Data Analytics

All business units, and companies large and small, are using data to improve operations and financial performance. Data science allows companies to make data-driven decisions in marketing, sales, finance, purchasing and more. Through a progression of courses at CCM, you can earn a Certificate in Data Analytics.

Data Analytics Certificate Program

PREREQUISITE: A solid foundation in Microsoft Excel; some programming knowledge is helpful.

The CCM Certificate in Data Analytics, offered through Workforce Development, provides participants with data acumen in the areas of data manipulation, visualization and interpretation. To obtain your certificate, you must take all of the following courses. Classes may be taken in any order, but the recommended sequence is:

Course Code	Course Title	CEUs
CPC-631E	Introduction to R Programming	0.6
CPC-603E	Advanced R Programming for Data Science	1
CPC-624E	Visual Basic Applications in Excel	0.6
CPC-629E	Business Analytics with Excel	0.6
CPC-651E	Tableau I	1.6
CPC-652E	Tableau II	1.6

For information on current course offerings and how to register, please go to our website (https://www.ccm.edu/workforce-development/).

Courses

Introduction to R Programming

PREREQUISITE: Proficient knowledge of MS Excel. R s widespread popularity to analyze large data sets makes it an essential tool in almost every field. The course will cover exploratory data analysis techniques, visualization methods, modeling and ideas in reproducible research using packages from base R. Students will learn the basic syntax for R and how functions and packages work. CPC-631E.

Advanced R Programming for Data Science

PREREQUISITE: Proficient knowledge of MS Excel and the Introduction to R Programming course or some programming knowledge. Expanding on the topics covered in the Introduction to R Programming course, students learn the use of the Tidyverse and the ggplot2, dplyr and tidyr packages. In addition, advanced data science methods such as k-means, clustering and dendrograms will be covered. CPC-603E.

Visual Basic Applications in Excel

PREREQUISITE: Proficient knowledge of MS Excel. Learn to record macros, read, write, and debug VB code, pass lists and floating variables though VB, use conditional statements, and create

input and message boxes. At the end of this course, students will be familiar with the VBA programming language as it applies to Microsoft Excel and will apply this knowledge to make interactive and fully functional spreadsheets. CPC-624E.

Business Analytics with Excel

PREREQUISITE: Proficient/intermediate knowledge of MS Excel. Learn how data science is applied in business. Explore concepts in correlation, regression analysis, hypothesis testing and multivariate analysis. Learn how correlation helps to understand portfolio diversification and design. What If analysis will be covered utilizing the Solver and Goal Seek features of Excel. CPC-629E.

Tableau I

This course is a fundamental building block as part of CCM's Data Visualization Certificate Program. This course provides a deep dive into the fundamentals of Tableau and the principles of effective data visualization. Designed for students eager to master the fundamentals of data analysis and storytelling, this course challenges participants to think critically about data structure, the analytics and insights development process, and user centric design to drive outcomes inside an organization. Through hands-on projects, case studies, and real-world datasets, students will develop the ability to create compelling visualizations that inform decision-making. CPC-651E.

Tableau II

This course serves as a critical next step in CCM's Data Visualization Certificate Program. Build on the foundational skills learned in Tableau I and learn the practical application of advanced Tableau techniques in a simulated business environment. Students will collaborate with peers acting as business stakeholders to gather user requirements, develop a strategic roadmap, and create a polished, functional dashboard. Key topics covered include advanced Tableau techniques such as Level of Detail (LOD) calculations, string functions, and advanced data visualization principles for designing clear, impactful dashboards. Additionally, students will learn how to refine the aesthetics of their visualizations to enhance user experience and communicate insights effectively. Present your work in a professional setting, by building a personal Tableau portfolio, and discuss strategies for using your skills in the job market. This includes tips for job searching, interview preparation, and showcasing your data visualization expertise. CPC-652E.