Graduate Programs in Data Science

Master of Professional Studies and Graduate Certificate: Data Science

DATA SCIENCE - A PROFESSIONALLY-FOCUSED AND RELEVANT GRADUATE DEGREE

» Learn the latest data science tools and machine learning techniques to work with data at scale, derive insights from structured and unstructured data in different formats, and solve real-world problems.
» Gain skills to build predictive/prescriptive models and neural networks, run evaluations, and interpret results.
» Develop effective presentation skills and visualization methods to communicate data-driven findings to executive stakeholders.
» Understand legal and ethical implications of data privacy, data security, and bias.

WHEN YOU CHOOSE UMBC PROFESSIONAL PROGRAMS, YOU CAN COUNT ON:

» Courses developed and taught by industry experts and designed to address real-world applications of data science.
» Programs that use case-based studies to bring student and faculty experiences into the classroom.
» Curriculum that prepares students for careers in data science, analytics, predictive modeling, business intelligence, and data mining in data-driven industries including finance, healthcare, biotechnology, and sports.
» Flexible evening and online class schedule that accommodates working professionals.

WHY UMBC?

» UMBC provides a comprehensive and quality education at a manageable cost.
» UMBC is uniquely positioned to provide education and training that respond to the growing regional and national demand for professionals with data science knowledge, skills, and abilities.
» The 2017 U.S. News & World Report Best Colleges guide ranks UMBC in the top five on its closely-watched Most Innovative Schools list and has recognized UMBC as a global leader in higher education.
### ADMISSIONS REQUIREMENTS

- An undergraduate degree in any subject
- Students must have prior coursework to include college-level math, statistics, and programming.
- Minimum undergraduate GPA of 3.0 on a 4.0 scale.

### ADMISSIONS DEADLINES

**Fall:** August 1  
**Spring:** December 1

For detailed application process please visit [datascience.umbc.edu](http://datascience.umbc.edu)

### Master's of Professional Studies (M.P.S.):  
Data Science  
30 Credits (10 courses)

#### REQUIRED CORE COURSES  
21 CREDITS

- DATA 601*: Introduction to Data Science**
- DATA 602*: Introduction to Data Analysis and Machine Learning
- DATA 603*: Platforms for Big Data Processing
- DATA 604*: Data Management
- ENMG 652: Management, Leadership and Communication
- DATA 605: Ethical and Legal Issues in Data Science
- DATA 606: Capstone in Data Science

* Indicates courses needed for Data Science Certificate.  
** Must be taken in 1st semester.

#### PATHWAY COURSES  
SELECT 3 COURSES (9 CREDITS)

- **PROJECT MANAGEMENT**  
  Catonsville and Shady Grove Campus  
  *(in collaboration with the College of Engineering and Information Technology)*

- **DATA SCIENCE ANALYTICS**  
  Catonsville Campus Only  
  *(in collaboration with the Department of Information Systems)*

- **POLICY ANALYSIS**  
  Catonsville Campus Only  
  *(in collaboration with the Public Policy Department)*

- ** BIOINFORMATICS**  
  Catonsville and Shady Grove Campus  
  *(in partnership with Foundation for Advanced Education Services @ NIH)*

- ** SPATIAL ANALYTICS**  
  Shady Grove Campus Only  
  *(in collaboration with the Department of Geography and Environmental Systems)*

- **MANAGEMENT SCIENCE**  
  Catonsville and Shady Grove Campus  
  *(in collaboration with the College of Engineering and Information Technology)*

- **CYBERSECURITY**  
  Catonsville and Shady Grove Campus  
  *(in collaboration with the MPS in Cybersecurity Program)*

- **HEALTHCARE ANALYSIS**  
  Catonsville Campus Only  
  *(in collaboration with the MPS in Health Information Technology Program)*

- **ADVANCED COMPUTING & ANALYTICS**  
  Catonsville Campus Only  
  *(in collaboration with the Department of Computer Science and Electrical Engineering)*

- **ECONOMICS/ECONOMETRICS**  
  Catonsville Campus Only  
  *(in Collaboration with the Department of Economics)*

Note: Students pursuing the Project Management and/or Cybersecurity pathways are eligible for the respective certificate in Project Management and/or Cybersecurity Operations upon completion.

Please consult datascience.umbc.edu for typical schedule and exact courses and course descriptions.

This academic program is a participant in the U.S. Department of Education Gainful Employment program.

For more information, [https://gradschool.umbc.edu/resources/careers/gainfulemploy/](https://gradschool.umbc.edu/resources/careers/gainfulemploy/)