DATA SCIENCE AS

Total Credits: 60
Catalog Edition: 2026-2027

Program Description

The degree provides an excellent opportunity for students wanting to increase their data literacy, improve their marketability, and/or prepare for a career in a data science field. It is also suitable for those who wish to advance their professional careers by supplementing their work experience or an existing college or graduate degree with data science knowledge. Students will use mathematics, statistics, and data science skills to tackle unstructured data, solve multifaceted problems, consider ethical implications, and make data-driven recommendations. Through hands-on experiences using a variety of the most ubiquitous data tools and technology, students will learn to build the skills necessary to explore, analyze, visualize, and communicate about large data sets. Additionally, students will explore ethical implications of the use of data in the data lifecycle. **This program can be completed either on campus or online.**

Program Outcomes

Upon completion of this program, a student will be able to:

- Assess different analysis and data management techniques and justify the selection of a particular model or technique for a given task.
- Execute analyses of large and disparate datasets and construct models necessary for these analyses.
- Demonstrate competency with programming languages and environments for data analysis.
- Summarize and communicate findings of complex analyses in a concise way for a target audience using both graphics and statistical measures.
- Explain, evaluate, and apply ethical principles and practices in the data lifecycle.

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Suggested Course Sequence

A suggested course sequence for full-time students follows. All students should review this advising guide and consult an advisor.

First Semester

ENGL 101 - Introduction to College Writing *3 semester hours* *

MATH 150 - Elementary Applied Calculus I *4 semester hours* (MATF)

OR

MATH 181 - Calculus I *4 semester hours* (MATF)

PSYC 100 - General Psychology *3 semester hours* (BSSD)

COMM 108 - Foundations of Human Communication *3 semester hours* (GEEL)

OR

COMM 112 - Business and Professional Speech Communication *3 semester hours* (GEEL)

MATH 217 - Statistics for Scientists *3 semester hours*

Second Semester

English Foundation*3 semester hours (ENGF)*

PHIL 140 - Introduction to the Study of Ethics *3 semester hours* (HUMD)

GEOG 130 - Global Geography *3 semester hours* (BSSD, GCP)

DATA 101 - Introduction to Data Science *3 semester hours*

DATA 110 - Data Visualization and Communication *3 semester hours*

Third Semester

Natural Sciences Distribution with Lab*4 semester hours (NSLD)* **

DATA 201 - Statistical Methods in Data Science *3 semester hours*

MATH 264 - Applications in Linear Algebra *4 semester hours* ‡

Program Elective *4 semester hours* †

Fourth Semester

Arts Distribution *3 semester hours (ARTD)*

Natural Sciences Distribution with Lab *4 semester hours (NSLD)* **

DATA 205 - Capstone Experience in Data Science *4 semester hours*

200-Level Program Elective *3 semester hours* †

Total Credit Hours: 60

* ENGL 101/ENGL 011, if needed for ENGL 102/ENGL 103 or program elective.

** Students are strongly encouraged to take two consecutive lab sciences courses. Examples include CHEM 131/CHEM 132, PSCI 101/PSCI 102, PHYS 203/PHYS 204.

‡ MATH 284 may be substituted for MATH 264.

† Program Electives: any MATH or CMSC course or GEOG 240 or GEOG 260. Department strongly recommends CMSC 206, CMSC 246, DATA 269, and GEOG 240. CMSC 206 and CMSC 246 provide programming skills in Python and SQL, and GEOG 240 provides foundational knowledge of Geographic Information Systems (GIS). Not all program elective options transfer to all institutions. Please consult a data science program advisor or the transfer institution before selecting program elective courses.

†† For students transferring to UMD's Information Science program, MATH 217 is not equivalent to STAT 100, which is a required benchmark course in the program. However, completing MATH 217 does exempt students from the STAT 100 requirement in the Information Science program.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

This program can be completed either on campus or online.

Program Advisor

Data.Science@montgomerycollege.edu

For more information, please visit https://www.montgomerycollege.edu/academics/programs/data-science/data-science-associate-of-science.html

Transfer Opportunities

Montgomery College has partnerships with multiple four-year institutions and the tools to help you transfer. To learn more, please visit https://www.montgomerycollege.edu/transfer or http://artsys.usmd.edu .

Get Involved at MC!

Employers and Transfer Institutions are looking for experience outside the classroom.

MC Student Clubs and Organizations: https://www.montgomerycollege.edu/life-at-mc/student-life/

Related Careers

Some require a Bachelor's degree.
Data Scientist, Data Analyst, Data Engineer, Data Science Generalist, Data Science Program Manager.

Data science is now transforming industries beyond the technology industry, in areas such as health care, energy, and transportation. With benefits of data becoming more numerous and widespread, demand for data science and analytics talent is projected to grow by 15 percent by 2020 (US Bureau of Labor).

Career Services
Montgomery College offers a range of services to students and alumni to support the career planning process. To learn more, please visit https://www.montgomerycollege.edu/career

Career Coach
A valuable online search tool that will give you the opportunity to explore hundreds of potential careers or job possibilities in Maryland and the Washington D.C. metropolitan area. Get started today on your road to a new future and give it a try. For more information, please visit https://montgomerycollege.emsicc.com

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