BUSINESS ANALYTICS AND RISK MANAGEMENT, MASTER OF SCIENCE

The STEM-designated Master of Science in Business Analytics and Risk Management (BARM) full-time program equips managers to improve decision making processes based on a rigorous treatment of data and information using the management of risk as an underlying guide and framework. This program is designed to teach ways to: quantify multiple dimensions of hard business problems; analyze the structure and data related to those problems; and create rigorous approaches based on that analysis to guide business decisions. In each setting elements of Data Science, Decision Modeling, and Business Analysis are synthesized to facilitate management of both opportunities and risks. Coursework provides exposure to both a variety of analytical tools and aspects of risk management which enable managers to make better decisions for themselves and their organizations.

An MS in Business Analytics and Risk Management provides graduates with the tools and knowledge to:

- Convert raw data into useful information
- Present that information in compelling ways
- Use information to understand complex decision settings
- Create rigorous approaches to problem solving
- Construct persuasive arguments based on careful analysis
- Use information to diagnose problems
- Use analysis to prescribe approaches to improve performance
- Develop ways to predict future performance
- Improve decision making at all levels
- Add value to any organization in need of more analytical expertise

Program Requirements

The program requires 36 credits. Full-time MS students must complete the program in 3 semesters: fall, spring, and summer. Course waivers are not granted in this program.

Curriculum

The curriculum for the MS in BARM program includes the following courses. Course sequence and availability of specific electives may vary. Students must consult with an academic advisor to ensure that they take courses in the approved sequence. All courses are 2 credits.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BU.210.620</td>
<td>Accounting and Financial Reporting</td>
<td>2</td>
</tr>
<tr>
<td>BU.520.601</td>
<td>Business Analytics</td>
<td>2</td>
</tr>
<tr>
<td>BU.120.601</td>
<td>Business Communication</td>
<td>2</td>
</tr>
<tr>
<td>BU.131.601</td>
<td>Business Leadership and Human Values</td>
<td>2</td>
</tr>
<tr>
<td>BU.231.620</td>
<td>Corporate Finance</td>
<td>2</td>
</tr>
<tr>
<td>BU.350.620</td>
<td>Information Systems</td>
<td>2</td>
</tr>
<tr>
<td>BU.410.620</td>
<td>Marketing Management</td>
<td>2</td>
</tr>
<tr>
<td>BU.680.620</td>
<td>Operations Management</td>
<td>2</td>
</tr>
<tr>
<td>BU.510.601</td>
<td>Statistical Analysis</td>
<td>2</td>
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|       |                                      |         |
| BU.520.620 | Advanced Business Analytics          | 2       |
| BU.510.650 | Data Analytics                      | 2       |
| BU.610.615 | Simulation for Business Applications| 2       |

**Elective Courses**

Students must complete 6 elective courses. At least 2 of these courses must be from the Quantitative Electives section.

**Quantitative Electives**

Select at least two of the following:

- BU.520.710 Big Data Machine Learning
- BU.232.650 Continuous Time Finance
- BU.450.760 Customer Analytics
- BU.330.780 Data Science and Business Intelligence
- BU.520.650 Data Visualization
- BU.610.630 Pricing and Insuring Risk
- BU.450.740 Retail Analytics
- BU.610.760 Supply Chain Analytics
- BU.510.615 Python for Data Analysis

**General Electives**

- BU.132.601 Business Law
- BU.610.730 Contracting: Incentive Design and Analytics
- BU.231.720 Corporate Governance
- BU.610.705 Crisis Management
- BU.330.730 Cybersecurity
- BU.520.701 Enterprise Risk Management Frameworks
- BU.230.750 Financial Crises and Contagion
- BU.300.620 Managing Complex Projects
- BU.230.730 Managing Financial Risk

**Total Credits** 36