

# BUSINESS ANALYTICS AND DATA SCIENCE, B.S.

The Bachelor of Science in Business Analytics and Data Science program will prepare students with the skills needed to gather, store, analyze and interpret large amounts of data in order to make business decisions. The program is designed to cater to the burgeoning need for analytics and data science professionals in various industries such as finance, marketing, retail and accounting.

The business analytics and data science bachelor's program at NJCU reflects the university's commitment to empower a diverse, underserved population and be an institution of higher education nimble in its response to dynamic 21st Century opportunities and challenges. The program also underscores the resolve of the NJCU School of Business to be a data-driven institution.

The program will be fully geared towards practice. Students learning experiences will be grounded in real world contexts. Students will learn analytical skills and use software tools that are currently popular in the industry, to find solutions to business data analysis problems that are commonly encountered in practice. Students will also learn the ethical responsibilities of working with large amounts of data, which in many cases could be private. Graduates of the program will be thoroughly prepared to take on the role of a data scientist in the industry.

The program will also prepare students to take the Certified Analytics Professional (CAP) certification.

Incoming students may transfer up to 50% of the School of Business courses required in the major, pending department evaluation for transfer equivalency. Once matriculated at NJCU, transfer students must complete at least 30 credits at NJCU to satisfy the university's residency requirement. Students must also maintain a GPA of 2.5 or better in courses taken in the School of Business. Students must earn a grade of C or higher in each School of Business course (ACCT, BUSI, ECON, FINC, MGMT, MKTG) used in fulfillment of a graduation requirement.

Code	Title	Credits
<b>Common Core Requirements (33 credits)</b>		
MGMT 225	Business Enterprise Applications	3
MGMT 251	Operations and Project Management Fundamentals	3
ECON 203	Business Statistics	3
MGMT 211	Principles of Management	3
MKTG 231	Principles of Marketing	3
MGMT 241	Global Business	3
ACCT 251	Financial Accounting	3
ACCT 252	Management Accounting (Pre-Requisite ACCT 251)	3
MGMT 235	Business Law I: Legal Environment of Business	3
FINC 371	Managerial Finance (Pre-Requisite ECON 208, ACCT 252, MATH 164)	3
MGMT 411	Business Policy (Pre-Requisite FINC 371)	3
<b>Specialization Requirements (24 credits)</b>		
FINC 305	Introduction to Data Science	3

FINC 306	Statistical and Mathematical Foundations for Business Analytics and Data Science	3
FINC 405	Programming Basics for Business Analytics and Data Science	3
FINC 415	Basics of Data Collection, Data Warehousing, and Data Cleansing	3
FINC 410	Introduction to Forecasting Models and Experimental Design for Business Analytics and Data Science	3
FINC 403	Fundamentals of Data Visualization for Business Analytics and Data Sciences	3
FINC 430	Principles of Machine Learning	3
FINC 495	Capstone in Data Science	3

## Electives (18 credits)

Students may take electives as approved by the Department Advisor in general business, or across disciplines including but not limited to courses from Economics, Finance, Accounting, Marketing, Computer Science, Political Science, GeoScience, or group classes for a Minor or Specialization.

## General Education Courses Required

MATH 164	Pre-Calculus for Business Students	4
or ECON 221	Analytics For Business and Economics	
ECON 207	Principles of Economics:Macro	3
ECON 208	Principles of Economics:Micro	3

## Freshman

Semester 1		Credits
ENGL 101	English Composition I	4-6
or ESL 101	or English Composition I for English as a Second Language Students	
MATH 164	Pre-Calculus for Business Students	3-4
General Education Tier I Course		3
General Education Tier I Course		3
INTD 101	Orientation to College <sup>*first time freshmen only</sup>	1
<b>Credits</b>		<b>14-17</b>

Semester 2		Credits
ENGL 102	English Composition II	4-6
or ESL 102	or English Composition 2 ESL	
MGMT 211	Principles of Management	3
General Education Tier I Course		3
General Education Tier I Course		3
Elective		3
<b>Credits</b>		<b>16-18</b>

## Sophomore

Semester 1		Credits
MGMT 241	Global Business	3
ECON 207	Principles of Economics:Macro	3
MGMT 225	Business Enterprise Applications	3
ACCT 251	Financial Accounting	3
General Education Tier II Course		3
<b>Credits</b>		<b>15</b>

Semester 2		Credits
FINC 250	Financial Literacy: Strategies for Financial Success	3
ECON 208	Principles of Economics:Micro	3

ECON 203	Business Statistics	3
ACCT 252	Management Accounting	3
General Education Tier II Course		3
<b>Credits</b>		<b>15</b>
<b>Junior</b>		
<b>Semester 1</b>		
MGMT 251	Operations and Project Management Fundamentals	3
MGMT 235	Business Law I: Legal Environment of Business	3
FINC 305	Introduction to Data Science	3
FINC 405	Programming Basics for Business Analytics and Data Science	3
General Education Tier III Course		3
<b>Credits</b>		<b>15</b>
<b>Semester 2</b>		
MKTG 231	Principles of Marketing	3
FINC 371	Managerial Finance	3
FINC 306	Statistical and Mathematical Foundations for Business Analytics and Data Science	3
FINC 430	Principles of Machine Learning	3
Major Elective or Minor Requirement		3
<b>Credits</b>		<b>15</b>
<b>Senior</b>		
<b>Semester 1</b>		
FINC 410	Introduction to Forecasting Models and Experimental Design for Business Analytics and Data Science	3
FINC 403	Fundamentals of Data Visualization for Business Analytics and Data Sciences	3
FINC 415	Basics of Data Collection, Data Warehousing, and Data Cleansing	3
Major Elective or Minor Requirement		3
Major Elective or Minor Requirement		2
<b>Credits</b>		<b>14</b>
<b>Semester 2</b>		
FINC 495	Capstone in Data Science	3
MGMT 411	Business Policy	3
Major Elective or Minor Requirement		3
Major Elective or Minor Requirement		3
Major Elective or Minor Requirement		3
<b>Credits</b>		<b>15</b>
<b>Total Credits</b>		<b>119-124</b>

4. Integrate knowledge of core business concepts and collaborate productively as part of a team.
5. Work effectively in a diverse environment and understand how global and cultural issues effect the organization and its stakeholders.
6. Compose clear and concise forms of written communication to effectively convey ideas and information associated with business topics.
7. Communicate business concepts effectively through oral presentation.
8. 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.
9. Apply statistical analysis and machine learning techniques to build predictive models.
10. Explain the findings of the data analysis using visualization techniques.
11. Demonstrate ability to use large and diverse datasets and apply predictive analytics in making business decisions and effectively disseminating results.

### ***Student Learning Outcomes***

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

1. Identify ethical issues and understand the implications of social responsibility for sustainable business practices.
2. Evaluate information and apply critical thinking skills to identify solutions and inform business decisions.
3. Utilize technology, apply quantitative methods and interpret data to solve business problems.