

FINANCE SPECIALIZATION: BUSINESS ANALYTICS AND DATA SCIENCE, M.S.

A Master of Science degree program in Business Analytics and Data Science is designed to prepare students for careers in the burgeoning field of data analytics. The program will develop the skills needed to gather, store, analyze and interpret large amounts of “Big Data” in order to facilitate informed business decisions. Students may elect to further focus their studies on techniques suitable to specific business disciplines such as finance, marketing, logistics and accounting. The curriculum also supports the content of the Certified Analytics Professional (CAP) examination.

ADMISSION REQUIREMENTS

- Bachelor’s degree from a nationally accredited undergraduate program.
- Recommended minimum GPA 3.0.
- Graduate Record Examination (GRE) or the Graduate Management Admissions Test (GMAT), recommended 50th percentile or higher. The GRE/GMAT requirement can be waived on a case by case basis. The waiver form can be found at <http://www.njcu.edu/sites/default/files/pdfs/gstwrform.pdf>.
- Three letters of recommendation
- A personal Statement of Purpose (1000 to 2000 words), which should describe the applicant’s reasons for applying to the program and ways in which his or her experience, skills, and goals are aligned with the program.
- A current resume that outlines the applicant’s educational background, employment history, professional activities, and other activities.
- International students are required to take the Test of English as a Foreign Language (TOEFL) and submit an Educational Credential Evaluators (ECE), or World Education Services (WES) evaluation of international transcripts. The TOEFL requirements can be found at <http://www.njcu.edu/admissions/how-apply/english-proficiency-requirements>.

PREREQUISITE REQUIREMENTS

The 39-credit course of study assumes an undergraduate degree and/or work experience in business, technology, or related disciplines. Depending on background and focus, students may be required to take one or more of the following prerequisites:

- BUSI 599 Graduate Business Essentials (6 credits)
- ACCT 601 Financial Accounting (3 credits)
- FINC 603 Quantitative Methods for Business Entities (3 credits)
- BUSI 695 Executive Business Communications (3 credits)

Similar graduate courses from other institutions may be accepted with approval of the program coordinator.

Code	Title	Credits
Pre-Requisite Courses (As Required):		15
BUSI 599	Graduate Business Essentials	9
ACCT 601	Financial Accounting I	3

FINC 603	Quantitative Methods for Business Decisions	3
Required Core Program Courses:		24
FINC 614	Introduction to Business Analytics and Data Science	3
FINC 615	Programming for Data Science	3
FINC 620	Statistical and Mathematical Methods for Data Science	3
FINC 630	Introduction to Machine Learning	3
FINC 635	Data Collection, Cleansing and Warehousing	3
FINC 650	Experimental Design	3
FINC 660	Data Visualization and Communication	3
FINC 665	Applied Regression and Time Series Analysis	3
Required Electives:		12
Elective Course: Department Permission		3
Elective Course: Department Permission		3
Elective Course: Department Permission		3
Elective Course: Department Permission		3
Capstone Requirement:		3
FINC XXX Thesis/Capstone Project in Data Science: Permission of Coordinator		3
Total Minimum Credits:		39

Traditional Full-time Plan

Course	Title	Credits
First Year		
Semester 1		
FINC 614	Introduction to Business Analytics and Data Science	3
FINC 615	Programming for Data Science	3
FINC 620	Statistical and Mathematical Methods for Data Science	3
		Credits
		9
Semester 2		
FINC 630	Introduction to Machine Learning	3
FINC 635	Data Collection, Cleansing and Warehousing	3
FINC 665	Applied Regression and Time Series Analysis	3
		Credits
		9
Second Year		
Semester 1		
FINC 650	Experimental Design	3
FINC 660	Data Visualization and Communication	3
Elective Course I ¹		3
		Credits
		9
Semester 2		
Elective Course II ¹		3
Elective Course III ¹		3
Elective Course IV ¹		3
		Credits
		9

Third Year**Semester 1**

FINC XXX	Thesis/Capstone Project in Data Science	3
	Credits	3
	Total Credits	39

Part-time Plan

Course	Title	Credits
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First Year**Semester 1**

FINC 614	Introduction to Business Analytics and Data Science	3
FINC 615	Programming for Data Science	3
	Credits	6

Semester 2

FINC 635	Data Collection, Cleansing and Warehousing	3
FINC 630	Introduction to Machine Learning	3
	Credits	6

Second Year**Semester 1**

FINC 620	Statistical and Mathematical Methods for Data Science	3
Elective Course I ¹		3
	Credits	6

Semester 2

FINC 665	Applied Regression and Time Series Analysis	3
Elective Course II ¹		3
	Credits	6

Third Year**Semester 1**

FINC 650	Experimental Design	3
FINC 660	Data Visualization and Communication	3
	Credits	6

Semester 2

Elective Course III ¹		3
Elective Course IV ¹		3
	Credits	6

Fourth Year**Semester 1**

FINC XXX	Thesis/Capstone Project in Data Science	3
	Credits	3
	Total Credits	39

1. Create large databases by effectively gathering, storing and cleansing large amounts of data from a diverse array of sources ranging from real-time financial market data to social media data.
2. Apply statistical analysis and machine learning techniques to identify patterns in the data and build predictive models.
3. Effectively communicate the findings of the data analysis using visualization techniques.
4. Develop creative ways of combining and using large and diverse datasets with predictive analytics to make business decisions.

¹ With the guidance of a program advisor, electives may be chosen from graduate course offerings in the departments of Accounting, Finance, Management, and Marketing

Student Learning Outcomes

Upon completion of the Masters of Science in Business Analytics and Data Science program, students will be able to: