

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 (<https://bulletin.gwu.edu/university-regulations/general-education/>), pre-business and business core courses, and 30 credits in 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
University General Education Requirement		
One course in critical thinking in the humanities.		
Two courses in critical thinking, quantitative reasoning, or scientific reasoning in the social sciences.		
One course that has an approved oral communication component.		
One course in quantitative reasoning (must be in mathematics or statistics).		
One course in scientific reasoning (must be in natural and/or physical laboratory sciences).		
UW 1020	University Writing (4 credits)	
After successful completion of UW 1020, 6 credits distributed over at least two different Writing in the Disciplines (WID) courses taken in separate semesters (summer counts as one semester). WID courses are designated by a "W" appended to the course number.		
Approved courses can be found under University General Education Requirement (https://bulletin.gwu.edu/university-regulations/general-education/).		
Code	Title	Credits
Pre-business courses		
BADM 1001 & BADM 1002	Business Leader Foundations I and Business Leader Foundations II *	
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 **	
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
Business core courses		
Required		
ACCY 2001	Introduction to Financial Accounting	
And four courses selected from the following:		
ACCY 2002	Introductory Managerial Accounting	
BADM 2001W	Markets and Politics	
or BADM 2001	Markets and Politics	
BADM 2301	Management Information Systems Technology	
BADM 3103	Human Capital in Organizations	
BADM 3401	Contemporary Marketing Management	
or BADM 3401W	Contemporary Marketing Management	
BADM 3501	Financial Management and Markets	
BADM 3601	Operations Management	
BADM 4101	Business Ethics and the Legal Environment	
or BADM 4101W	Business Ethics and the Legal Environment	

BADM 4801 Strategy Formulation and Implementation

IBUS 3001 Introduction to International Business

Business analytics major courses

DNSC 3288W Big Data, Predictive Analytics, and Ethics

or DNSC 3288 Big Data, Predictive Analytics, and Ethics

DNSC 3403 Decision Models

DNSC 4211 Programming for Analytics

DNSC 4219 Forecasting Analytics

DNSC 4279 Data Mining

DNSC 4280 Machine Learning

DNSC 4289 Capstone in Business Analytics

ISTM 4212 Data Management for Analytics

And two courses selected from the following:

DNSC 4233 Social Network Analytics

DNSC 4281 Revenue Management Analytics

DNSC 4282 Supply Chain Analytics

DNSC 4900 Special Topics

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 can be applied to a GWSB concentration, a non-GWSB minor, or a GWSB or non-GWSB second major. See GWSB Regulations in this Bulletin for course restrictions.

*First-year students take BADM 1001 and BADM 1002; transfer students take BADM 1003.

** 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 30 credits in 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
DNSC 3288W	Big Data, Predictive Analytics, and Ethics	
or DNSC 3288 Big Data, Predictive Analytics, and Ethics		
DNSC 3403	Decision Models	
DNSC 4211	Programming for Analytics	
DNSC 4219	Forecasting Analytics	
DNSC 4279	Data Mining	
DNSC 4280	Machine Learning	
DNSC 4289	Capstone in Business Analytics	
ISTM 4212	Data Management for Analytics	
Two courses selected from the following:		
DNSC 4233	Social Network Analytics	
DNSC 4281	Revenue Management Analytics	
DNSC 4282	Supply Chain Analytics	
DNSC 4900	Special Topics	