Data Science - a professionally-focused and relevant graduate degree

» Develop an in-depth understanding of the basic computing principles behind data science in areas such as, data ingestion, curation and cleaning and the 4Vs of data science: Volume, Variety, Velocity, Veracity, and the implicit 5th V -- Value.

» Learn how to apply principles of data science to the analysis of problems within a wide range of interdisciplinary domains.

» Gain practical, hands-on experience with state-of-the-art data science tools.

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 analytics.

» Programs that use case-based studies to bring student and faculty experiences into the classroom.

» Curriculum that provides students with an understanding and fundamental building blocks of the skills needed to gain insights from large amounts of data.

» Flexible evening 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.
Admission Requirements
M.P.S. & Certificate:

» An undergraduate degree in any subject

» Students must have completed the following courses at the undergraduate or graduate level:
  • One semester of statistics
  • Calculus I
  • Candidates must have academic or professional experience equivalent to basic programming courses.

» Students who do not have formal undergraduate programming courses or on-the-job training are encouraged to use MOOCs or Khan Academy.

» Minimum undergraduate GPA of 3.0 on a 4.0 scale

Admission Deadlines
Fall: August 1
Spring: December 1

For detailed application process please visit: datascience.umbc.edu

Master’s Program
Master's of Professional Studies: Data Science
30 Credits (10 courses)

Required Core Courses (21 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>DATA 601*</td>
<td>Introduction to Data Science**</td>
</tr>
<tr>
<td>DATA 602*</td>
<td>Introduction to Data Analysis and Machine Learning</td>
</tr>
<tr>
<td>DATA 603*</td>
<td>Platforms for Big Data Processing</td>
</tr>
<tr>
<td>DATA 604*</td>
<td>Data Management</td>
</tr>
<tr>
<td>ENMG 652</td>
<td>Management, Leadership and Communication</td>
</tr>
<tr>
<td>DATA 605</td>
<td>Ethical and Legal Issues in Data Science</td>
</tr>
<tr>
<td>DATA 606</td>
<td>Capstone in Data Science</td>
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</tbody>
</table>

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

Pathway Courses: Select 3 Courses (9 credits)

Spatial Analytics
(in collaboration with the Department of Geography and Environmental Systems)

- GES 773: GIS Modeling
- GES 774: Spatial Analysis
- GES 778: Visualization and Presentation

Data Science Analytics
(in collaboration with the Department of Information Systems)

- IS 721: Semi-Structured Data Management
- IS 722: Systems and Information Integration
- IS 733: Data Mining

Project Management
(in collaboration with the College of Engineering and Information Technology)

- ENMG 650: Project Management
- ENMG 661: Leading Virtual/Global Teams
- ENMG 663: Advanced Project Management

Management Science
(in collaboration with the College of Engineering and Information Technology)

- Choose three ENMG courses from:
  - ENMG 650 - 690

Cybersecurity
(in collaboration with the MPS in Cybersecurity Program)

- CYBR 620: Introduction to Cybersecurity
- CYBR 650: Managing Cybersecurity Operations
- CYBR 658: Risk Analysis and Compliance

Advanced Computing & Analytics
(in collaboration with the Department of Computer Science and Electrical Engineering)

- CMSC 661: Principles of Database Systems
- CMSC 671: Principles of Artificial Intelligence
- CMSC 678: Machine Learning

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/