B.S.B.A. IN BUSINESS ANALYTICS

Overview

Major Area of Specialization in Business Analytics (STEM)

The Department of Management Science offers a major area of specialization in Business Analytics for students pursuing the Bachelor of Science in Business Administration degree. Students who choose the major area of specialization in Business Analytics are trained to combine quantitative, statistical, and computational tools and techniques to help companies understand, predict, and act on large amounts of data, improving decision-making in increasingly complex and interconnected business environments.

Curriculum Requirements

In addition to satisfying the University General Education Requirements and Electives, students pursuing the BSBA in Business Analytics must complete the BSBA Business Core and the specific coursework for the Business Analytics major area of specialization as follows:

Code	Title	Credit Hours
General Education Requirements [1,2]		
Written Communication Skills:		
WRS 105	First-Year Writing I	3
WRS 106	First-Year Writing II [3]	3
or ENG 106	Writing About Literature and Culture	
Quantitative Skills:		
MTH 161	Calculus I (fulfilled through the BSBA business core)	
Areas of Knowledge:		
Arts and Humanities Cognate		9
People and Society Cognate		9
STEM Cognate (9 credits) (fulfilled through the major)		
Additional Requirements		
UMX 100	The University of Miami Experience	0
Electives		15
BSBA Business Core Requirements [1]		
ACC 211	Principles of Financial Accounting	3
or ACC 221	Accelerated Principles of Financial Accounting	
ACC 212	Managerial Accounting	3
or ACC 222	Accelerated Managerial Accounting	
BSL 212	Introduction to Business Law and Ethics	3
BTE 210	Fundamentals of Business Technology and Innovation	3
BTE 320	Python Programming: Fundamentals and Algorithms	3
BUS 150	Business Analytics	3
BUS 300	Critical Thinking and Persuasion for Business [3]	3
ECO 211	Principles of Microeconomics	3
ECO 212	Principles of Macroeconomics	3
FIN 302	Fundamentals of Finance	3
MAS 311	Applied Probability and Statistics (minimum grade of C- required)	3
MAS 312	Statistical Methods and Quality Control	3
MTH 161	Calculus I (minimum grade of C- required; fulfills Quantitative Skills Requirement)	4
MTH 162	Calculus II	4
MGT 100	Managing for Success in the Global Environment	3
MGT 199	Professional Development and Success in the Workplace (or other approved Miami Herbert Business School career course)	1
or BUS 211	Professional Development for Finance and Accounting	
MGT 303	Operations Management	3
MGT 304	Organizational Behavior	3

MGT 401	Strategic Management (taken in the final semester)	3
MKT 201	Foundations of Marketing	3
or MKT 301	Marketing Foundations	
Quantitative Choice - Select one of these suggested courses approved by the Vice Dean for Undergraduate Business Education - check pre-requisites:		3
BTE 324	Object-Oriented Programming [5]	
BTE 423	Database Management Systems [5]	
ECO 430	Applied Econometrics	
ECO 510	Mathematical Economics and Applications	
MAS 342	Introduction to Optimization and Decision Making [6]	
MAS 442	Stochastic Models in Operations Research [6]	
MAS 547	Computer Simulation Systems [5]	
MGT 445	Supply Chain Modeling and Analysis	
MGT 446	Supply Chain Strategy	
Major Area of Specialization in Business Analytics [4]		
MAS 332	Data Acquisition, Preparation and Visualization (pre-requisite MAS 202 or MAS 312; offered in the fall semester)	3
MAS 342	Introduction to Optimization and Decision Making (pre-requisite MAS 201 or MAS 311; offered in the fall semester) [6]	3
MAS 432	Data Analysis (pre-requisite MAS 202 or MAS 312; offered in the spring semester)	3
MAS 442	Stochastic Models in Operations Research (pre-requisite MAS 311; offered in the spring semester) [6]	3
Major Choice Courses - Select two courses (6 credit hours) from the following:		6
At least one course must be selected from MAS 499, MAS 547, or MAS 548.		
BTE 324	Object-Oriented Programming (pre-requisite BTE 320) [5]	
BTE 423	Database Management Systems (pre-requisite BTE 320) [5]	
MAS 499	Special Topics in Business Analytics	
MAS 547	Computer Simulation Systems (pre-requisite MAS 311; offered in the fall semester) [5]	
MAS 548	Machine Learning for Analytics (pre-requisite MAS 432; offered in the spring semester)	
Total Credit Hours		**120**

[1] **NOTE**: WRS 105 and WRS 106 or ENG 106, or their equivalents, must be completed prior to attaining junior year classification, per the University General Education Requirements. MTH 161 or its equivalent must be completed **prior to** the 5th semester of coursework. All courses must be taken within the current prerequisite structure.

[2] At least one course with an international focus must be completed within the degree requirements. The appropriateness of the course is determined by the Vice Dean for Undergraduate Business Education.

[3] Students who do not earn at least a C- in WRS 106 or ENG 106 must either repeat WRS 106 or ENG 106 and earn at least a C- or complete WRS 230 with at least a C- before enrolling in BUS 300.

[4] All specific coursework for the major area of specialization in Business Analytics must be completed with a grade of "C-" or higher. A minimum cumulative GPA of 2.5 is required for all specific coursework taken in the major area of specialization.

[5] may not double count as both the Quantitative Choice and a Major Choice unless Business Analytics is an additional major

[6] may not double count as both the Quantitative Choice and the major requirement unless Business Analytics is an additional major

Sample Plan of Study

This Sample Plan of Study represents one possible version of a new first-year Business student's 8-semester plan. The individual student's plan may vary depending upon the initial placement into English Composition and mathematics. Moreover, numerous plan variations are possible if a student enters the University with advanced college credits, wishes to participate in study abroad, chooses a special program option, or selects additional majors or minors.

Note that each major/minor at the University of Miami satisfies a particular "Area of Knowledge" within the general education requirements of the University. This means that it is possible to pursue two majors, or a major and a minor, within the Miami Herbert Business School and fulfill both the

STEM and People and Society Areas of Knowledge; a separate cognate in these areas would not be required. The only remaining general education Area of Knowledge is Arts and Humanities, which must be completed through a major, minor, or cognate outside of the Business School.

Students construct their individualized plans in collaboration with their assigned academic advisor.

Freshman Year		
Fall		**Credit Hours**
ECO 211	Principles of Microeconomics	3
MGT 100	Managing for Success in the Global Environment	3
MKT 201	Foundations of Marketing	3
MTH 161	Calculus I	4
WRS 105	First-Year Writing I	3
UMX 100	The University of Miami Experience	0
	Credit Hours	**16**
Spring		
BUS 150	Business Analytics	3
ECO 212	Principles of Macroeconomics	3
MTH 162	Calculus II	4
WRS 106 or ENG 106	First-Year Writing II or Writing About Literature and Culture	3
Arts and Humanities Cognate Course		3
	Credit Hours	**16**
Sophomore Year		
Fall		
ACC 211	Principles of Financial Accounting	3
BSL 212	Introduction to Business Law and Ethics	3
BTE 210	Fundamentals of Business Technology and Innovation	3
MAS 311	Applied Probability and Statistics	3
Arts and Humanities Cognate Course		3
	Credit Hours	**15**
Spring		
ACC 212	Managerial Accounting	3
BUS 300	Critical Thinking and Persuasion for Business	3
FIN 302	Fundamentals of Finance	3
MAS 312	Statistical Methods and Quality Control	3
MGT 199	Professional Development and Success in the Workplace	1
Arts and Humanities Cognate Course		3
	Credit Hours	**16**
Junior Year		
Fall		
MAS 332	Data Acquisition, Preparation and Visualization	3
MAS 342	Introduction to Optimization and Decision Making	3
MGT 304	Organizational Behavior	3
People and Society Cognate Course		3
Elective		3
	Credit Hours	**15**
Spring		
BTE 320	Python Programming: Fundamentals and Algorithms	3
MAS 432	Data Analysis	3
MAS 442	Stochastic Models in Operations Research	3
People and Society Cognate Course		3
Elective		3
	Credit Hours	**15**

Senior Year		
Fall		
MGT 303	Operations Management	3
Business Analytics Major Choice		3
People and Society Cognate Course		3
Elective		3
Elective		3
	Credit Hours	**15**
Spring		
MGT 401	Strategic Management	3
Business Analytics Major Choice		3
Quantitative Choice Course		3
Elective		3
	Credit Hours	**12**
	Total Credit Hours	**120**

Mission

- To develop innovative ideas and principled leaders that transform global business and society.

Goals

For students pursuing the Bachelor of Science in Business Administration (BSBA) degree program, the major in Business Analytics requires a solid background in the sciences and mathematics. Additionally, students are required to take sequences of courses in optimization, decision science, and data analytics. A number of the courses in the Business Analytics curriculum require projects, in which the student evaluates a real-world system or process. As the system is studied and modeled, the student applies management science methods to find ways to improve the process. In such a course, written and oral presentation of findings is part of the learning and evaluation process.

Student Learning Outcomes

- BBA/BSBA graduates will be critical thinkers, able to select and apply appropriate models, tools, and techniques, and frameworks to enable them to render analytically sound business decisions.
- BBA/BSBA graduates will be able to identify, analyze and resolve ethical issues in business scenarios.
- BBA/BSBA graduates will demonstrate professional written communication skills.
- BSBA graduates will have strong technical skills.