronic Music
(P2171)
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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<tr>
<td>ENG-111 English Composition I</td>
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<td>Laboratory Science (4 credits) - From the General Education Course List, choose any 4 credit science course that includes a lab component</td>
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<td>MUS-150 Jazz History and Styles</td>
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<td>MUS-163 Rock History and Culture</td>
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<td>MUS-217 Music History and Literature to 1750</td>
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<td>MUS-218 Music History and Literature From 1750</td>
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<td>MUS-258 Contemporary Music: 20th-21st Century</td>
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*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.

<table>
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<th>Course Title</th>
<th>Credits</th>
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<td>MUS-216</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 - III

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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)

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and one of the following

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<td>MUS-221</td>
<td>Chamber Ensemble I</td>
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Electronic Music

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<td>MUS-124</td>
<td>Electronic Music II</td>
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<td>MUS-165</td>
<td>Introduction to Music Recording</td>
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<td>MUS-166</td>
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Music Recording

(P2170)

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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<tr>
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<td>CMP-135</td>
<td>Computer Concepts With Applications</td>
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| Social Science - Choose one of the following | PSY-113 | General Psychology | 3 |
| Humanities - Choose one of the following | SOC-120 | Principles of Sociology | 3 |
| Social Science or Humanities Elective | MUS-114 | American Music | 3 |
| General Education Electives | MUS-143 | World Music and Culture | |
| General Education Electives | MUS-150 | Jazz History and Styles | |
| General Education Electives | MUS-163 | Rock History and Culture | |
| General Education Electives | MUS-248 | Enjoyment of Music | |
| General Education Electives | MUS-217 | Music History and Literature to 1750 | |
| General Education Electives | MUS-218 | Music History and Literature From 1750 | |
| General Education Electives | MUS-258 | Contemporary Music: 20th-21st Century | |
| Language Sequence or History | MUS-114 | American Music | 3 |
| General Education Electives | MUS-143 | World Music and Culture | |
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| General Education Electives | MUS-258 | Contemporary Music: 20th-21st Century | |

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.

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Note: Students must be registered for at least 6 Music credits in order to enroll in Applied Music Primary I - III

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<td>MUS-137</td>
<td>Applied Music Primary III</td>
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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
- MUS-126 Applied Music Secondary-Piano II 1
- or MUS-110 Applied Music Secondary-Voice II

**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

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**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.
Prerequisites: singing, ear-training, writing, playing, terminology and form analysis.

LECT 2 hrs, LAB 3 hrs

MUS-118. Music Theory II. 3 Credits.

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: Music Majors only. Permission of Department Chair.

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.
LECT 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.
LECT 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.
LECT 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.
LECT 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-149. Introduction to Technical Theatre. 3 Credits.
LECT 1 hr, LAB 2 hrs
In this course students will be introduced to all facets of western technical theatre practices. Through a series of lectures, practical exercises, and projects, along with field trips to professional scene shops and theaters, students will explore various production roles, fundamental terminology, and conventional processes including maintaining a theater and scene shop, construction of scenery, scenic painting, and building and acquisition of costumes and props. Students will practice and apply these skills in the actual creative process while developing time-management skills in the process. Throughout the semester the student will log a minimum of 30 hours of shop and production time assisting a Theatre Program production.

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-151. Introduction to Lighting Design. 3 Credits.
LECT 1 hr, LAB 2 hrs
In this course students will explore the practicality & artistry of Lighting Design for the stage. Through a series of lectures, collaboration projects, and first-hand demonstrations, students will be able to explain and apply the properties and functions of Light while acquiring the knowledge and skillset to perform common duties of a theatrical electrician. This class also emphasizes critical thinking while analyzing scripts, synthesizing artistic and stylistic choices and their effects on the stage. Students will be challenged with a hands-on training approach; assisting with various light hangs and focuses, as well as learning how to program and operate an ETC Ion lighting console. Upon completion students will gain an overall working technical knowledge of electricity, the equipment and tools of the trade, and learn how to apply them to a final design. Throughout the semester the student will log a minimum of 30 hours of shop and production time assisting a Theatre Program production.

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 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. Project will include developing a professional press kit that will be presented to the artist at the end of the semester.

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-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.

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.

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.

MUS-177. 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-178. Aural Comprehension V. 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 VI. 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.
Prerequisites: MUS-165
Corequisites: MUS-167
Additional Fees: Course fee applies.

MUS-181. Audio Production Techniques. 1 Credit.
LECT 2 hrs, LAB 2 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.
Prerequisites: MUS-165, MUS-167, MUS-180
Additional Fees: Course fee applies.

MUS-183. 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-184. Musical Theatre Production and Performance. 3 Credits.
LECT 3 hrs
The course charts the history of the American Musical from its roots in vaudeville and operetta to its flowering in the Golden Age of the 40s, 50s, up to the contemporary scene. Through the use of film clips, recordings, lectures and discussions, students will gain an understanding of an appreciation for one of American’s greatest contributions to the arts.
Prerequisites: Permission of department chair.

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. *Note: Music Theory, Applied Music Primary and Applied Music Secondary (Piano or Voice) are co-requisite courses and in most cases should be taken together. Please refer to your Curriculum Check-sheet and consult with your Academic Advisor for specific program requirement
Prerequisites: MUS-118 For Music Students Only.

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. *Note: Music Theory, Applied Music Primary and Applied Music Secondary (Piano or Voice) are co-requisite courses and in most cases should be taken together. Please refer to your Curriculum Checksheet and consult with your Academic Advisor for specific program requirements.
Prerequisites: MUS-215 For Music Students Only.

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
This course is recommended for guitar majors, jazz ensemble guitarist 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 three song professional EP and podcast will be produced and presented to the artist at the end of the semester.
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-251. Sound Reinforcement. 3 Credits.
LECT 3 hrs
Sound Reinforcement introduces students to the set-up and use of equipment for live sound events ranging from musical performances to musical theater. Students learn first-hand about sound system set-up and operation. Sound Reinforcement provides students a well-rounded and practical audio education that prepares them for professional work in the audio industry.
Prerequisites: MUS-165.

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. Independent Study in Music IV. 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.

Musical Theatre

Associate in Arts Degree

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.

For more information, visit the Musical Theatre (http://www.ccm.edu/academics/divdep/liberal-arts/department-of-music-dance-and-performing-arts/musical-theatre/) website.

Degrees

AA Musical Theatre

(P2006)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG-111</td>
<td>English Composition I</td>
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<tr>
<td>ENG-112</td>
<td>English Composition II</td>
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<tr>
<td>COM-109</td>
<td>Speech Fundamentals</td>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Math/Science/Technology - Choose from the General Education course list</td>
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<tr>
<td>Mathematics (3 - 8 CR)</td>
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172 Musical Theatre
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<thead>
<tr>
<th>Laboratory Science (4 - 8 CR)</th>
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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>
</tr>
<tr>
<td>SOC-120 Principles of Sociology</td>
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<tr>
<td>Humanities 6</td>
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<td>Choose 2 Music courses from the General Education Humanities List</td>
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<tr>
<td>MUS-185 Appreciation of Musical Theatre</td>
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<td>History 6</td>
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<td>*Please refer to the #2006 Curriculum Check Sheet for specific History choices.</td>
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<td>Choose a Music course from the General Education Diversity List</td>
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<td>General Education Foundation Credits 45</td>
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<td>Musical Theatre Core</td>
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<td>MUS-117 Music Theory I 3</td>
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<tr>
<td>MUS-109 Applied Music Secondary-Voice I 1</td>
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<tr>
<td>MUS-152 Piano I 1</td>
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<td>MUS-153 Piano II 1</td>
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<td>MUS-145 Chamber Choir I 1</td>
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<td>MUS-146 Chamber Choir II 1</td>
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<td>MUS-147 Chamber Choir III 1</td>
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<td>MUS-148 Chamber Choir IV 1</td>
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<td>Note: Students must be registered for at least 6 Music credits in order to enroll in Applied Music Primary I &amp; II.</td>
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<tr>
<td>MUS-135 Applied Music Primary I 1</td>
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<tr>
<td>MUS-136 Applied Music Primary II 1</td>
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<td>MUS-227 Operetta and Music Theatre I 1</td>
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<tr>
<td>MUS-228 Operetta and Musical Theatre II 1</td>
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<td>MUS-229 Operetta and Musical Theatre III 1</td>
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<td>MUS-230 Operetta and Musical Theatre IV 1</td>
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<td>MUS-237 Cabaret Music Theatre 1</td>
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<td>MUS-243 Musical Theatre Auditions 3</td>
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<td>DRA-115 Performance Lab I 1</td>
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<td>DRA-117 Performance Lab II 1</td>
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<td>DAN-146 Dance for Musical Theatre 1</td>
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<tr>
<td>Musical Theatre Core Credits 23</td>
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<td>Total Credits 68</td>
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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-115. Performance Lab I. 1 Credit.**
LECT 1 hr
The study of the various components of play production resulting in the mounting of a full-scale drama or comedy taken from both the classical and contemporary theatre. Students participate as actors, technicians, and crew members.

**DRA-117. Performance Lab II. 1 Credit.**
LECT 1 hr
The study of the various components of play production resulting in the mounting of a full-scale drama or comedy taken from both the classical and contemporary theatre. Students participate as actors, technicians, and crew members.

**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.

**Faculty**

Marielaine R. Mammon  
Chairperson, Music, Performing Arts & Music Technologies  
Professor, Music  
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B.M., Montclair State University  
A.A., South Plains College  
A.A.S., South Plains College  
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Dr. Jose Bevia  
Professor, Music  
Ph.D., Florida State University  
B.M., Berklee College of Music  
B.M., Valencia Conservatory  
MTC 202 973-328-5432  jbevia@ccm.edu

**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.

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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.
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LECT 1 hr
The study of the various components of play production resulting in the mounting of a full-scale drama or comedy taken from both the classical and contemporary theatre. Students participate as actors, technicians, and crew members.

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The study of the various components of play production resulting in the mounting of a full-scale drama or comedy taken from both the classical and contemporary theatre. Students participate as actors, technicians, and crew members.

**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.
MUS-111. 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 study 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: Music Majors only. Permission of Department Chair.

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.
LECT 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.
LECT 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.
LECT 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.
LECT 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-149. Introduction to Technical Theatre. 3 Credits.
LECT 1 hr, LAB 2 hrs
In this course students will be introduced to all facets of western technical theatre practices. Through a series of lectures, practical exercises, and projects, along with field trips to professional scene shops and theaters, students will explore various production roles, fundamental terminology, and conventional processes including maintaining a theater and scene shop, construction of scenery, hanging and focusing lights, sound and light-board operation, scenic painting, and building and acquisition of costumes and props. Students will practice and apply these skills in the actual creative process while developing time-management skills in the process. Throughout the semester the student will log a minimum of 30 hours of shop and production time assisting a Theatre Program production.

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-151. Introduction to Lighting Design. 3 Credits.
LECT 1 hr, LAB 2 hrs
In this course students will explore the practicality & artistry of Lighting Design for the stage. Through a series of lectures, collaboration projects, and first-hand demonstrations, students will be able to explain and apply the properties and functions of Light while acquiring the knowledge and skillset to perform common duties of a theatrical electrician. This class also emphasizes critical thinking while analyzing scripts, synthesizing artistic and stylistic choices and their effects on the stage. Students will be challenged with a hands-on training approach; assisting with various light hangs and focuses, as well as learning how to program and operate an ETC ION lighting console. Upon completion students will gain an overall working technical knowledge of electricity, the equipment and tools of the trade, and learn how to apply them to a final design. Throughout the semester the student will log a minimum of 30 hours of shop and production time assisting a Theatre Program production.

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 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. Project will include developing a professional press kit that will be presented to the artist at the end of the semester.

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-185. Appreciation of Musical Theatre. 3 Credits.
LECT 3 hrs
The course charts the history of the American Musical from its roots in vaudeville and operetta to its flowering in the Golden Age of the 40s, 50s, up to the contemporary scene. Through the use of film clips, recordings, lectures and discussions, students will gain an understanding of an appreciation for one of America’s greatest contributions to the arts.
Prerequisites: Permission of department chair.

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. *Note: Music Theory, Applied Music Primary and Applied Music Secondary (Piano or Voice) are co-requisite courses and in most cases should be taken together. Please refer to your Curriculum Check-sheet and consult with your Academic Advisor for specific program requirement
Prerequisites: MUS-118 For Music Students Only.

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. *Note: Music Theory, Applied Music Primary and Applied Music Secondary (Piano or Voice) are co-requisite courses and in most cases should be taken together. Please refer to your Curriculum Check-sheet and consult with your Academic Advisor for specific program requirements.
Prerequisites: MUS-215 For Music Students Only.
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
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. Enjoymnt 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 three song professional EP and podcast will be produced and presented to the artist at the end of the semester.
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-251. Sound Reinforcement. 3 Credits.
LECT 3 hrs
Sound Reinforcement introduces students to the set-up and use of equipment for live sound events ranging from musical performances to musical theater. Students learn first-hand about sound system set up and operation. Sound Reinforcement provides students a well-rounded and practical audio education that prepares them for professional work in the audio industry.
Prerequisites: MUS-165.

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. Independent Study in Music IV. 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.

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. Information for transfer students and regarding professional phase admission criteria for all students can be found here:


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 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 (Basic Life Support) 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.

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/health-professions-natural-sciences/department-of-nursing/.

Articulation Agreements

Credits are readily transferable into RN-BSN programs upon graduation. Students should check with the Transfer Office about specific 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

ENG-111 English Composition I
ENG-112  English Composition II
Math-Science-Technology  3/4
  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  20-23

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  67-70

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 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 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.

Faculty
Lesley Andrew, DNP, R.N., CNE
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BSN, Rutgers University
B.S., Queen’s University
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MSN, College of Saint Elizabeth
BSN, Pace University
B.A., Lycoming College
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Elizabeth Elliott, MSN, R.N., CNE
Assistant Professor, Nursing
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: Permission of department chair
Additional Fees: Course fee applies.

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.

NUR-106. Medical Terminology. 2 Credits.
LECT 2 hrs
This course is intended for students 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. Selected medical-surgical skills will be reviewed and/or experienced.
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 Healthcare Professional. 3 Credits.
LECT 3 hrs
This course introduces the student to basic principles of pharmacology and drug therapy. It is designed for students enrolled in the nursing program but other allied health majors who wish to gain a better understanding of drug therapy may also benefit from the course. This course may also be useful for any professional who is involved with medication administration or who works with clients for whom medications are a treatment modality. It is organized according to body systems and diseases, which places the drugs in context and provides a clear view of the connection among pharmacology, pathophysiology and clinical outcomes. Drug prototypes most representative in each drug classification are discussed in detail. This course was developed as a free elective for students in the School of Health Professions and Natural Sciences. Students are advised to check transferability to other institutions.
Prerequisites: BIO-101 or BIO-121.

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/).


### Degrees

#### AS Occupational Therapy Assistant (P2155)

**General Education Foundation**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG-111</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-112</td>
<td>English Composition II</td>
<td>3</td>
</tr>
<tr>
<td>BIO-101</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
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<tr>
<td>BIO-102</td>
<td>Anatomy and Physiology II</td>
<td>4</td>
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<tr>
<td>MAT-124</td>
<td>Statistics</td>
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<tr>
<td>or MAT-111</td>
<td>College Algebra</td>
<td>4</td>
</tr>
<tr>
<td>PSY-113</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PHL-114</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>SOC-120</td>
<td>Principles of Sociology</td>
<td>3</td>
</tr>
<tr>
<td>Diversity Elective</td>
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<td>6</td>
</tr>
<tr>
<td>General Education Foundation Credits</td>
<td></td>
<td>32</td>
</tr>
</tbody>
</table>

**Occupational Therapy Core**

The professional phase consists of 42 credits to be completed at Rutgers.

<table>
<thead>
<tr>
<th>Course Title</th>
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<tr>
<td>HES-104 Foundations of Personal Training</td>
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</tr>
<tr>
<td>HED-115 Personal and Family Nutrition</td>
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</tr>
<tr>
<td>HES-127 Weight Training</td>
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</tr>
<tr>
<td>HES-126 Personal Fitness</td>
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</tr>
<tr>
<td>HES-107 Program Design and Implementation</td>
<td>3</td>
</tr>
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</tr>
<tr>
<td>HED-283 Cardiopulmonary Resuscitation</td>
<td>1</td>
</tr>
<tr>
<td>HES-106 Personal Trainer Field Experience</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits: 32

**Faculty**

Bryan Lemme  
Assistant Professor, Health and Exercise Science  
M.S., East Stroudsburg University  
B.S., William Paterson University

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**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.


### Certificates of Achievement

#### Certificate of Achievement - Personal Trainer (P0950)

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</tr>
</tbody>
</table>

Total Credits: 16

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.

HED-ELE. Health and Wellness Elective for Cutk. 3 Credits.
LECT 3 hrs
Pseudo course to hold a place in student planner.
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 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-227. Exercise Science Internship (45-100 Hour S). 1 Credit.
COOP 1 hr
This course provides students enrolled in the Exercise Science major with pre-professional, job-oriented training, practical work experience and/or career related exploration in a paid or unpaid work environment prior to permanent employment and/or degree transfer. The student will participate in planned, supervised work that integrates career related experience into their education. The duration of the experience ranges between 45 and 100 hours. The course may be taken in fulfillment of requirement or an elective in the Exercise Science curricula. Students desiring to participate in this experience should make their intention known to the department chair at the beginning of the semester prior to the semester in which they intend to do the internship.
Prerequisites: Permission of department chair.

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.

HES-ELE. Exercise Science Restricted Elective. 1-3 Credits.
LECT 10 hrs
Pseudo course holder for student planner.
Photography Technology

Associate in Applied Science Degree

Whether graduates wish to start their own photography business as a commercial photographer, transfer to a senior college or work as an artist, the Photography Technology program provides graduates with skills that would fit their personal ambition and career goals. Following a foundation year of digital and darkroom photography, the second year includes specialized courses in lighting, video, virtual reality, post production techniques, color management, and portfolio building. 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/divdeip/department-of-art-and-design/photography-technology/) website.

Degrees

AAS Photography Technology
(P3550)

General Education Foundation
Communication 6
ENG-111 English Composition I
ENG-112 English Composition II
Math-Science-Technology 8
Choose from General Education course list
Mathematics (4 CR)
Laboratory Science (4 CR)
Social Science or Humanities 3
Choose from General Education course list
General Education Electives 3
PHO-113 History of Photography
General Education Foundation Credits 20

Photography Technology Core
PHO-101 Introduction to Analog Photography Techniques 1
PHO-115 Photography I 3
PHO-116 Photography II 3
PHO-114 Photographic Processes 3
PHO-119 Contemporary Photography 3
PHO-117 Color Photography I 3
PHO-204 Digital Imaging I 3
PHO-213 Documentary Photography 3
PHO-216 Studio Lighting I 3
PHO-224 Digital Imaging II 3
PHO-226 Portfolio Preparation 3
PHO-227 Professional Studio Photography 3
Art Elective 3
Art Elective 3

Photography Technology Core Credits 40
Total Credits 60

Faculty

Nieves Gruneiro-Roadcap
Chairperson, Art and Design
Associate Professor, Art and Design
M.F.A., Mason Gross School of the Arts, Rutgers University
B.F.A., New Jersey City University
EH 101 973-328-5435 ngruneiro@ccm.edu

Hrvoje Slovenc
Special Projects, Photography Technology
Assistant Professor, Art and Design
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-101. Introduction to Analog Photography Techniques. 1 Credit.
LECT 1 hr
This 7-week, 1-credit introductory course introduces students to B&W photography darkroom techniques. Students will learn how to operate an analog 35mm film camera, develop B&W negative film and create B&W darkroom prints of appropriate density and contrast. Students should own or have unrestricted access to an analog 35mm film camera. Note: This course is offered only in the Fall semester. Photography majors taking a Photography 1 course during Fall semester must take this course as a co-requisite. If a photo major takes their Photography 1 course in the Spring or Summer semester, this course must be taken prior to enrolling in Photography 2 (PHO-116). Special permission required for non-photo majors.

Corequisites: PHO-115.

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-006 or 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. Photography Technology majors must take PHO-115 and PHO-101 in their first semester.
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-101 and 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-204
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.

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 1 hr, LAB 4 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 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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<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>MAT-124 Statistics</td>
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<td>CHM-117 Introductory Chemistry Lecture</td>
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<td>&amp; CHM-118 Introductory Chemistry Laboratory</td>
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<td>CMP-135 Computer Concepts With Applications</td>
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<td>Social Science</td>
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<td>PSY-113 General Psychology</td>
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<td>COM-109 Speech Fundamentals</td>
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<td>PHL-114 Ethics</td>
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<td>SOC-120 Principles of Sociology</td>
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### Public Health Core

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<tr>
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<tr>
<td>PBH-101 Principles of Public Health</td>
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<td>BIO-101 Anatomy and Physiology I</td>
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<td>BIO-102 Anatomy and Physiology II</td>
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<tr>
<td>HED-115 Personal and Family Nutrition</td>
<td>3</td>
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<tr>
<td>HED-286 Personal Health and Wellness</td>
<td>3</td>
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<tr>
<td>or HED-112 Drugs, Society and Human Behavior</td>
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<td>HED-295 First Aid and Emergency Care</td>
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<td>NUR-106 Medical Terminology</td>
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<td>Foreign Language Sequence II</td>
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<td>OR</td>
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<td>Diversity Elective AND</td>
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<td>Free Elective</td>
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### Total Credits

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1. History Elective: Choose from the History category that is listed on the general education course list.

2. Exercise Science Restricted Elective: Choose from the following: HED-132, HED-133, HES-121, HES-125, HES-126, HES-127, HES-128, HES-130, HES-131, or one aquatics course.

3. Certain four-year institutions will require 6 credits of a foreign language sequence. You should meet with your Academic Advisor before selection.

4. Certain four-year institutions will require 6 credits of a foreign language sequence. You should meet with your Academic Advisor before selection.

5. Choose any 3 or 4 credit course.

### 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

### 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 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/divdep/health-professions-natural-sciences/department-of-allied-health/radiography/) website.

**Degrees**

**AAS Radiography**

(P3840)

**General Education Foundation**

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<thead>
<tr>
<th>Course Code</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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<tr>
<td>CMP-135</td>
<td>Computer Concepts With Applications</td>
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<td>BIO-101</td>
<td>Anatomy and Physiology I</td>
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<td>BIO-102</td>
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**General Education Foundation Credits**

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<td>COM-109</td>
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<td>RAD-100</td>
<td>Introduction to Radiography</td>
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<td>RAD-104</td>
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<td>RAD-107</td>
<td>Radiography Clinical Practice I</td>
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<td>MAT-140</td>
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<td>RAD-110</td>
<td>Radiation Biology and Physics</td>
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<td>RAD-120</td>
<td>Intermediate Clinical Practice</td>
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<td>RAD-200</td>
<td>Pathology for Radiography</td>
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<td>RAD-204</td>
<td>Principles of Radiography III</td>
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<td>RAD-207</td>
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<td>RAD-210</td>
<td>Radiographic Exposure</td>
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**Radiography Core**

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**Radiography Core Credits**

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**Total Credits**

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<td>RAD-230</td>
<td>Advanced Clinical Practice</td>
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</tbody>
</table>

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)
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AAS, Bergen Community College
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A. A. S., Northampton Community College
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B.S., Breyer State University
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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-100, RAD-104, RAD-107, MAT-140
Corequisites: BIO-102, 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  
Prerequisites:  
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, arthrography, 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-204, RAD-213, RAD-207, RAD-200, RAD-210  
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. A professional phase application form must be completed by March 1 for admission into the fall professional phase.  

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
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 [website](http://www.ccm.edu/academics/divdep/health-professions-natural-sciences/department-of-allied-health/respiratory-therapy/).

**Degrees**

**AAS Respiratory Therapy (P3850)**

**General Education Foundation**

<table>
<thead>
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<td>ENG-112 English Composition II</td>
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<td>MAT-110 College Algebra</td>
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<td>PSY-113 General Psychology</td>
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<td>BIO-101 Anatomy and Physiology I</td>
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<td>BIO-102 Anatomy and Physiology II</td>
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**Respiratory Therapy Core**

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<td>CHM-118 Introductory Chemistry Laboratory</td>
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<td>BIO-215 Microbiology</td>
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<td>PHY-103 Concepts of Physics</td>
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<td>Humanities Elective</td>
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**Professional Phase**

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<td>RTH-199 Respiratory Therapeutics</td>
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<td>RTH-202 Cardiopulmonary Pharmacology</td>
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<td>RTH-203 Cardiopulmonary Physiology</td>
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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 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) [website](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) [website](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  
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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 2 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: Permission of program director RTH-199, RTH-202, RTH-203 courses need to be taken concurrently or previously
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.

Routing (CISCO CCNA)-Certificate of Achievement
Routing (CISCO CCNA) - Certificate of Achievement

Routing (CISCO CCNA), a Telecommunications Systems Technology Option, Career Certificate

The Telecommunications Systems Technology certificates are designed for present or future professionals who seek to improve their technical knowledge and skills in certain areas. Each certificate is balanced with theory and hands-on experience.

The certificates are designed primarily for students who are presently working or plan to work in one of the areas. It is possible to complete any certificate within one semester. The certificates also serve as an introduction to the field and can transfer completely to one or both of the Telecommunications Systems Technology degree programs. Some courses in the various certificates also prepare students to take outside certification examinations such as CCNA, Microsoft, CompTIA’s Net+ and CompTIA’s A+.

Certificates of Achievement

Routing - Certificate of Achievement

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<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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Total Credits 10

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. 3 Credits.
LECT 2 hrs, LAB 3 hrs
The course introduces basic routing principles in a network environment, supplemented with industry-standard labs, such as those provided by CISCO. 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 advanced 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-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.

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. 199)
- AS Science and Mathematics - Biology Option, Track 1: Traditional (p. 199)
- AS Science and Mathematics - Biology Option, Track 2: Health Related (p. 200)
- AS Science and Mathematics - Biology Option, Track 3: Preprofessional/Scientific (p. 200)
- AS Science and Mathematics - Biology Option, Track 4: Environmental (p. 201)
- AS Science and Mathematics - Biology Option, Track 5: Nutrition (p. 201)
- AS Science and Mathematics - Biology Option, Track 6: Biotechnology (p. 202)
- AS Science and Mathematics - Chemistry Option (p. 202)
- AS Science and Mathematics - Mathematics Option (p. 203)

**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 six 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 nonscience 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
**Science and Mathematics**

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<td>ENG-111</td>
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<tr>
<td>MAT-123</td>
<td>Precalculus</td>
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<td>Biology Elective</td>
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<tr>
<td>Math-Science-Technology Elective</td>
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**Biology Traditional Core**

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<td>MAT-130</td>
<td>Probability and Statistics (OR)</td>
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<td>MAT-131</td>
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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 chiropractic, 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.

**Health Related - Track 2**

<table>
<thead>
<tr>
<th>Course Code</th>
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<td>Math-Science-Technology Elective</td>
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</tbody>
</table>

*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.

**Environmental - Track 4**

**General Education Foundation**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>MAT-130</td>
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<td><strong>Biology Preprofessional Core Credits</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
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</tbody>
</table>

**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.

**Nutrition - Track 5**

**General Education Foundation**

<table>
<thead>
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<td>ENG-112</td>
<td>English Composition II</td>
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<td>MAT-124</td>
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<td>BIO-133</td>
<td>Human Biology</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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</tr>
<tr>
<td>ECO-211</td>
<td>Principles of Economics I Macroeconomics</td>
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<tr>
<td><strong>Social Science</strong></td>
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*Choose from General Education course list*  
*Choose from General Education course list*  
*Choose from General Education course list*  
*Choose from General Education course list*  

**Biology Nutrition Core**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>BIO-121</td>
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<td>BIO-122</td>
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<td>BIO-215</td>
<td>Microbiology</td>
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<tr>
<td>HOS-100</td>
<td>Serv-Safe Food Handling</td>
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<td>HOS-105</td>
<td>Food Science and Nutrition</td>
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<td>CHM-210</td>
<td>Essentials of Organic Chemistry</td>
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<td><strong>Total Credits</strong></td>
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<tr>
<td><strong>Biology Preprofessional Core Credits</strong></td>
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</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

*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.*
Biology Nutrition Core Credits 28
Total Credits 60

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

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Biotechnology

Biotechnology is the most rapidly growing sector in the field of biology and is a major industry in New Jersey. This area of science applies our current understanding of living organisms (plants, animals, microbes) and systems (tissues, cells, biological molecules) to products and processes that can help improve society and the overall health of the planet. In this track, students will study modern biotechnology methods and instrumentation through a combination of theoretical knowledge and practical training.

Biotechnology - Track 6

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 SCIENCES 3
Choose from General Education course list (Social Sciences)

HUMANITIES 3
Choose from General Education course list (Humanities)

SOCIAL SCIENCES or HUMANITIES 3
Choose from General Education course list (Social Sciences or Humanities)

GENERAL EDUCATION ELECTIVES 6
Choose from General Education course list

GENERAL EDUCATION FOUNDATION Credits 32

BIOLOGY: BIOTECHNOLOGY CORE 28

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

BIOLOGY: BIOTECHNOLOGY CORE Credits 28

Total Credits 60

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.

Chemistry

An Option within Science and Mathematics

(P2152)

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 that continue to keep their knowledge up-to-date. Some faculty members have industrial or medical experience, which allows them to better apply real-world examples in class. State-of-the-art equipment is used in 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 transfer-ability.

### 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.

<table>
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<tr>
<th>General Education Foundation</th>
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<tr>
<td>Communication</td>
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<td>Math-Science-Technology</td>
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<tr>
<td>MAT-123 Precalculus</td>
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<td>Biology or Physics Elective</td>
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<td>Math/Science/Technology Elective</td>
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<td>Social Science</td>
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<td>General Education Electives</td>
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<td>General Education Foundation Credits</td>
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<td>CHM-126 General Chemistry I - Laboratory</td>
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<td>Chemistry Core Credits</td>
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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)

<table>
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<tbody>
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Students considering a career in teaching should read about the County College of Morris Teacher Education Specialization in Mathematics.

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<td>or MAT-244 Ordinary Differential Equations</td>
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Students should consult with their academic advisors when selecting the Math and free electives.
Faculty

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Courses

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 integumentary, 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-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. This course requires field exercises that may include moderate physical activity.
Prerequisites: Placement basis or ENG-007 or ENG-022 or ENG-025
Additional Fees: Course fee applies.

BIO-129. Introduction to Botany. 4 Credits.
LECT 3 hrs, LAB 2 hrs
Botany 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 laboratories and greenhouse facilities.

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 majors or for those students enrolled in Curriculum 2160, Nutrition Track. It is an introduction to the body systems and the factors that affect human physiology. Lectures include 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 1 hr
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 or 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. This course requires field exercises that may include moderate physical activity. 
Prerequisites: Minimum grade of C required for BIO-121 and BIO-122 or BIO-180 and BIO-181 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 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: Permission of department chair.

BIO-228. Internship Work Experience - Biology. 3 Credits. 
COOP 3 hrs
This course provides selected students enrolled in the 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: 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-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.

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) 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-210. Essentials of Organic Chemistry. 4 Credits.
LECT 3 hrs, LAB 3 hrs
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-125 and CHM-126 (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-218. Analytical Chemistry - Instrumental Analysis. 4 Credits.
LECT 3 hrs, LAB 3 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: 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: 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.
RECI 1 hr, LECT 2 hrs
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-00B. Prereq Algebra 1A. 3 Credits.
LECT 3 hrs
Awarded by taking college placement test.

MAT-00R. Prereq Elem Alg. Recitation. 0 Credits.
LECT hrs
Awarded by taking the college 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-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-114. Introduction to Data Science. 4 Credits.
LECT 4 hrs
Introduction to Data Science will provide students with data literacy skills in order to understand techniques in data manipulation, visualization and interpretation. This project based course will allow students to utilize a toolkit of statistical software to perform data science methods. Ethical issues related to data privacy, authenticity and security will be addressed alongside an introduction to artificial intelligence.
Prerequisites: MAT-016 or MAT-120 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 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-006, 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 4 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, 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
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-244. Ordinary Differential Equations. 4 Credits.
LECT 4 hrs
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. Elementary school or N-12 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. Elementary school or N-12 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. Elementary school or N-12 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. Elementary school or N-12 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. Elementary school or N-12 subject matter endorsement.

MAT-ELE. Mathematics Elective. 3-4 Credits.  
LECT 3 hrs  
Pseudo course holder for Stu Planner.

Study Abroad Program

To provide its students with access to a global education, County College of Morris offers study abroad opportunities through its membership in the College Consortium for International Studies (CCIS). The consortium has programs in 27 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 (http://www.ccm.edu/studyabroad/) 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.

Teacher Education

Each of CCM’s ten Teacher Education specializations 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 programs that will provide the foundational 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 (http://www.ccm.edu/teacher-education/) website.

Degrees

- AS Teacher Education - Biology (p. 213)
- AS Teacher Education - Chemistry (p. 213)
- AA Teacher Education - English (p. 214)
- AS Teacher Education - Health/Physical Education (p. 214)
- AA Teacher Education - History (p. 215)
- AS Teacher Education - Mathematics (p. 214)
- AA Teacher Education - Psychology (p. 215)
- AA Teacher Education - Sociology (p. 216)
- AA Teacher Education - Spanish (p. 216)
- AFA Teacher Education - Visual Arts (p. 217)
### Biology

#### 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.

<table>
<thead>
<tr>
<th>General Education Foundation</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>COM-109 Speech Fundamentals</td>
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<td>Math-Science-Technology</td>
<td>8</td>
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<tr>
<td>MAT-123 Precalculus</td>
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<tr>
<td>Restricted Biology Elective</td>
<td></td>
</tr>
<tr>
<td>Social Science</td>
<td>3</td>
</tr>
<tr>
<td>PSY-113 General Psychology</td>
<td></td>
</tr>
<tr>
<td>Humanities</td>
<td>3</td>
</tr>
<tr>
<td>Choose from General Education course list (History)</td>
<td></td>
</tr>
<tr>
<td>Social Science or Humanities</td>
<td>3</td>
</tr>
<tr>
<td>Choose from General Education course list (Social Science or Humanities)</td>
<td></td>
</tr>
<tr>
<td>General Education Electives</td>
<td>6</td>
</tr>
<tr>
<td>Literature/Language Sequence</td>
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</tr>
<tr>
<td>General Education Foundation Credits</td>
<td>32</td>
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</tbody>
</table>

#### Biology Education Core

| 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 |
| BIO-121 General Biology I | 4 |
| BIO-122 General Biology II | 4 |
| Free Elective | 3 |
| Choose any course or combination of courses for a total of 3 credits | |
| Biology Education Core Credits | 19 |

#### Teacher Education Core

| EDU-111 Teaching in America | |
| EDU-211 Behavior Observation in Education | |
| PSY-217 Educational Psychology | |
| Teacher Education Core Credits | 9 |
| Total Credits | 60 |

### Chemistry

#### 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 Biology and Chemistry department.

<table>
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<td>COM-109 Speech Fundamentals</td>
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<tr>
<td>MAT-123 Precalculus</td>
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<tr>
<td>MAT-131 Analytic Geometry and Calculus I</td>
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<td>PSY-113 General Psychology</td>
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<td>Humanities</td>
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<tr>
<td>Choose from the General Education course list (History)</td>
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</tr>
<tr>
<td>Social Science or Humanities</td>
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<tr>
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<tr>
<td>General Education Electives</td>
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<tr>
<td>Literature Survey or Language Sequence</td>
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<td>General Education Foundation Credits</td>
<td>32</td>
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</table>

#### Chemistry Education Core

| 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 |
| Free Elective | 3 |
| Choose any course or combination of courses for a total of 3 credits | |
| Chemistry Education Core Credits | 19 |

#### Teacher Education Core

| PSY-217 Educational Psychology | 3 |
| EDU-111 Teaching in America | 3 |
| EDU-211 Behavior Observation in Education | 3 |
| Teacher Education Core Credits | 9 |
| Total Credits | 60 |

Science courses completed by students prior to entering the Chemistry option must be less than seven years old. If the science
cours exceed the seven-year limit, students can prove their competency by testing or they must retake courses.

English

Associate in Arts Degree
(P1130 TEENG)

This program is designed for transfer to a four-year program leading to certification for teaching, which requires an academic major (English) and professional education courses. Students will be advised by either the Teacher Education advisor or by a faculty advisor from the English Department.

General Education Foundation

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<tr>
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<tr>
<td>ENG-112  English Composition II</td>
<td>3</td>
</tr>
<tr>
<td>COM-109  Speech Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>Math-Science-Technology</td>
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<tr>
<td>Mathematics</td>
<td></td>
</tr>
<tr>
<td>Laboratory Science</td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td></td>
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<tr>
<td>Social Science</td>
<td>6</td>
</tr>
<tr>
<td>PSY-113  General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC-120  Principles of Sociology</td>
<td>3</td>
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<tr>
<td>Humanities</td>
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<tr>
<td>ENG-249  American Literature From the Colonial to The Civil War</td>
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</tr>
<tr>
<td>ENG-250  American Literature From the Civil War To the Twentieth Century</td>
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Humanities Elective

Choose from General Education Course List (Humanities)

History

See curriculum checksheet for History sequence choices

Diversity

ENG-243  World Literary Traditions: Beginnings to 1650 or ENG-244 World Literary Traditions: 1650 to Present

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 |

Teacher Education Core Credits 9

English Core

| ENG-246  English Classics From Beowulf to Paradise Lost: a Survey of Drama, Romances and Epics | 3 |
| ENG-247  Romantics, Victorians and Moderns- Major British Writers of the 19th and 20th Centuries | 3 |

English Core Credits 6

Total Credits 60

Health/Physical Education

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

| ENG-111  English Composition I   | 3 |
| ENG-112  English Composition II  | 3 |

Math-Science-Technology

| MAT-124  Statistics             | 3 |
| or MAT-110  College Algebra     |   |
| BIO-101  Anatomy and Physiology I | 4 |
| BIO-102  Anatomy and Physiology II | 4 |
| CMP-135  Computer Concepts With Applications | 3 |

Social Science

| PSY-113  General Psychology      | 3 |
| Humanities                       | 3 |

General Education Electives

Humanities/Social Science General Education Elective 3

General Education Foundation Credits 32

Teacher Education Physical Education Core

| HES-111  Introduction to Exercise Science | 3 |
| HED-115  Personal and Family Nutrition   | 3 |
| HES-211  Kinesiology                     | 3 |
| HED-295  First Aid and Emergency Care    | 3 |
| 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 Elective 1

Teacher Education Physical Education Core Credits 28

Total Credits 60

Mathematics

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

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<td>ENG-112 English Composition II</td>
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<tr>
<td>Math-Science-Technology</td>
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<tr>
<td>Restricted Laboratory Science - see curriculum checksheet for choices</td>
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<tr>
<td>Technology</td>
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<tr>
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<tr>
<td>PSY-113 General Psychology</td>
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</tr>
<tr>
<td>Humanities</td>
<td>3</td>
</tr>
<tr>
<td>Choose from General Education course list</td>
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<tr>
<td>Social Science or Humanities</td>
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<tr>
<td>Choose from General Education course list Humanities or Social Science section</td>
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<td>General Education Electives</td>
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<tr>
<td>COM-109 Speech Fundamentals</td>
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</tr>
<tr>
<td>Elective (choose from the list of approved General Education courses)</td>
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<td>General Education Foundation Credits</td>
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### Mathematics Core

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MAT-123 Precalculus</td>
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<tr>
<td>MAT-131 Analytic Geometry and Calculus I</td>
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<tr>
<td>MAT-132 Analytic Geometry and Calculus II</td>
</tr>
<tr>
<td>MAT-230 Calculus III</td>
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<tr>
<td>MAT-131 Analytic Geometry and Calculus I</td>
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<td>MAT-132 Analytic Geometry and Calculus II</td>
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<td>MAT-230 Calculus III</td>
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<td>MAT-244 Ordinary Differential Equations</td>
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### Teacher Education Core

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<th>Course</th>
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<tbody>
<tr>
<td>EDU-111 Teaching in America</td>
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<tr>
<td>EDU-211 Behavior Observation in Education</td>
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<tr>
<td>MAT-228 Linear Algebra</td>
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<tr>
<td>PSY-217 Educational Psychology</td>
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<table>
<thead>
<tr>
<th>Teacher Education Core Credits</th>
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<table>
<thead>
<tr>
<th>History Core &amp; Free Elective Credits</th>
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<tbody>
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<td>6</td>
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</table>

### History

**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 in 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

<table>
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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>
<tr>
<td>Math-Science-Technology</td>
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</tr>
<tr>
<td>Choose from General Education course list</td>
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<tr>
<td>Mathematics</td>
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<tr>
<td>Laboratory Science</td>
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<td>Technology</td>
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<td>Social Science</td>
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</tr>
<tr>
<td>PSY-113 General Psychology</td>
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<td>SOC-120 Principles of Sociology</td>
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<td>Literature Survey or Language Sequence</td>
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<td>History Core &amp; Free Elective</td>
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<tr>
<td>HIS-204 History of the African-American Experience or HIS-209 History of American Women</td>
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### Psychology

**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 in 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

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<td>COM-109 Speech Fundamentals</td>
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<td>Laboratory Science</td>
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<td>SOC-120</td>
<td>Principles of Sociology</td>
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**Teacher Education Core**

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<td>EDU-211</td>
<td>Behavior Observation in Education</td>
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<td>PSY-217</td>
<td>Educational Psychology</td>
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**Sociology Specialization Core**

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<tr>
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<td>SOC-202</td>
<td>Contemporary Social Issues - America As a Diverse Society</td>
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</table>

**Total Credits**

| Credits | 60 |

**Spanish**

**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**

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<td>ENG-112</td>
<td>English Composition II</td>
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<td>COM-109</td>
<td>Speech Fundamentals</td>
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<td>Math-Science-Technology</td>
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<tr>
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<td>Technology</td>
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<td>Social Science</td>
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<td>SOC-120</td>
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<tr>
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<tr>
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<tr>
<td>History</td>
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<td>6</td>
</tr>
<tr>
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<td></td>
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<td>Diversity</td>
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**Teacher Education Core**

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<tbody>
<tr>
<td>EDU-111</td>
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<td>3</td>
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<tr>
<td>EDU-211</td>
<td>Behavior Observation in Education</td>
<td>3</td>
</tr>
<tr>
<td>PSY-217</td>
<td>Educational Psychology</td>
<td>3</td>
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<tr>
<td>Teacher Education Core Credits</td>
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Education Specialization Core

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>SPN-219</td>
<td>Advanced Spanish Composition</td>
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<tr>
<td>SPN-220</td>
<td>Spanish Literature</td>
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</table>

Total Credits: 6

Visual Arts

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 Art and Design department.

General Education Foundation

<table>
<thead>
<tr>
<th>Foundation</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Communication</td>
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<tr>
<td>Math-Science-Technology</td>
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<td>Social Science</td>
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<td>General Education Courses</td>
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General Education Foundation Credits: 26

Teacher Education Core

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<tr>
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<tr>
<td>EDU-111</td>
<td>Teaching in America</td>
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<tr>
<td>EDU-211</td>
<td>Behavior Observation in Education</td>
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</tr>
<tr>
<td>PSY-217</td>
<td>Educational Psychology</td>
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Teacher Education Core Credits: 9

Visual Arts Core

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<tr>
<th>Course</th>
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<td>ART-122</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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<td>ART-219</td>
<td>Painting I</td>
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<tr>
<td>or ART-228</td>
<td>Sculpture I</td>
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<tr>
<td>or ART-241</td>
<td>Ceramics I</td>
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<tr>
<td>ART-230</td>
<td>Portfolio and Presentation</td>
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<td>ART-102</td>
<td>Introduction to Computer for Fine Art</td>
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</table>

Visual Arts Core Credits: 25

Total Credits: 60

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.

For more information, visit the Department of Information Technologies (http://www.ccm.edu/academics/divdep/bmet/department-of-information-technologies/) website.

Degrees

AAS Technical Studies

(P3510)
General Education Foundation

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

Math-Science-Technology 3
  SOC-120 Principles of Sociology

Social Science 3

General Education Electives 9
  Humanities Elective 1
  PSY-113 General Psychology

General Education Foundation Credits 21

Technical Studies Core

Select from one of the following concentrations: 1
  Computer Information Systems
  Digital Media Technology
  Telecommunications
  Electronic Technology
  Mechanical Technology
  Electro/Mechanical Technology
  Fire Science Technology

Technical Studies Core Credits 39

Total Credits 60

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.

2 Individuals should pick math course from the following restricted Math courses: MAT 110, MAT 124 or MAT 130

Select from one of the following concentrations:

Computer Information Systems
  CMP-120 Foundations of Information Security
  CMP-124 Network Security
  CMP-125 Information Security Management
  CMP-126 Computer Technology and Applications
  CMP-128 Computer Science I
  CMP-129 Computer Science II
  CMP-130 Introduction to Information Technology
  CMP-135 Computer Concepts With Applications
  CMP-160 Digital Forensics I
  CMP-170 Mobile App Design
  CMP-200 Computer Operating Systems and Utilities
  CMP-207 Electronic Spreadsheets (MS Excel)
  CMP-230 Computer Architecture and Assembly Language
  CMP-233 Data Structures and Algorithms
  CMP-237 Visual Basic (VB.Net)

CMP-239 The Internet and Web Page Design
CMP-241 Database Programming (Oracle)
CMP-243 Ethical Hacking and Systems Defense
CMP-246 Operating Systems
CMP-261 Digital Forensics II
CMP-271 Mobile App Programming
CMP-280 Software Engineering

Computer Information Systems Credits 0

Digital Media Technology
  MED-110 Multimedia I
  MED-113 Multimedia II
  MED-119 Digital Media Production
  MED-210 Digital Video Editing
  MED-213 Multimedia Authoring and Design
  MED-220 Animation
  MED-240 Advanced Animation
  COM-114 Media Aesthetics
  CMP-108 Game Design Concepts
  CMP-126 Computer Technology and Applications
  CMP-239 The Internet and Web Page Design
  CMP-244 Web Design II
  CMP-245 Web Design Tools
  CMP-250 Game Production

Digital Media Technology Credits 0

Telecommunications
  TEL-107 Computers and Data Networks
  TEL-110 Routing I (CISCO)
  TEL-120 Routing II (CISCO)
  TEL-220 Routing III (CISCO CCNA3 & CCNA4)
  TEL-233 Network Operating Systems
  ELT-110 Digital Principles
  ELT-209 Advanced Digital and Microprocessors
  CMP-128 Computer Science I

Telecommunications Credits 0

Electronic Technology
  ELT-110 Digital Principles
  ELT-115 Active Circuit Components
  ELT-201 Electricity and Electronics
  ELT-213 Active Circuit Design
  ELT-215 Industrial Electronics
  ELT-231 Electronic Communication Systems
  ENR-132 Introduction to Experimentation and Design
  CMP-128 Computer Science I
  TEL-110 Routing I (CISCO)

Electronic Technology Credits 0

Mechanical Technology
  ENR-117 Computer-Aided Drafting I
  ENR-118 Computer-Aided Drafting II
  ENR-132 Introduction to Experimentation and Design
MAT-113  Applied Calculus
MEC-104  Statics
MEC-141  Strength of Materials for Engineering Technology
MEC-155  Mechanical Components
MEC-236  Machine Design

Mechanical Technology Credits  0

Electro/Mechanical Technology
ELT-110  Digital Principles
ELT-201  Electricity and Electronics
ELT-210  Electronic Fabrication
ENR-117  Computer-Aided Drafting I
ENR-132  Introduction to Experimentation and Design
MEC-110  Materials for Engineering Technology
MEC-141  Strength of Materials for Engineering Technology
MEC-155  Mechanical Components
MEC-236  Machine Design
TEL-110  Routing I (CISCO)

Electro/Mechanical Technology Credits  0

Fire Science Technology
FST-101  Introduction to Fire Science
FST-102  Fire Prevention and Related Codes
FST-201  Fire Service Management
FST-202  Hazardous Materials
FST-204  Fire Protection, Building Construction
FST-210  Current Issues in Fire Science/ Capstone Experience

Diversity/Global Perspective (3 Credits)
FST or CJS (restricted elective 16 credits)

Fire Science Technology Credits  0

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-000. Technology Literacy Test. 0 Credits.
LECT hrs
Technology Literacy Test.

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 Information Technologies Department majors.

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 afford the student reinforcement and mastery of information security terminology and concepts.

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. Not for Information Technologies Department majors. Students will not receive credit towards graduation for more than one of the following courses: CMP-126, CMP-135, or BUS-119.
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.

LECT 2 hrs, LAB 2 hrs
This is a fundamental course in problem solving and programming. This course introduces concepts such as how to solve problems by designing and implementing algorithms using a popular programming language. Topics include: pseudocode, algorithms, variables, constants, using decisions and loop structures to construct effective code, using built-in functions, creating functions and modules, and simple debugging techniques for detecting errors. Use of real-world problems in Web Development, Cybersecurity and Data Science are explored. No prior programming experience is required.
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-149. Critical Game Play. 3 Credits.
LECT 2 hrs, LAB 1 hr
This is an introductory course designed to increase games literacy and foster a shared understanding of the history of games, culturally and aesthetically. A thorough knowledge of the games that have shaped this industry is integral for all students considering entering the field. The class covers a wide spectrum of digital and analogue games. Students will take part in discussions and lectures. They will compose a short analyses of different games and justify their stances in group-wide presentations. The primary activity of the class is critical play - playing games and analyzing them in order to better understand the medium on a personal and professional level.
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-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-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-237. Visual Basic (VB.Net). 3 Credits.
LECT 3 hrs, LAB 1 hr
This course is an introduction to computer architecture and 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-239. The Internet and Web Page Design. 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-241. Database Programming (SQL). 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-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-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-255. Linux. 4 Credits.**
LECT 3 hrs, LAB 1 hr
This is a hands-on course in the administration of a Linux Operating System. Students utilize the command line interface to control the operating system and its utilities. Focus is placed on the file system, user system, file security, process and job management, X-Windows, shells and shell scripting. A POSIX-compliant shell, such as ash, dash, bash or ksh, is introduced. Concepts include redirection, piping, and regular expressions. Upon successful completion of this course, students are proficient in using the Linux operating system, with combined lecture and lab exercises focusing on basic/intermediate skills essential to an IT professional.

Prerequisites: CMP-128
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-263. Web Development Workflow. 4 Credits.**
LECT 3 hrs, LAB 2 hrs
This course provides students with cutting edge Web development skills to create and maintain Web sites that are modern, responsive, and dynamically delivered across a wide range of devices. Students learn leading Web design and development tools including current industry standard Web interactive tools, Git, JQuery Framework, and content management systems. Instruction and practice on available platforms provide seamless integration and unified interface across all tools to streamline Web development from local development to staging to production. Students will develop competence in the use of industry-leading development tools in building a current, engaging, and dynamic Web site.

Corequisites: CMP-239 or MED-110 or GRD-108
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-280. Software Engineering. 3 Credits.
LECT 2 hrs, LAB 2 hrs
Software engineering practices are examined in the context of the system development life cycle, comparing traditional structured approach and the object-oriented approach, with the main focus on object-oriented approach. Topics include user stories, use cases, object-oriented modeling, comprehensive project management, the Unified Modeling Language (UML) diagrams, Agile techniques, and user-interface design. Class projects provide students with practice in developing soft skills necessary to work as part of a team. Students participate in a semester-long team project to design an application using system analysis and design techniques.
Prerequisites: CMP-128 and one of the following: CMP-129, CMP-150, or CMP-237
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.

ELT-100. Circuit Analysis DC/AC. 3 Credits.
LECT 2 hrs, LAB 2 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/equivalent and ENR 119 and ENR-124 OR MAT-110/equivalent and ENR-132 OR MAT-123
Additional Fees: Course fee applies.

ELT-102. Circuit Measurement and Fundamentals. 1 Credit.
LAB 2 hrs
An introductory course in electrical circuit analysis and measurement. This course will cover topics in DC and AC circuits, as well as the instruments needed to properly characterize the behavior of these types of circuits. This course is required by the majors in the Electronics Engineering Technology and the Biomedical Equipment Options, and will serve as a supplement to material covered in the Circuit Analysis course.
Corequisites: ELT-100
Additional Fees: Course fee applies.
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 OR ELT-100 AND ELT-102
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: 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
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 OR ELT-100 AND ELT-102
Additional Fees: Course fee applies.

ELT-239. Cooperative Work Experience Electronics Engineering Technology. 3 Credits.
LECT 1 hr, LAB 4 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 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.

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.
Prerequisites: ELT-200 and permission of department chair
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 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 or ENR-121
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-130. Introduction to Engineering. 1 Credit.
LECT 1 hr
This course provides the entering engineering student with an overview of the engineering profession and the design process. In addition this course is designed to assist the first year engineering science student in their adjustment and success with the college experience. Topics discussed include the engineering course of study, academic advisement and transfer process, types of engineering disciplines, solving techniques, academic expectations, time management and study skills.

ENR-132. Introduction to Experimentation and Design. 3 Credits.
LECT 2 hrs, LAB 1 hr
A required course in the Engineering Technology programs that introduces students to the field of engineering. Students will be introduced to experimental techniques, data collection and representation, as well as the proper method for documenting experimental results. The course will also cover topics that will help students succeed in their field of study and in their college experience.
Corequisites: MAT-016 or placement into MAT 110, or beyond 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
Prerequisites: ENR-223
Additional Fees: Course fee applies.
This laboratory course covers a variety of tensile stress-strain, impact and hardness tests, as well as shear stress-strain and the techniques of report writing.
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. 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 or MAT-110 and ENR-132 or MAT-123.

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. Several projects throughout the course give students hands-on experience with a variety of digital multimedia tools.
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-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 or COM-211
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-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.
COOP 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, kinematation, 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 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-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. 3 Credits.
LECT 2 hrs, LAB 3 hrs
The course introduces basic routing principles in a network environment, supplemented with industry-standard labs, such as those provided by CISCO. 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, 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-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.

Virtual Reality

The AAS degree in Virtual Reality is a pioneering program for artists and creative technologists. Students will learn to create immersive content and experiences for a wide range of industries in an exploding market projected to grow to a $40 billion industry by 2020.

Those enrolled in the Virtual Reality program will study in a range of areas including photography, digital imaging, computer science and narrative storytelling in virtual, augmented and mixed reality. This program emphasizes concept-based approaches to this new and exciting form to create engaging experiential projects. Over the course of the program, students will learn the tools to shape technology creatively.

Degrees

General Education Foundation

COMMUNICATION 6
ENG-111 English Composition I
ENG-112 English Composition II
MATH-SCIENCE-TECHNOLOGY 8
MAT-120 Mathematics for Liberal Arts or MAT-130 Probability and Statistics
Laboratory Science
SOCIAL SCIENCE OR HUMANITIES 3
Choose from General Education course list
GENERAL EDUCATION COURSES 3
PHO-113 History of Photography
General Education Foundation Credits 20

Photography & Imaging Core (40 CR)

PHO-115 Photography I 3
CMP-128 Computer Science I 3
CMP-129 Computer Science II 3
CMP-150 Game Programming 3
PHO-204 Digital Imaging I 3
IMG-101 Introduction to Computer Generated Art 1
IMG-112 X-R Principles 3

PHO-117 Color Photography I 3
PHO-216 Studio Lighting I 3
PHO-224 Digital Imaging II 3
IMG-214 X-R Studio 3
IMG-201 Narrative and Storytelling in X-R 3
PHO-226 Portfolio Preparation 3
PHO-227 Professional Studio Photography 3
Photography & Imaging Core (40 CR) Credits 40
Total Credits 60

Faculty

Nieves Gruneiro-Roadcap
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Special Projects, Photography Technology
Assistant Professor, Art and Design
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B.A., The City College of the CUNY
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Courses

PHO-101. Introduction to Analog Photography Techniques. 1 Credit.
LECT 1 hr
This 7-week, 1-credit introductory course introduces students to B&W photography darkroom techniques. Students will learn how to operate an analog 35mm film camera, develop B&W negative film and create B&W darkroom prints of appropriate density and contrast. Students should own or have unrestricted access to an analog 35mm film camera. Note: This course is offered only in the Fall semester. Photography majors taking a Photography 1 course during Fall semester must take this course as a co-requisite. If a photo major takes their Photography 1 course in the Spring or Summer semester, this course must be taken prior to enrolling in Photography 2 (PHO-116). Special permission required for non-photo majors.
Corequisites: PHO-115.

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.

Prerequisites: PHO-115 and (MAT-006 or MAT-007).

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 PHO-204.

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. Photography Technology majors must take PHO-115 and PHO-101 in their first semester.

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-101 and 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-204

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.

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 covered. 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 1 hr, LAB 4 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.

Visual Arts
AFA Visual Arts

The Visual Arts program 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 develop an understanding of the visual arts through the intensive study of technique, history, theory, concept and hands-on approaches in studio work, and may take studio electives in a variety of media. The Visual Arts curriculum is designed for transfer into BFA 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 (https://www.ccm.edu/academics/divdep/liberal-arts/department-of-art-and-design/visual-arts-education-specialization/) at CCM.

For more information, visit the Visual Arts (http://www.ccm.edu/academics/divdep/department-of-art-and-design/visual-arts/) website.

Degrees
AFA Visual Arts
(P4140)

General Education Foundation
Communication 6
ENG-111 English Composition I
ENG-112 English Composition II
or COM-10 Speech Fundamentals
Faculty

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Dr. Brian Sahotsky
Assistant Professor, Art and Design
Ph.D., University of California
M.A., University of Colorado

Courses

ART-102. Introduction to Computer for Fine Art. 1 Credit.
LECT 1 hr
This 7-week, 1-credit introductory course will teach Fine Art Students the essential elements of the Photoshop interface. Students will learn basic retouching as well as photo editing, including how to correct, enhance, and distort digital images of their art work, and prepare those images for use in print and on the web.

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 and ART-130 or DSN-108.
Additional Fees: Course fee applies.

ART-132. Three Dimensional Design. 3 Credits.
LECT 2 hrs, LAB 3 hrs
In Three Dimensional Design, students learn, 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 and ART-130 or DSN-108
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-135. Art Appreciation. 3 Credits.
LECT 3 hrs
Art Appreciation introduces students to the creative processes and techniques used in the diverse media of the visual arts. Through the study and analysis of artworks, students are introduced to visual literacy principles to examine and understand historical, global, economic, cultural and conceptual contexts. Students will correlate the arts with a general history of culture, develop a multicultural perspective of the arts, and learn to understand its application to our contemporary visual culture and its uses. Students will discover the human impulse to create art, and how artistic expression addresses universal humanistic themes.

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-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 1 hr
Portfolios 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-131, and ART-130 or DSN-108.
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-250. Beginning Glassblowing I. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course provides a basic introduction to hot glassblowing. Through a series of lectures, demonstrations and exercises students will be introduced to a variety of techniques used to produce functional and artistic glass objects. Students will be introduced to the history of glassmaking and its development to contemporary equipment and practice.
Prerequisites: ART-250
Additional Fees: Course fee applies.

ART-251. Intermediate Glassblowing. 3 Credits.
LECT 2 hrs, LAB 1 hr
This course provides advanced topics in hot glassblowing. It condenses years of knowledge into a series of explanations, demonstrations and exercises. Students will continue their knowledge of various methods and techniques giving them the experience to create both functional and artistic glass objects. Students will be briefed in advanced techniques of glass making as it relates to contemporary equipment and practice.
Prerequisites: ART-250
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.

XR Certificate (Virtual, Augmented and Mixed Reality)

The XR Certificate provides strong foundational skills in the emerging technologies of augmented, virtual and mixed reality. The courses are focused on combining creative and technical skills to design and develop content for a range of applications and industries.

Certificate

| IMG-101 | Introduction to Computer Generated Art | 1 |
| IMG-112 | X-R Principles | 3 |
| IMG-214 | X-R Studio | 3 |
| IMG-201 | Narrative and Storytelling in X-R | 3 |

Total Credits 10

Faculty

Nieves Gruneiro-Roadcap
Chairperson, Art and Design
Associate Professor, Art and Design
M.F.A., Mason Gross School of the Arts, Rutgers University
B.F.A., New Jersey City University
EH 101 973-328-5435 ngruneiro@ccm.edu

Hrvoje Slovenc
Special Projects, Photography Technology
Assistant Professor, Art and Design
M.F.A., Yale School of Art
Courses

**IMG-101. Introduction to Computer Generated Art. 1 Credit.**
LECT 1 hr
This 7-week, 1-credit introductory course is an introduction to software as a tool for visual artists. Computational art frameworks, 3D graphics, computer vision and basic physical computing are among the topics explored throughout the semester.

**IMG-112. X-R Principles. 3 Credits.**
LECT 1 hr, LAB 2 hrs
This studio course will introduce students to the principles of photographic design in artificial reality (AR) (virtual, augmented and mixed reality). Students will build AR spaces using conventional photographs. They will also apply principles of photographic design to 360 photography and 360 videos. Through a series of assignments, students will be prepared to apply principles of photographic design to complex AR scenes.

**IMG-201. Narrative and Storytelling in X-R. 3 Credits.**
LECT 1 hr, LAB 4 hrs
This studio course focuses on creating documentary content for emerging platforms. In this course we delve into how to create content for, and engage with viewers as photographers, artists, and visual communicators. Course requirements may include extensive use of Blackboard and other online components.

**IMG-214. X-R Studio. 3 Credits.**
LECT 1 hr, LAB 4 hrs
This is a studio course that focuses on practices and paradigms for photorealistic virtual and mixed reality content designed for mobile and web platforms. Course requirements may include extensive use of Blackboard and other online components.

**Prerequisites:** IMG-112.

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. 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 on the left side of this page.

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:

<table>
<thead>
<tr>
<th>Fall Programs</th>
<th>Winter Programs</th>
<th>Spring Programs</th>
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</thead>
<tbody>
<tr>
<td>Women's Volleyball</td>
<td>Women's Basketball</td>
<td>Softball</td>
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<tr>
<td>Women's Soccer</td>
<td>Men's Basketball</td>
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<td>Golf</td>
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<td></td>
<td></td>
<td>E-Sports</td>
</tr>
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</table>

**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 20 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.

**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.

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**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 school show 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, 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 Vending Area. Additionally, the Office of Campus Life, the Office of Counseling and Student Success, the Office of Career Services and Cooperative Education, the Women’s Center, the Office of Student Development and Enrollment Management, Work Force Development, the Hospitality Program 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 study guides and reference books. It also has an extensive assortment of clothing, novelties, supplies, greeting cards, stationary, 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

Cohen Café
The Cohen Café features “Create Burgers & Chicken”, “Create Salads & Wraps” and an assortment of “Grab and Go” items for the busy student including pre-made 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 7:00 p.m. Friday, 7:30 a.m. to 2:00 p.m.

Summer Hours for the Cohen Café
Monday-Thursday, 7:30 a.m. to 2 p.m. Friday, CLOSED

Vending machines are also available around the clock.

Learning Resource Center Café
The LRC Café proudly brews Starbucks coffee. Assorted sandwiches, salads, snack and cold beverages are also available.

Fall and Spring Hours for the LRC Café
Monday-Thursday, 7:30 a.m. to 7 p.m. Friday, 7:30 a.m. to 2:00 p.m.

Summer Hours for the LRC Café
Monday-Thursday, 7:30 a.m. to 2 p.m. Friday, 7:30 a.m. to 2:00 p.m.

Hours for the Cohen and LRC cafés are limited during exam weeks, spring and holiday breaks. Please check postings or www.dineoncampus.com/ccm for any time changes during those days.

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/student-life/campus-life/student-club-listing/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/student-life/upcoming-events/.

Course Listings
• Accounting (ACC) (http://catalog.ccm.edu/credit/courselistings/acc/)
• American Sign Language (ASL) (http://catalog.ccm.edu/credit/courselistings/asl/)
• Arabic (ARA) (http://catalog.ccm.edu/credit/courselistings/ara/)
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

Curriculum Requirements

- Art (ART) (http://catalog.ccm.edu/credit/courselistings/art/)
- Biology (BIO) (http://catalog.ccm.edu/credit/courselistings/bio/)
- Business (BUS) (http://catalog.ccm.edu/credit/courselistings/bus/)
- Chemistry (CHM) (http://catalog.ccm.edu/credit/courselistings/chm/)
- Chinese (CHI) (http://catalog.ccm.edu/credit/courselistings/chi/)
- College Student Success (CSS) (http://catalog.ccm.edu/credit/courselistings/css/)
- Communication (COM) (http://catalog.ccm.edu/credit/courselistings/com/)
- Computer Information Systems (CMP) (http://catalog.ccm.edu/credit/courselistings/cmp/)
- Criminal Justice (CJS) (http://catalog.ccm.edu/credit/courselistings/cjs/)
- Dance (DAN) (http://catalog.ccm.edu/credit/courselistings/dan/)
- Design (DSN) (http://catalog.ccm.edu/credit/courselistings/dsn/)
- Drama (DRA) (http://catalog.ccm.edu/credit/courselistings/dra/)
- Early Childhood Education (CDC) (http://catalog.ccm.edu/credit/courselistings/cdc/)
- Economics (ECO) (http://catalog.ccm.edu/credit/courselistings/eco/)
- Education (EDU) (http://catalog.ccm.edu/credit/courselistings/edu/)
- Electronics Engineering Technology (ELT) (http://catalog.ccm.edu/credit/courselistings/elt/)
- Engineering Science and Engineering Technology (ENR) (http://catalog.ccm.edu/credit/courselistings/enr/)
- English (ENG) (http://catalog.ccm.edu/credit/courselistings/eng/)
- English for Speakers of Other Languages (ESL) (http://catalog.ccm.edu/credit/courselistings/esi/)
- Fire Science Technology (FST) (http://catalog.ccm.edu/credit/courselistings/fst/)
- French (FRE) (http://catalog.ccm.edu/credit/courselistings/fre/)
- German (GER) (http://catalog.ccm.edu/credit/courselistings/ger/)
- Graphic Design (GRD) (http://catalog.ccm.edu/credit/courselistings/grd/)
- Health and Wellness (HES) (http://catalog.ccm.edu/credit/courselistings/hes/)
- Health Education (HED) (http://catalog.ccm.edu/credit/courselistings/hed/)
- Hebrew (HBR) (http://catalog.ccm.edu/credit/courselistings/hbr/)
- History (HIS) (http://catalog.ccm.edu/credit/courselistings/his/)
- Hospitality Management (HOS) (http://catalog.ccm.edu/credit/courselistings/hos/)
- Human Services (HMS) (http://catalog.ccm.edu/credit/courselistings/hms/)
- International Studies (ISA) (http://catalog.ccm.edu/credit/courselistings/isa/)
- Italian (ITL) (http://catalog.ccm.edu/credit/courselistings/itl/)
- Japanese (JPN) (http://catalog.ccm.edu/credit/courselistings/jpn/)
- Landscape and Horticultural Technology (LHT) (http://catalog.ccm.edu/credit/courselistings/lht/)
- Latin (LAT) (http://catalog.ccm.edu/credit/courselistings/lat/)
- Marketing (MKT) (http://catalog.ccm.edu/credit/courselistings/mkt/)
- Mathematics (MAT) (http://catalog.ccm.edu/credit/courselistings/mat/)
- Mechanical Engineering Technology (MEC) (http://catalog.ccm.edu/credit/courselistings/mec/)
- Media Studies (MED) (http://catalog.ccm.edu/credit/courselistings/med/)
- Music (MUS) (http://catalog.ccm.edu/credit/courselistings/mus/)
- Nursing (NUR) (http://catalog.ccm.edu/credit/courselistings/nur/)
- Packaging Design (PKG) (http://catalog.ccm.edu/credit/courselistings/pkg/)
- Philosophy (PHL) (http://catalog.ccm.edu/credit/courselistings/phl/)
- Photography (PHO) (http://catalog.ccm.edu/credit/courselistings/pho/)
- Physics (PHY) (http://catalog.ccm.edu/credit/courselistings/phy/)
- Political Science (POL) (http://catalog.ccm.edu/credit/courselistings/pol/)
- Portuguese (PTG) (http://catalog.ccm.edu/credit/courselistings/ptg/)
- Psychology (PSY) (http://catalog.ccm.edu/credit/courselistings/psy/)
- Public Administration (PUB) (http://catalog.ccm.edu/credit/courselistings/pub/)
- Public Health (PBH) (http://catalog.ccm.edu/credit/courselistings/pbh/)
- Radiography (RAD) (http://catalog.ccm.edu/credit/courselistings/rad/)
- Respiratory Therapy (RTH) (http://catalog.ccm.edu/credit/courselistings/rth/)
- Russian (RUS) (http://catalog.ccm.edu/credit/courselistings/rus/)
- Science (SCI) (http://catalog.ccm.edu/credit/courselistings/sci/)
- Sociology (SOC) (http://catalog.ccm.edu/credit/courselistings/soc/)
- Spanish (SPN) (http://catalog.ccm.edu/credit/courselistings/spn/)
- Telecommunications Systems Technology (TEL) (http://catalog.ccm.edu/credit/courselistings/tel/)
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>
<th>AA credits</th>
<th>AS credits</th>
<th>AAS, AFA, AS-Nursing credits</th>
<th>Certificate credits</th>
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<tbody>
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<td>Communication (Written and Oral Com.)</td>
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<tr>
<td>Mathematics</td>
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<td>Science</td>
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<tr>
<td>Technology</td>
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<tr>
<td>Social Science (Society and Human Behavior)</td>
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<td>Humanities</td>
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<td>Humanistic Perspective</td>
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<td>Social Science or Humanities</td>
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</table>

General Education Courses

COMMUNICATION

COM-109 Speech Fundamentals 4 3
ENG-111 English Composition I 3
ENG-112 English Composition II 3
ENG-131 English Composition I Honors 3 3
ENG-132 English Composition II Honors 2 3

MATHEMATICS
MAT-110 College Algebra 3
MAT-113 Applied Calculus 4
MAT-117 Mathematical Analysis for Business and Economics 3
MAT-118 Calculus With Application to Business And Economics 3
MAT-120 Mathematics for Liberal Arts 2 4
MAT-123 Precalculus 4
MAT-124 Statistics 4 3
MAT-130 Probability and Statistics 4 3
MAT-131 Analytic Geometry and Calculus I 4
MAT-132 Analytic Geometry and Calculus II 4
MAT-183 Honors Probability and Statistics 4 4
MAT-210 Probability and Statistics II 4
MAT-228 Linear Algebra 3
MAT-230 Calculus III 4
MAT-232 Differential Equations 3

SCIENCE
BIO-101 Anatomy and Physiology I 4
BIO-102 Anatomy and Physiology II 4
BIO-121 General Biology I 4
BIO-122 General Biology II 4
BIO-123 Cell Biology 4
BIO-127 Biology of Environmental Concerns 1, 3 4
BIO-132 Concepts in Biology 1, 2 4
BIO-129 Introduction to Botany 4
BIO-133 Human Biology 1, 2 4
BIO-180 General Biology I - Honors 4
BIO-181 General Biology II - Honors 4
BIO-201 Genetics 4
BIO-202 Ecology 4
BIO-215 Microbiology 3 4
BIO-223 Cell and Molecular Biology 3 4
CHM-105 Forensic Science 1, 3 4
CHM-117 Introductory Chemistry Lecture
 & Introductory Chemistry Laboratory 1 4
CHM-125 General Chemistry I - Lecture
 & General Chemistry I - Laboratory 4
CHM-127 General Chemistry II - Lecture
 & General Chemistry II - Laboratory 4
CHM-212 Biochemistry 4
CHM-231 Organic Chemistry I - Lecture
 & Organic Chemistry I - Laboratory 4
CHM-233 Organic Chemistry II - Lecture
 & Organic Chemistry II - Laboratory 4
PHY-103 Concepts of Physics 1 4
PHY-118 Meteorology 1 4
PHY-125 General Physics I - Lecture
 & General Physics I Laboratory 4

TECHNOLOGICAL COMPETENCY
CMP-101 Computer Information Literacy 1
CMP-126 Computer Technology and Applications 4 4
CMP-135 Computer Concepts With Applications 3

SOCIAL SCIENCE
ECO-113 Elements of Economics 3
ECO-120 Economics and Economic Issues 3
ECO-211 Principles of Economics I Macroeconomics 3
ECO-212 Principles of Economics II Microeconomics 3
POL-111 American Government 3
POL-231 State and Local Government 3
POL-240 International Politics 3
PSY-113 General Psychology 4 3
PSY-180 General Psychology - Honors 3
PSY-213 Child Psychology 3
PSY-214 Adolescent Psychology 3
SOC-108 Cultural Geography 3
SOC-120 Principles of Sociology 3
SOC-180 Principles of Sociology - Honors 3
SOC-215 Physical Anthropology 3
SOC-216 Cultural Anthropology 3
SOC-217 Archaeology 3

HUMANITIES
ARA-111 Elementary Arabic I 3
ARA-122 Elementary Arabic II 3
ARA-211 Intermediate Arabic I 3
ART-114 Contemporary Art 3
ART-116 American Art 3
ART-133 Art History I 4 3
ART-134 Art History II 4 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
CHI-111 Elementary Chinese I 3
CHI-112 Elementary Chinese II 3
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<td>The Middle Ages</td>
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Degree Choices

Degree Programs

County College of Morris (CCM) offers four degrees: the Associate of Arts, the Associate of Fine Arts, the Associate of Science and the Associate of Applied Science. These degrees are offered in several specialized fields.

The Associate of 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 of 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 of 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 of 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/records-and-registration/).

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

Credit-bearing experiential learning, 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 to identify positions that are commensurate with the goals of the instructional program, the needs of the employer and the skills of the student.

A student interested in participating in an experiential learning opportunity must:

- Be matriculated in a County College of Morris (CCM) major that offers experiential learning, cooperative education and/or internship experiences
- Have completed most of the coursework in their major at CCM
- Have a cumulative average of 2.0 or better, and
- Have the approval of their academic department

Experiential learning, 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

Students who wish to learn more about cooperative education or internships should contact the Office of Career Services or speak with their department chairs.

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 East 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 Education

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 education classes: online, hybrid and virtual campus. 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 Education website at www.ccm.edu/vclassrooms (http://www.ccm.edu/vclassrooms/) or call 973-328-5332.

Online Courses (ONL)

A course where all instruction traditionally provided in class is replaced with instruction online. However, an online course may require an in-person student orientation and/or proctored test/assignments.

Hybrid (HYBD)

Instruction is provided both in-class and online (in any combination). Face-to-face meeting may include lectures, group work, presentations etc. Students in hybrid courses should log into Blackboard on the first day of the semester and not wait until the first on campus meeting.

Virtual Campus (VIR)

Fully online courses, certificates, or programs designed to provide students quality distance education consistent with the Virtual Campus’ mission statement. There is no on campus requirement. Please see vclearning@ccm.edu for additional information.

Governance

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.

Thomas A. Pepe, Chair*
Jeffrey M. Advokat, Esq., Vice Chair
Paul R. Licitra, Treasurer*
Dr. Barbara L. Hadzima, Secretary*
Dr. Angelica Allen-McMillan
Maria Aprile, CPA
George E. Dredden, Ill
Jack N. Frost, Jr., Esq.
George J. Milonas ’98
Dr. Joseph S. Weisberg*
Natalie Otero Lopez, ‘19, Alumni Trustee
Sandra Greiger,, Trustee Emerita
W. Thomas Margetts, Trustee Emeritus

as of January 2020
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
William McElroy ’83, Chair
Eileen Paragano ’91, Vice Chair
John Beyel, Esq., Secretary
Edward Nelson ’72, Treasurer
Professor Joseph Bilotti ’88, Faculty Representative
Stephen Eulie ’81
Carol Fitzpatrick ’86
Thomas F. Hayes
Lori Pimenta
Everton Scott
Eric Sequin
MJ Sully
Patrick Swaszek ’05
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Gil Zweig

Morris County Board of Chosen Freeholders
Deborah Smith, Freeholder Director
Stephen Shaw, Deputy Director
Douglas R. Cabana
John Krickus
Kathryn DeFillippo
Thomas J. Mastrangelo
Tayfun Selen

as of February 2020

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 is provided in the navigation area on the left side of this page.

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 and assign a 'Proxy' on their Titans Direct account. By assigning a proxy, the student is allowing a third party to view certain information on their student record. The proxy permission will expire on December 31st of every year. It is the student's responsibility to assign proxy permissions again after the December 31st expiration date.

Animals
County College of Morris (CCM) generally limits the presence of privately owned animals on campus. However, the college permits
Service Animals on campus when they are doing work or performing tasks required by a disabled student, employee or visitor.

Service Animals allowed on campus are as defined in the regulations implementing the Americans with Disabilities Act (ADA). The work or task that a Service Animal has been trained to provide must be directly related to the person's disability. Animals whose sole function is to provide emotional support, comfort, therapy, companionship, therapeutic benefits or to promote emotional well being do not qualify as Service Animals under the ADA regulations.

Service Animals are not required to be registered with the Office of Accessibility Services. However, the animal must display the proper licensing tags or documents related to the animal's health, including rabies vaccines, in a manner where they can be seen from a distance of 25 feet. Animals must be directly related to the person's disability. Animals whose sole function is to provide emotional support, comfort, therapy, companionship, therapeutic benefits or to promote emotional well being do not qualify as Service Animals under the ADA regulations.

For the college's full policy on Service Animals, go to www.ccm.edu/accessibility-services/service-animals-policy. Also if you have any questions, you can contact Accessibility Services at aso@ccm.edu or 973-328-5284.

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, other than Service 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 are located in Parking Lot 5 to lock bikes. You must provide your own locking device.

Campus Parking

All student, faculty and staff 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 and across from Parking Lot 10), 24 hours a day, seven days a week. An Online Permit Registration service is also 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. Decals may not be switched from vehicle to vehicle. Each vehicle must have its own decal.

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 and 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 tow-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 sponsoring 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.

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**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 that the hold has been lifted.

**Sexual Harassment Policy**

County College of Morris reaffirms its desire to create an academic and work environment for all students, faculty and staff that is not only responsible but also supportive and conducive to the achievement of education and 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 environment. 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

About Us

Located on 222 acres of rolling terrain in Randolph, County College of Morris (CCM) has been meeting the educational and training needs of residents and businesses in Morris County for 50 years. 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 now CCM graduates more than 1,000 students each year.

CCM is focused on excellence in teaching and lifelong learning through the delivery of exceptional programs and services that reflect a dedication to inclusiveness and diversity, educational advancement, cultural enrichment and workforce development. A dedicated faculty engaged in research and practice provides CCM students with a learning environment that has produced one of the highest graduation and transfer rates among New Jersey’s community colleges.

Today, the college offers 50 associate degree programs, along with a full slate of certificate and professional development programs. The college holds more than 150 transfer agreements and its graduates annually transfer to the state’s and nation’s best four-year institutions.

CCM also provides multiple opportunities to be engaged in an active student life program. In particular, there are more than 50 student clubs and organizations, award-winning student newspaper and literary magazine, and nine intercollegiate athletic sports programs for men and women.

Included among its distinctions, CCM was the first community college in New Jersey to be named a National Center of Academic Excellence in Cyber Defense Education by the National Security Agency and Department of Homeland Security. Along with a strong STEM foundation, the college is known for the quality of its liberal arts, performing arts, health science, and culinary and hospitality programs. Over the last several years, the college has been rated by PayScale as first in the state for associate degree holders who earn the highest salaries.

CCM is fully accredited by the Middle States Commission on Higher Education. Its other accreditations include Accreditation Council for Business Schools & Programs, Engineering Technology Accreditation Commission of ABET, New Jersey Board of Nursing and Accreditation Commission for Education in Nursing, Commission on Accreditation for Respiratory Care and the Joint Review Committee on Education in Radiologic Technology.

Within recent years, CCM has experienced significant growth in its course and program offerings. In 2018, responding to labor force demands and the interests of students, the college launched programs in animation and virtual reality and expanded its cyber security offerings to high school students. It also has expanded and updated its facilities, including the construction of a LEED certified Horticultural and Technology building and a Music Technology facility, along with the renovation of its Learning Resource and Media centers.

In Fall 2020, the college was scheduled to open a Center for Advanced Manufacturing and Engineering. As a result of its 50th Anniversary Forward campaign, the college also will be establishing The Paragano Family Foundation Healthcare Simulation Center, which will allow for the development of new healthcare programs.

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
http://www.msche.org/
(June 2018)

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 (http://www.acbsp.org/page/main/)


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 (http://www.njconsumeraffairs.gov/nur/)

Accreditation Commission for Education in Nursing
3343 Peachtree Road NE, Suite 850
Atlanta, GA 30326
404-975-5000
http://acenursing.org/

The Respiratory Therapy program is accredited by:

Commission on Accreditation for Respiratory Care
1248 Harwood Road
Bedford, TX
76021-4244
817-283-2835
www.coarc.com (http://www.coarc.com/)
The Radiography 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

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.

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, along with a planetarium, were completed. Through the 1970s, enrollment at the college continued to grow as CCM established itself as one of the premier community colleges in New Jersey. In 1982, the college reached its highest enrollment of 12,012 credit students, with thousands of additional individuals enrolled in certificate programs. That same year the Dalrymple House was renovated.

After two decades of leadership, President Masten retired in 1986 and 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 buildings. The 20,417 square-foot expansion added classrooms, laboratories, faculty offices, student lounges and an expanded cafeteria. In 1997, the college added a six-lane aquatic facility to the Health and Physical Education Building that is used by the college and local high schools.

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 Advisement, 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 allowed the college to increase classroom space to meet growing academic needs and provided for a new access road to and from Route 10.

In 2014, the college completed an extensive renovation to the Masten 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. Also in 2014, Rutgers entered into a partnership with the college to offer bachelor degree programs on the CCM campus.

In 2015, the Media Center, located within the LRC, was renovated and renamed in honor of late Assemblyman Alex DeCicco. 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.

In 2017, the college became the first community college in New Jersey to gain designation as a National Center of Academic Excellence in Cyber Defense Education by the National Security Agency and Department of Homeland Security.

In 2018, as part of the college’s 50th anniversary celebrations, CCM launched a historic $2.1 million FORWARD Capital Campaign focused on funding programs and facility upgrades, including the Paragano Family Foundation Medical Simulation Center, a Cyber Security Suite, an enhanced Culinary Arts Training facility, a new Manufacturing and Engineering building, student scholarships and the Faculty Innovation Fund. Also in 2018, the college developed two new academic programs in animation and virtual reality to meet the demand for employees in these rapidly growing areas.

In early 2019, the college broke ground for the Center for Advanced Manufacturing and Engineering.

Mission and Values Statement

Mission Statement

County College of Morris is committed to excellence in teaching and lifelong learning through the delivery of exceptional programs and services to our students and to the larger community that reflect a dedication to inclusiveness and diversity, educational advancement, cultural enrichment and workforce development.

Values Statement

The college’s commitment to serve the residents and businesses of Morris County and the State of New Jersey and to sustain engaged citizenship within a diverse population of students and community members is reflected in six values:

- A commitment to people, evidenced by a secure, supportive environment responsive to the needs of students, employees and the community
- A commitment to the academic mission of the college, which entails the search for truth and respect for scholarship and learning
- A commitment to honesty and integrity in all endeavors
- A commitment to the stewardship of the public trust
- A commitment to diversity that respects individual differences and upholds the dignity of every person
- A commitment to providing access and services to all regardless of financial, academic, educational or physical challenges

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 2020-21 rate and may increase in the next academic year. For the most up-to-date tuition and fees, check the college’s website at [wwww.ccm.edu](http://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 it 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. Refer to 'Payment Assistance' from the Tuition & Fees page.

Fees (As of Summer 2020)

<table>
<thead>
<tr>
<th>Fee</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident Insurance</td>
<td></td>
</tr>
<tr>
<td>County College of Morris requires all health professional students to carry health insurance.</td>
<td></td>
</tr>
<tr>
<td>Application Fee (non-refundable)</td>
<td>$30</td>
</tr>
<tr>
<td>One time fee, unless you choose not to attend in the academic year in which you apply.</td>
<td></td>
</tr>
<tr>
<td>CLEP Testing Fee</td>
<td>$25</td>
</tr>
<tr>
<td>College Fee (per-credit)</td>
<td>$29</td>
</tr>
<tr>
<td>External Proctor Services</td>
<td>$50 per two-hour block</td>
</tr>
<tr>
<td>Course Fee</td>
<td>Go to <a href="http://www.ccm.edu">www.ccm.edu</a> and search for ‘tuition and fees.’</td>
</tr>
<tr>
<td>Department Exam Fee</td>
<td>$50</td>
</tr>
<tr>
<td>Graduation Fee (non-refundable)</td>
<td>$30</td>
</tr>
<tr>
<td>Graduation candidates are charged a graduation fee.</td>
<td></td>
</tr>
<tr>
<td>I.D. Card Replacement</td>
<td></td>
</tr>
<tr>
<td>First Replacement</td>
<td>$5</td>
</tr>
<tr>
<td>Second Replacement</td>
<td>$10</td>
</tr>
<tr>
<td>Third Replacement</td>
<td>$25</td>
</tr>
<tr>
<td>Late Payment Fee</td>
<td>$40</td>
</tr>
<tr>
<td>Charged to students who fail to have their payment in the Bursar's office by the designated due date. Postmarked dates are not acceptable.</td>
<td></td>
</tr>
<tr>
<td>Make-Up Examination Fee</td>
<td>$15</td>
</tr>
<tr>
<td>Charged to students who miss a final examination and who are permitted to take a make-up examination.</td>
<td></td>
</tr>
<tr>
<td>Registration Fee (per course)</td>
<td>$7</td>
</tr>
<tr>
<td>Reinstatement Fee</td>
<td>$100</td>
</tr>
<tr>
<td>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 classes are assessed a $100 fee.</td>
<td></td>
</tr>
<tr>
<td>Returned Check Fee</td>
<td>$50</td>
</tr>
<tr>
<td>Service Fee (per course)</td>
<td>$10</td>
</tr>
<tr>
<td>Students who completely withdraw after registering for classes or who are deleted from their classes for non-payment are subject to a service fee.</td>
<td></td>
</tr>
<tr>
<td>Technology Fee (per course)</td>
<td>$14</td>
</tr>
<tr>
<td>Online Fee (per course)</td>
<td>$25</td>
</tr>
<tr>
<td>Online with Streaming Video (per course)</td>
<td>$45</td>
</tr>
<tr>
<td>Criminal Background Check</td>
<td>$100</td>
</tr>
<tr>
<td>Accuplacer Re-Testing Fee</td>
<td>$10</td>
</tr>
<tr>
<td>Transcript Fee</td>
<td>$5</td>
</tr>
<tr>
<td>Health Records Transcript Fee</td>
<td>$15</td>
</tr>
</tbody>
</table>

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/wp-content/uploads/FinancialAid/ccmCONSORTIUM-DomesticWeb.pdf)) or the Study Abroad ([Mobility](https://www.ccm.edu/wp-content/uploads/FinancialAid/Consortium_studyabroad.pdf)) program.

Application Process

**At-a-Glance** (view 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, require completion of the Free Application for Federal Student Aid ([FAFSA](https://fafsa.ed.gov/)). FAFSA online url - [www.fafsa.ed.gov](http://www.fafsa.ed.gov). The FAFSA must be filed each academic year and is available October 1st of the preceding year. 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 ([https://www.irs.gov/individuals/get-transcript/](https://www.irs.gov/individuals/get-transcript/)) federal income tax filing period (April) each year. Students and parents who want to apply for Federal Student Aid ([http://studentaid.ed.gov/](http://studentaid.ed.gov/)) must apply for a FSA ID ([https://fsaid.ed.gov/nps/]). 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 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

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 emailing 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 TITANS DIRECT. Items requested must be clear, readable copies, indicating their CCM student identification number on each page. Items requested by us may be downloaded from our forms and worksheets (http://www.ccm.edu/admissions/financialaid/forms-worksheet/) link.

Requirements for Receiving Federal and New Jersey State 1 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/), 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. You must have and submit proof to CCM Admissions Office earning a –
   a. High School diploma (final transcript) or a
   b. General Education Development (GED) Certificate or
6. Not owe a refund on a federal grant or be in default on a federal educational loan.
8. Have class attendance verified prior to the release of all expected funds.
9. 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 TITANS Direct and/or your academic advisor. Attention: Financial aid amounts are subject to change based on courses and credit total registered for each term.
10. 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.
11. 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.
12. 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 (https://studentaid.gov/understand-aid/types/loans/).

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 https://www.ccm.edu/admissions/financialaid/scholarship-application-closed (https://www.ccm.edu/admissions/financialaid/scholarship-application-closed/). (https://www.ccm.edu/admissions/financialaid/financialaidonline-application/)

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://studentaid.gov/understand-aid/types/loans/).
• 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 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 (US Citizen and Eligible Non-Citizens) and NJ Alternative Application for NJ DREAMers (https://www.hesaa.org/Pages/NJAlternativeApplication.aspx) must be filed by State deadlines for eligibility. For current deadline dates visit http://www.hesaa.org/Pages/StateApplicationDeadlines.aspx. (http://www.hesaa.org/Pages/StateApplicationDeadlines.aspx) Additionally, students may view their NJ State eligibility processing status, upload additional documents, respond to ‘Additional Questions’ by way of https://njfams.hesaa.org NJFAMS system.

1 Applicants must be legal New Jersey residents for at least 12 consecutive months prior to receiving New Jersey state grants. 2020-21 NJ State Higher Education Student Assistance Authority (HESAA) FAFSA Filing Deadlines (http://www.hesaa.org/Pages/StateApplicationDeadlines.aspx) - The FAFSA must be RECEIVED by the Federal processor (not postmarked) by the dates below to be considered for the Tuition Aid Grant (TAG), Governor’s Urban Scholarship, NJ STARS and NJ STARS II programs.

2019-2020 TAG Recipients
• Renewal - Fall 2020 and Spring 2021 funding: April 15, 2020
• New Students and Non-Renewal Students
  • New-Non-renewal applicants for Fall 2020 and Spring 2021: September 15, 2020
  • New-Non-renewal applicants for Spring 2021 semester only: February 15, 2021

HESAA Deadlines for completing State grant records (Applicant Information Requests (AIR), State verification, corrections, college code changes, etc.) adherence by the student is required for eligibility:
2020-2021 Academic Year - College Code Change Deadlines
Renewal applicants and Non-Renewal Students:
• Fall 2020: November 1, 2020
• Spring 2021 only: March 1, 2021*
*March 1 or 30 days from initial notification

Educational Opportunity Fund (EOF) grants are awarded to students from educationally and economically disadvantaged backgrounds with demonstrated financial need. Students must complete the FAFSA to be considered. For additional information about EOF visit http://www.ccm.edu/student-life/campus-services/educational-opportunity-fund/what-is-EOF (http://www.ccm.edu/student-life/campus-services/educational-opportunity-fund/what-is-EOF/).

NJ STARS - Tuition Free Scholarships: The New Jersey Student Tuition Assistance Reward Scholarship (NJ STARS (http://www.hesaa.org/Documents/NJSTARS_program.pdf)) is awarded to entering students who graduated in the top 15 percent of their graduating class. Completion of FAFSA by the state deadline is required each school year. Students must enroll full-time in a degree seeking program per term. Out-of-county residents must obtain a “charge-back” from their residential county college to be eligible. Continuing students must earn a minimum 3.0 cumulative grade point average at the end of each term to remain eligible. For the complete NJ STARS requirements, visit www.hesaa.org/ (https://www.hesaa.org/Pages/Default.aspx)

Public Tuition Benefits Program awards dependents of emergency service personnel and law enforcement officers killed in the line of duty, who are enrolled in a New Jersey college or university on at least a half-time basis, the actual cost of tuition up to the highest tuition charged at a New Jersey college or university.

New Jersey (NJ) CLASS Loan Program

The New Jersey College Loans to Assist State Students (NJCLASS (http://www.hesaa.org/Pages/NJCLASSHome.aspx)) is a loan program designed to assist middle-income New Jersey families with financing higher education. It is available to U.S. citizens or permanent resident students attending at least half-time or to their 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/ (http://www.hesaa.org).

Federal Grants

The Federal Pell Grant (https://studentaid.gov/understand-aid/types/grants/PELL) (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) (https://studentaid.gov/understand-aid/types/grants/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

(Completion of the FAFSA is required - www.fafsa.ed.gov (http://www.fafsa.ed.gov/).)

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 http://studentaid.gov (https://studentaid.gov/h/complete-aid-process/). 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.

**Effective 2020-2021 academic year!** Annual completion of the ‘Informed Borrowing Confirmation’ process (The Annual Student Loan Acknowledgment (https://studentaid.ed.gov/)) is required for all Federal subsidized, unsubsidized and Parental PLUS student loan borrowers prior to the disbursement of their loan. The Annual Student Loan Acknowledgement is an online application that will allow students and parents to see how much they have borrowed, preview what their monthly payments might be, and explain concepts such as capitalization and the difference between federal and private loans.

**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 (https://studentaid.gov/understand-aid/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).


**CCAMPIS Subsidy – Child Care Access Means Parents In School Program**

**New! Effective Spring 2020**

The CCAMPIS is a federal grant awarded to County College of Morris. The goal of the program is to assist low-income student parents who are taking 6 or more degree-seeking credits with out-of-pocket expenses for childcare costs. For additional program information and eligibility, visit CCAMPIS-CCM (https://www.ccm.edu/admissions/financialaid/ccampis/) Students wishing to apply for the CCAMPIS grant are required to complete the CCM-CCAMPIS Subsidy Application (https://www.ccm.edu/wp-content/uploads/FinancialAid/CCM-CCAMPIS-SUBSIDY-APPLICATION.pdf) and return it along with all required documents (i.e. ChildCare facility invoice, etc.) to the Financial Aid office.

**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 entire college.

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/records-and-registration/withdrawal-individual-course/.

**Cost of Attendance/Student Budgets**
Student budgets reflect average institutional costs and are adjusted according to federal guidelines and other miscellaneous institutional fees. The 2020-2021 average annual cost of education (https://www.ccm.edu/wp-content/uploads/FinancialAid/Est-FT-Studt-Budgets2021.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>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition and Fees</td>
<td>$4,881.00</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>
<tr>
<td>Total</td>
<td>$12,856.00</td>
</tr>
</tbody>
</table>

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/forms-worksheet/ (http://www.ccm.edu/admissions/financialaid/forms-worksheet/)

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 (https://www.ccm.edu/wp-content/uploads/FinancialAid/CCM_Return-of-FederalFunds-Policy-1.pdf) required by federal regulation:

- Federal aid must be returned to the appropriate program in the following order:

Unsubsidized/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 (15-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.
- 2nd week of the semester – 50 percent of tuition only.

Semesters and courses less than 15 weeks are prorated. All students who withdraw are subject to a service fee per course. Students who withdraw from the college must complete a withdrawal application form available from the Office of Records and Registration or from the website. The date of completion of the withdrawal application will be the date used to determine the percentage of tuition refundable.

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.

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 should review the requirements below to verify their eligibility for lower tuition rates.

A student wishing to establish residency in Morris County must submit all of the following documents showing the same Morris County residential address (not mailing address) to the Office of Student Development and Enrollment Management in the Student Community Center, Room 132. A decision regarding residency status will be made after all of the required documents have been submitted.

If you have any questions regarding these requirements, please call 973-328-5171.

1. Affidavit obtained from the Office of Student Development and Enrollment Management.
2. Any one of the following:
   a. Current lease
   b. Deed
   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.

Any undocumented individual who cannot provide the documents above will be charged the out-of-state tuition rate.

**Tuition (As of Summer 2020)**

<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>$ 144.00</td>
<td>$ 144.00</td>
<td>$ 144.00</td>
</tr>
<tr>
<td>Differential Fee</td>
<td>+ .00</td>
<td>+ 144.00</td>
<td>+ 270.00</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>$ 173.00</td>
<td>$ 317.00</td>
<td>$ 443.00</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 $42 per credit fee hour. Those who live outside the county pay the $42 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).
## Index

### A
- Academic Advisement .......................................................... 11
- Academic Calendar .................................................................. 4
- Academic Information ............................................................ 4
- Academic Progress .................................................................... 6
- Academic Support Services ....................................................... 11
- Access to Student Files ............................................................ 249
- Accessibility Services ............................................................... 12
- Accreditation ........................................................................... 252
- Administration, Faculty and Staff ............................................. 15
- Admissions ............................................................................... 32
- Advanced Electronics Certificate of Achievement ...................... 96
- Advanced Mechanical Analysis Certificate of Achievement ....... 151
- Animals ................................................................................... 249
- Animation ................................................................................ 40
- Areas of Study .......................................................................... 39
- Assembly and Testing Certificate of Achievement .................... 152
- Athletics .................................................................................. 239

### B
- Basic Electronics Certificate of Achievement ............................ 81
- Bicycles .................................................................................... 250
- Books and Materials ................................................................. 254
- Broadcasting Arts and Technology ........................................... 44
- Business Administration .......................................................... 46
- Business Professional ............................................................... 48

### C
- Campus Life .............................................................................. 240
- Campus Parking ........................................................................ 250
- Campus Store ........................................................................... 240
- Career Services and Cooperative Education ............................... 12
- CDA Educational Endorsement Certificate ................................ 51
- Change of Major and Dropping Grades ..................................... 7
- Changes and Cancellations ......................................................... 253
- Chemical Technology ............................................................... 52
- Chemical Technology Environmental Science Option ................ 52
- Chemistry - Science and Math ................................................ 202
- Child and Family Studies .......................................................... 58
- Childcare Specialist Certificate ................................................ 58
- CIS - Game Development Option ............................................. 62
- College Life .............................................................................. 239
- Communication ....................................................................... 59
- Computer Aided Drafting Certificate ....................................... 151
- Computer Information Systems ............................................... 62
- Computer Science ..................................................................... 68
- Conduct Policy ......................................................................... 250
- Cooperative Education and Internships .................................... 247
- Counseling and Student Success .............................................. 12
- Course Information ................................................................... 7
- Course Listings .......................................................................... 241
- Credit Catalog .......................................................................... 4
- Criminal Justice ......................................................................... 73
- Culinary Arts and Science ......................................................... 77
- Culinary Arts Certificate of Achievement .................................. 78
- Curriculum Requirements ......................................................... 242

### D
- Dance ....................................................................................... 81
- Dean’s Honor List ....................................................................... 9
- Degree Choices ......................................................................... 246
- Design ...................................................................................... 85
- Differential Fees ........................................................................ 254
- Digital Media Technology ........................................................ 88
- Digital Technology Certificate of Achievement .......................... 96
- Directions .................................................................................. 247
- Distance Education ..................................................................... 248
- Documentation Needed for Admissions ..................................... 32

### E
- Early Childhood Development Certificate ................................ 93
- Early Childhood Education ........................................................ 92
- Educational Opportunity Fund .................................................. 13
- Electronics Engineering Technology .......................................... 95
- Electronics Engineering Technology - Biomedical Equipment Option 96
- Engineering Science ................................................................... 101
- Engineering Technology Certificate of Achievement ................. 152
- English for Speakers of Other Languages (ESOL) ...................... 32
- Enrollment Status ....................................................................... 33
- Environmental Track (Biology) .................................................... 201
- ESL - English for Speakers of Other Languages ......................... 104
- Examination Credit ................................................................... 33
Exercise Science ............................................. 106

F
Fees (As of Summer 2020) .................................. 255
Financial Aid .................................................. 255
Fire Procedure ................................................. 251
Fire Science Technology .................................... 110
Food Service ................................................... 241

G
Governance ..................................................... 248
Grading System ................................................. 9
Graduation ....................................................... 10
Graphic Design ................................................ 111

H
Health Services ................................................ 13
History .......................................................... 253
Hold on Student Records .................................. 251
Honors Study ................................................... 114
Hospitality Management ................................... 115
Hospitality Management and Event Planning Certificate of Achievement ................................ 116
Human Services - Liberal Arts and Sciences ............... 120

I
Information Technology ..................................... 121
Insurance Requirements .................................... 34
International Students ....................................... 34
International Studies ......................................... 128

J
Journalism ....................................................... 129

L
Languages ....................................................... 132
Liberal Arts and Sciences - Humanities/Social Science ...... 139
Library/Learning Resource Center .......................... 241

M
Mathematics - Science and Math ......................... 199
Mechanical Engineering Technology ....................... 150
Media Technology Certificate of Achievement .......... 90
Military and Veteran Services ............................... 35
Mission and Values Statement ............................. 254
Music ............................................................ 156
Music Technology ............................................ 164
Musical Theatre ............................................... 172

N
New Student Orientation ................................... 13
Nursing .......................................................... 180

O
Occupational Therapy Assistant ........................... 183
Official Withdrawal from the College ....................... 11
Overloads ....................................................... 11

P
Personal Trainer Certificate of Achievement ............... 184
Photography Technology .................................... 188
Planetarium ..................................................... 241
PreProfessional Scientific Track (Biology) .................. 200
Prerequisites and Corequisites ............................. 11
Programs for High School Students ......................... 35
Public Health ................................................... 190

R
Radiography .................................................... 191
Readmitted Students ......................................... 35
Refund Policies ................................................ 259
Residency ....................................................... 259
Respiratory Therapy .......................................... 194
Restricted and Capped Enrollment ......................... 194
Rights, Rules, Regulations and Policies ..................... 249
Routing (CISCO CCNA) Certificate of Achievement ....... 197

S
Science and Mathematics ................................... 198
Second Degrees and Certificates ........................... 36
Semester Credit Hours ....................................... 11
Sexual Harassment Policy ................................... 251
Small Business Management Certificate of Achievement .... 47
Smoking Policy ................................................ 251
State-Issued High School Diploma .......................... 36
Student Categories ........................................... 36
Student Classifications ...................................... 36
Student Clubs and Organizations ........................... 241
Student Development ......................................... 14
Study Abroad Program ....................................... 212

T
Teacher Education ............................................ 212