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.

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 Modelers</td>
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<tr>
<td>MSDS 401-DL</td>
<td>Applied Statistics with R</td>
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<tr>
<td>MSDS 420-DL</td>
<td>Database Systems</td>
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<tr>
<td>MSDS 422-DL</td>
<td>Practical Machine Learning</td>
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<tr>
<td>MSDS 460-DL</td>
<td>Decision Analytics</td>
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<tr>
<td>MSDS 485-DL</td>
<td>Data Governance, Ethics, and Law</td>
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<tr>
<td>MSDS 498-DL</td>
<td>Capstone Class</td>
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or MSDS 590-DL Thesis Research

Any one of the following:  

- MSDS 402-DL Research Design for Data Science
- MSDS 403-DL Data Science and Digital Transformation
- MSDS 470-DL Technology Entrepreneurship
- MSDS 472-DL Management Consulting
- MSDS 474-DL Accounting and Finance for Technology Managers
- MSDS 475-DL Project Management
- MSDS 476-DL Business Process Analytics
- MSDS 480-DL Business Leadership and Communications

1 Students need to choose one of these eight course options to fulfill the business, leadership, communication requirement.

Specialization Courses (4 units)

<table>
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<tr>
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<tbody>
<tr>
<td>MSDS 474-DL</td>
<td>Accounting and Finance for Technology Managers</td>
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<tr>
<td>MSDS 476-DL</td>
<td>Business Process Analytics</td>
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Any two electives

- MSDS 402-DL Research Design for Data Science
- MSDS 403-DL Data Science and Digital Transformation
- MSDS 410-DL Supervised Learning Methods
- MSDS 411-DL Unsupervised Learning Methods
- MSDS 413-DL Times Series Analysis and Forecasting
- MSDS 430-DL Python for Data Analysis
- MSDS 431-DL Data Engineering with Go
- MSDS 432-DL Foundations of Data Engineering
- MSDS 434-DL Analytics Application Engineering
- MSDS 436-DL Analytics Systems Engineering

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.

Course  Title

Choose one

- MSDS 498-DL Capstone Class
- MSDS 590-DL Thesis Research