



WHAT YOU WILL LEARN

In today's technology-driven society, data is being amassed, analyzed, and used to determine business decisions, measure environmental changes, make healthcare decisions, guide sports teams, generate news articles and reports and more. The newest artificial intelligent tools are set to transform our society as we know it. Data Science is the foundation driving these technological applications and it makes a very compelling argument for pursuing this discipline.

Data Science is an interdisciplinary study of Computer Science, Statistics, Databases and domain knowledge. The CCM Computer Science Data Science Option provides the learner with knowledge and skills in all these subjects. Features of the program include:

- Analysis of real-world data using data science principles, processes, implementation and visualization techniques
- Computational thinking and practice of fundamental Computer Science topics using object-oriented programming, data structures and algorithms
- Using industry recognized statistical software to analyze data
- Diversity of data types and sources including Application Programming Interfaces (APIs) and database management using Structured Query Language (SQL)
- Building prediction models using machine learning and artificial intelligence
- Consideration of ethical uses of data, privacy, security, and integrity

Students will gain in-demand skills of R, Python, Java, Tableau and SQL in this program and prepare themselves for further study or employment in Data Science.

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Curriculum Checksheet: www.ccm.edu/checksheets

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CAREERS

According to Glassdoor, data scientists are one of the most highly in-demand and sought-after careers worldwide. The starting salary in New Jersey is over 100K for entry-level positions.

- Big Data Engineer
- Business Intelligence Engineer
- Data Analytics Consultant
- Data Architect
- Data Business Analyst
- Data Visualization Developer
- Data Scientist
- Junior Data Support Specialist
- Machine Learning Scientist
- Operations Analyst
- Predictive Analytics Professional
- Project Manager
- Quantitative Analyst
- Report and Analytics Designer
- Report and Analytics Developer
- Statistician

CONTACT INFORMATION

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WHY STUDY AT CCM

There are many reasons why you should study Data Science at CCM:

- The Associate of Science degree program is designed to prepare students to transfer to baccalaureate programs in Data Science or Computer Science
- Completion of the degree program provides graduates the foundation to pursue an entry-level position or internships in the data analytics field
- CCM students may also complete the Certificate of Achievement in Data Analytics within their degree in one year
- The college's collaborative, team-based learning environment allows CCM students to do project-based work with others, analyzing real-world data to solve problems or answer questions
- CCM courses are taught by professors with experience in the field
- Classes are held in small classrooms equipped with industry-standard software to ensure CCM students graduate with current and relevant skills
- Extra-curricular activities such as team competitions and attendance at conferences enable CCM students to extend their knowledge and experiences outside of the classroom

WHERE YOU CAN GO

CCM and Ramapo College recently entered into a Data Science Transfer Agreement, the first between a community college and a four-year institution in New Jersey.

- This allows students to begin their education at CCM to earn their associate degree in Computer Science Data Science Option and then seamlessly transfer to Ramapo to earn their bachelor's degree and then a master's degree in data science also.
- By taking several graduate courses as an undergraduate at Ramapo, the master's can be completed in one year.
- By starting at a community college and then earning a master's in a year, students can enjoy significant savings on their higher education.

Students are not required to earn a master's and can opt instead to earn a bachelor's degree only.

CCM students have transferred to Columbia University, New Jersey Institute of Technology (NJIT), Ramapo College and the University of Michigan - Ann Arbor.

CURRICULUM

GENERAL EDUCATION FOUNDATION (35CR)

COMMUNICATION (6 CR)

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

MATH/SCIENCE/TECHNOLOGY (12 CR)

Precalculus**	MAT 123	4
Analytic Geometry & Calculus I**	MAT 131	4
Probability & Statistics	MAT 130	4

SOCIAL SCIENCE (3 CR)

Choose from General Education list (Social Science)		3
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DIVERSITY (3 CR)

Choose from General Education list (Diversity)		3
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HUMANITIES (3 CR)

Choose from General Education list (Humanities)		3
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GENERAL EDUCATION (8 CR)

Laboratory Science Sequence		4
Laboratory Science Sequence		4

COMPUTER SCIENCE CORE (25 CR)

Intro to Data Science	MAT 114	3
Computer Science I	CMP 128	3
Computer Science II (Java)	CMP 129	3
Fundamentals of Programming (Python)	CMP 131	3
Data Structures and Algorithms (CS III)	CMP 233	3
Database Programming	CMP 241	3
Discrete Mathematics	MAT 225	4
CIS ELECTIVES*		3

TOTAL

60

Note: You must see a faculty advisor to plan your sequence of courses. For the most up-to-date listing of courses, see the Curriculum Checklist for this program on the CCM website at www.ccm.edu/checksheets.

**Students who meet or exceed required Math thresholds should consult with an advisor regarding Math course placement.