DATA SCIENCE, BS (COLLEGE OF ENGINEERING AND APPLIED SCIENCE, DEPARTMENT OF COMPUTER SCIENCE)

The Bachelor of Science in Data Science (BSDS) program is a special degree program that blends courses from both the College of Letters & Science and the College of Engineering & Applied Science. It is a structured curriculum offering courses from both statistics and computer science, in addition to electives from other departments and colleges.

The job outlook for individuals with data science degrees is extremely favorable. A student with combined skills in statistical analysis and computer programming is likely to be in high demand on the job market.

Our program is highly technical in nature yet still retains elements of a classic liberal arts degree. Students take courses in the humanities, social sciences, and natural sciences as part of the general education requirements, in addition to mandatory courses on the ethical implications of data science and on writing and communication. A broad world view of cultures, history, and society leads to better decision-making in scientific careers, and strong communication skills make graduates even more attractive in the job market.

Data Science Program Requirements

Students who intend to complete the BS in Data Science (BSDS) program in four years will need to begin taking mathematics in their first semester. Such students should have a University of Wisconsin-Milwaukee mathematics placement level of 30 (ready for precalculus) or better.

Admission

For admission to the BSDS program, students need only meet the general requirements of admission to UW-Milwaukee.

As soon as students realize their interest in the BSDS degree, they should consult with an BSDS advisor either in the College of Engineering and Applied Science or College of Letters and Science, who will assist in planning a program.

Degree Requirements

The program requires at least 120 credits, which include University-wide General Education Requirements (https://catalog.uwm.edu/policies/undergraduate-policies/#generaleducationtext), 24 credits of mandatory preparatory courses, 36 credits of mandatory advanced core courses, a capstone course or an internship at the end of the coursework, and additional elective courses to fulfill the overall credit requirement.

An overall GPA of 2.000 on all coursework attempted at UWM is required for this degree. In addition, students must achieve a 2.000 GPA on all coursework attempted, including transfer work. A minimum 2.000 GPA must be earned on all 300-level and above courses taken to satisfy the advanced requirements. Students satisfy the residency requirement for the degree by completing at UWM both a minimum of 15 credits of the required advanced courses and one of the following:

- The last 30 credits;
- 45 of the last 60 credits;
- Any 90 credits.

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### Electives (to reach 120 total credits)
Courses with substantial data analysis, data processing, or computational content are recommended, such as:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COMPSCI 315</td>
<td>Introduction to Computer Organization and Assembly Language Programming</td>
<td>3</td>
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<tr>
<td>COMPSCI 411</td>
<td>Machine Learning and Applications</td>
<td>3</td>
</tr>
<tr>
<td>COMPSCI 423</td>
<td>Introduction to Natural Language Processing</td>
<td>3</td>
</tr>
<tr>
<td>COMPSCI 425</td>
<td>Introduction to Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>COMPSCI 444</td>
<td>Introduction to Text Retrieval and Its Applications in Biomedicine</td>
<td>3</td>
</tr>
<tr>
<td>COMPSCI 459</td>
<td>Fundamentals of Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>COMPSCI 469</td>
<td>Introduction to Computer Security</td>
<td>3</td>
</tr>
<tr>
<td>COMPSCI 535</td>
<td>Algorithm Design and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MTHSTAT 562</td>
<td>Design of Experiments</td>
<td>3</td>
</tr>
<tr>
<td>MTHSTAT 564</td>
<td>Time Series Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MTHSTAT 565</td>
<td>Nonparametric Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 315</td>
<td>Mathematical Programming and Optimization</td>
<td>3</td>
</tr>
<tr>
<td>MATH 318</td>
<td>Topics in Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 571</td>
<td>Introduction to Probability Models</td>
<td>3</td>
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<td>INFOST 120</td>
<td>Information Technology Ethics</td>
<td>3</td>
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<tr>
<td>INFOST 315</td>
<td>Knowledge Organization for Information Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>INFOST 465</td>
<td>Legal Aspects of Information Products and Services</td>
<td>3</td>
</tr>
<tr>
<td>INFOST 660</td>
<td>Information Policy</td>
<td>3</td>
</tr>
<tr>
<td>INFOST 661</td>
<td>Information Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>

### Honors in the College of Engineering and Applied Science

#### Dean's Honor List
GPA of 3.500 or above, earned on a full-time student's GPA on 12 or more graded credits in a given semester.

#### Honors College Degree and Honors College Degree with Distinction
Granted to graduating seniors who complete Honors College requirements, as listed in the Honors College (http://catalog.uwm.edu/opportunities-resources/honors-college/) section of this site.

#### Commencement Honors
Students with a cumulative GPA of 3.500 or above, based on a minimum of 40 graded UWM credits earned prior to the final semester, will receive all-university commencement honors and be awarded the traditional gold cord at the December or May Honors Convocation. Please note that for honors calculation, the GPA is not rounded and is truncated at the third decimal (e.g., 3.499).