

# BACHELOR OF SCIENCE WITH A MAJOR IN BUSINESS ANALYTICS (STEM)

The bachelor of science (BS) in business analytics program is designed to prepare students for the data driven business world of the century and to provide students with leadership aspirations with both the technical and quantitative skills and abilities necessary to effectively use data and strong communication, organizational management, and general consulting skills and knowledge. Program graduates are able to transform large, unclean data sets into usable and actionable information, while also presenting and communicating these results and recommendations to business leaders in order to create results and enact change.

The business analytics curriculum provides a deep foundation in the methodologies and technologies of analytics, as well as the team and project skills necessary to apply them in the real world. Students in the BS in business analytics program will:

- Understand how analytics can improve decisions throughout an organization's value chain and how to assess and improve the analytic competency of a firm.
- Understand the different forms of analytics (descriptive, predictive, and prescriptive) and develop a sound understanding of the methods used in each.
- Develop hands-on experience with analytical tools and software that are widely used in practice including emphasis on the SAS tools suite, R Programming, Python, SQL, no-SQL, Tableau, and other current and trending technologies.
- Understand the dynamics of leading and participating in successful analytics teams and projects.
- Develop an ability to communicate the analysis and findings of an analytics project in an effective manner to decision makers and policymakers.

This is a STEM designated program.

Visit the program website (<https://business.gwu.edu/academics/programs/undergraduate/bs-business-analytics/>) for additional information.

## REQUIREMENTS

The following requirements must be fulfilled: a minimum of 120 credits, including University General Education (<http://bulletin.gwu.edu/university-regulations/general-education/>), pre-business, business core, and business analytics major courses.

Students pursuing business analytics as a second major should reference the business analytics as a second major (p. 2) requirements section at the end of this page.

Code	Title	Credits
<b>General education courses</b>		
UW 1020	University Writing	
6 credits taken in at least two writing in the disciplines (WID) courses in two or more separate semesters. <sup>1</sup>		
One critical analysis in the humanities course. <sup>2</sup>		
One scientific reasoning with laboratory course. <sup>2</sup>		
One course with an approved oral communication component. <sup>2</sup>		
Code	Title	Credits
<b>Pre-business courses</b>		
BADM 1001 & BADM 1002	Business Leader Foundations I and Business Leader Foundations II <sup>3</sup>	
or BADM 1003	Business Leader Foundations for Transfer Students	
BADM 3001	Business Leader Career Strategy	
BADM 4001	Business Leader Launch	
DNSC 1001	Business Analytics I: Statistics for Descriptive and Predictive Analytics	
or STAT 1051	Introduction to Business and Economic Statistics	
or STAT 1053	Introduction to Statistics in Social Science	
or STAT 1111	Business and Economic Statistics I	
or APSC 3115	Engineering Analysis III	
DNSC 2001	Business Analytics II: Predictive and Prescriptive Analytics <sup>4</sup>	
or STAT 2112	Business and Economic Statistics II	
or STAT 2118	Regression Analysis	
or STAT 2123	Introduction to Econometrics	
or ECON 2123	Introduction to Econometrics	
ECON 1011	Principles of Economics I	
ECON 1012	Principles of Economics II	
One of the following sequences in mathematics:		
MATH 1231 & MATH 1232	Single-Variable Calculus I and Single-Variable Calculus II	
or MATH 1051 & MATH 1252	Finite Mathematics for the Social and Management Sciences and Calculus for the Social and Management Sciences	

or MATH 1051 & MATH 1231	Finite Mathematics for the Social and Management Sciences and Single-Variable Calculus I
or MATH 1220 & MATH 1221 & MATH 1051	Calculus with Precalculus I and Calculus with Precalculus II and Finite Mathematics for the Social and Management Sciences
or MATH 1220 & MATH 1221 & MATH 1232	Calculus with Precalculus I and Calculus with Precalculus II and Single-Variable Calculus II

Code	Title	Credits
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#### Business core courses

ACCY 2001	Introduction to Financial Accounting
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Four courses selected from the following:

ACCY 2002	Introductory Managerial Accounting
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BADM 2001W	Markets and Politics
or BADM 2001	Markets and Politics

BADM 2301	Management Information Systems Technology
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BADM 3103	Human Capital in Organizations
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BADM 3401	Contemporary Marketing Management
or BADM 3401W	Contemporary Marketing Management

BADM 3501	Financial Management and Markets
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BADM 3601	Operations Management
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BADM 4101	Business Ethics and the Legal Environment
or BADM 4101W	Business Ethics and the Legal Environment

BADM 4801	Strategy Formulation and Implementation
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IBUS 3001	Introduction to International Business
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#### Business analytics major courses

DNSC 3288	
or DNSC 3288W	Big Data, Predictive Analytics, and Ethics

DNSC 3403	Decision Models
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DNSC 4211	Programming for Analytics
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DNSC 4219	Forecasting Analytics
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DNSC 4279	Data Mining
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DNSC 4280	Machine Learning
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DNSC 4289	Capstone in Business Analytics
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ISTM 4212	Data Management for Analytics
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Two courses selected from the following:

DNSC 4233	Social Network Analytics
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DNSC 4281	Revenue Management Analytics
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DNSC 4282	Supply Chain Analytics
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DNSC 4900	Special Topics
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#### Electives

In general, students complete 40 credits in elective courses to reach the 120 credits required for the degree. 18 of those credits must be taken outside of GWSB. Elective courses may be applied to a GWSB concentration, a non-GWSB minor, or a GWSB or non-GWSB second major. Reference the GWSB undergraduate policies section for course restrictions.

<sup>1</sup> Courses must be taken after completion of UW 1020 and in separate semesters.

<sup>2</sup> See Undergraduate Education at GW (<http://bulletin.gwu.edu/university-regulations/general-education/>) for additional information regarding approved courses for this requirement.

<sup>3</sup> First-year students take BADM 1001 and BADM 1002; transfer students take BADM 1003.

<sup>4</sup> BS in business analytics students should complete DNSC 2001 as their advanced statistics requirement.

#### BUSINESS ANALYTICS AS A SECOND MAJOR

Students pursuing business analytics as a second major are required to complete the courses listed below. Non-GWSB students may declare business analytics as a second major directly with their home school advisor; a signature from a GWSB academic advisor is not required.

Code	Title	Credits
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DNSC 3288		
or DNSC 3288W	Big Data, Predictive Analytics, and Ethics	

DNSC 3403	Decision Models	
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DNSC 4211	Programming for Analytics	
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DNSC 4219	Forecasting Analytics	
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DNSC 4279	Data Mining	
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DNSC 4280	Machine Learning	
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DNSC 4289	Capstone in Business Analytics	
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ISTM 4212	Data Management for Analytics
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Two courses selected from the following:

DNSC 4233	Social Network Analytics
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DNSC 4281	Revenue Management Analytics
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DNSC 4282	Supply Chain Analytics
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DNSC 4900	Special Topics
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