# 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 students to improve decision making processes based on a rigorous treatment of data and information. Students gain knowledge on different types of analytics methodologies, tools used to acquire and analyze data, derive insights from the data, and effectively communicate the results for a better decision making in a volatile business environment. 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. Coursework provides exposure to business analytics and risk management principles along with necessary tools which enable students 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
- Develop a thorough understanding of risk
- Protect shareholder value by managing the downside of risk

## 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.

| Code | Title | Credits |
|---|---|---|
| **Business Foundations** | | |
| BU.210.620 | Accounting and Financial Reporting | 2 |
| BU.520.601 | Business Analytics | 2 |
| BU.120.601 | Business Communication | 2 |
| BU.131.601 | Business Leadership and Human Values | 2 |
| BU.231.620 | Corporate Finance | 2 |
| BU.510.615 | Python for Data Analysis | 2 |
| BU.410.620 | Marketing Management | 2 |
| BU.680.620 | Operations Management | 2 |
| BU.510.601 | Statistical Analysis | 2 |
| **Functional Core** | | |
| BU.520.620 | Advanced Business Analytics | 2 |
| BU.510.650 | Data Analytics | 2 |
| BU.520.710 | Big Data Machine Learning | 2 |
| **Elective Courses** | | **12** |
| 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.232.650 | Continuous Time Finance | |
| BU.450.760 | Customer Analytics | |
| BU.330.780 | Data Science and Business Intelligence | |
| BU.520.650 | Data Visualization | |
| BU.610.615 | Simulation for Business Applications | |
| BU.610.630 | Pricing and Insuring Risk | |
| BU.450.740 | Retail Analytics | |
| BU.610.710 | Sustainable Supply Chains | |
| BU.610.760 | Supply Chain Analytics | |
| BU.330.770 | Database Management | |
| BU.330.740 | Large Scale Computing on the Cloud | |
| BU.330.760 | Deep Learning with Unstructured Data | |
| *General Electives* | | |
| 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** |