DATA SCIENCE, MS ANALYTICS MANAGEMENT SPECIALIZATION

As the strategic and tactical decisions of organizations become increasingly data-driven, analytics managers bridge the work of analysts and modelers with business operations and strategy to lead data science teams, address future business needs, identify business opportunities, and translate the work of data scientists into language that business management understands. This specialization equips data scientists with the communication and management strategies needed to be data-driven leaders who utilize models, analyses, and statistical data to improve business performance.

Note: In addition to fulfilling general requirements for the MSDS degree, students in Analytics Management must take two specialization core courses: MSDS 474-DL Accounting and Finance for Analytics Managers and one of three courses selected from MSDS 475-DL Project Management, MSDS 480-DL Business Leadership and Communications, or MSDS 485-DL Data Governance, Ethics, and Law.

Curriculum

Core Courses (8 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>MSDS 400-DL</td>
<td>Math For Data Scientists</td>
</tr>
<tr>
<td>MSDS 401-DL</td>
<td>Applied Statistics with R</td>
</tr>
<tr>
<td>MSDS 402-DL or MSDS 403-DL</td>
<td>Introduction to Data Science ¹</td>
</tr>
<tr>
<td>MSDS 420-DL</td>
<td>Database Systems and Data Preparation</td>
</tr>
<tr>
<td>MSDS 422-DL</td>
<td>Practical Machine Learning</td>
</tr>
<tr>
<td>MSDS 460-DL</td>
<td>Decision Analytics</td>
</tr>
<tr>
<td>MSDS 475-DL or MSDS 480-DL or MSDS 485-DL</td>
<td>Project Management Business Leadership and Communications Data Governance, Ethics, and Law</td>
</tr>
<tr>
<td>MSDS 498-DL or MSDS 590-DL</td>
<td>Capstone Class Thesis Research</td>
</tr>
</tbody>
</table>

¹ Which course should students take?

• Students without a background in data science should select MSDS 402-DL Introduction to Data Science.
• Students with a background in data science should select MSDS 403-DL Data Science in Practice. Students who have at least two years’ experience in the field and have or had a title, such as data scientist, data analyst, statistician, data engineer, business analyst, etc. should select this course.

Specialization Courses (4 units)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MSDS 474-DL</td>
<td>Accounting and Finance for Analytics Managers</td>
</tr>
<tr>
<td>MSDS 475-DL or MSDS 480-DL or MSDS 485-DL</td>
<td>Project Management Business Leadership and Communications Data Governance, Ethics, and Law</td>
</tr>
<tr>
<td>Any two electives</td>
<td>Supervised Learning Methods</td>
</tr>
<tr>
<td></td>
<td>Unsupervised Learning Methods</td>
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<td></td>
<td>Times Series Analysis and Forecasting</td>
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</tbody>
</table>

Complete two of these three courses: one to fulfill the core requirement and one to fulfill the specialization requirement.

About the Final Project

As their final course in the program, students take either a master's thesis project in an independent study format or a classroom final project class in which students integrate the knowledge they have gained in the core curriculum in a team project approved by the instructor. In both cases, students are guided by faculty in exploring the body of knowledge of data science. The master's thesis or capstone class project count as one unit of credit.

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<td>Thesis Research</td>
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