BACHELOR OF SCIENCE WITH A MAJOR IN INFORMATION SYSTEMS (STEM)

OVERVIEW

The bachelor of science with a major in information systems program focuses on the theory, organization, and process of information collection, transmission, and utilization in traditional and electronic forms. The program includes instruction in information classification and organization; information storage and processing; transmission, transfer, and signaling; communications and networking; systems planning and design; human interfacing and use analysis; database development; information policy analysis; and related aspects of hardware, software, economics, social factors, and capacity.

Students in the BS in information systems program learn to:

- Analyze and apply knowledge of information systems technology (IST) body of knowledge to meet specific business requirement, specifically for the following:
  - System analysis and design (methodologies, techniques, and tools, including OO)
  - Database management, data warehousing
  - Programming
  - Web development
  - Web analytics
  - Strategic development in IST
- Communicate clearly and effectively in writing and oral presentations
- Weigh the ethics and impact on society as a whole when making decisions
- Think critically, analyze the facts, and make intelligent choices
- Work effectively in a team, both as a member and a team leader, by actively participating in team activities, completing assigned tasks on time, helping other team members, and working towards a common goal

This is a STEM designated program.

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, business core, and information systems major courses.

Students pursuing information systems as a second major should reference the information systems as a second major (p. 2) requirements section at the bottom of this page.

Code	Title	Credits
General education courses		
UW 1020	University Writing	

6 credits taken in at least two writing in the disciplines (WID) courses in two or more separate semesters. [1]

One critical analysis in the humanities course. [2]

One scientific reasoning with laboratory course. [2]

One course with an approved oral communication component. [2]

Code	Title	Credits
Pre-business courses		
BADM 1001 & BADM 1002	Business Leader Foundations I and Business Leader Foundations II [3]	
or BADM 1003	Business Leader Foundations for Transfer Students	
BADM 3001	Business Leader Career Strategy	
BADM 4001	Business Leader Launch	
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 DNSC 1001	Business Analytics I: Statistics for Descriptive and Predictive Analytics	
or APSC 3115	Engineering Analysis III	
STAT 2112	Business and Economic Statistics II	
or STAT 2118	Regression Analysis	
or STAT 2123	Introduction to Econometrics	
or DNSC 2001	Business Analytics II: Predictive and Prescriptive Analytics	
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	

Business core courses

BADM 2301	Management Information Systems Technology

Four courses selected from the following:

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

Information systems major courses

ISTM 3119	Introduction to Programming
ISTM 4120	Business Systems Development
ISTM 4121	Database Principles and Applications
ISTM 4205	Web Applications Development
ISTM 4206	Foundations of Information Systems Security and Ethics
ISTM 4209	Foundations of Web Analytics
ISTM 4210	Information Systems Capstone

Three courses selected from the following:

ISTM 4213	Foundations of Cloud Applications
ISTM 4214	Foundations of Artificial Intelligence
ISTM 4216	Mobile Application Development
ISTM 4217	Internet of Things Management

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. See GWSB Undergraduate Regulations in this Bulletin for information regarding course restrictions.

[1] Courses must be taken after completion of UW 1020 and in separate semesters.

[2] See Undergraduate Education at GW (https://bulletin.gwu.edu/university-regulations/general-education/) for additional information regarding approved courses for this requirement.

[3] First-year students take BADM 1001 and BADM 1002; transfer students take BADM 1003.

INFORMATION SYSTEMS AS A SECOND MAJOR

Students who are pursuing information systems as a second major are required to complete the following courses. Non-GWSB students may declare information systems as a second major directly with their home school advisor; a signature from a GWSB academic advisor is not required.

Code	Title	Credits
ISTM 3119	Introduction to Programming	
ISTM 4120	Business Systems Development	
ISTM 4121	Database Principles and Applications	
ISTM 4205	Web Applications Development	
ISTM 4206	Foundations of Information Systems Security and Ethics	
ISTM 4209	Foundations of Web Analytics	
ISTM 4210	Information Systems Capstone	
Three courses selected from the following:		
ISTM 4213	Foundations of Cloud Applications	
ISTM 4214	Foundations of Artificial Intelligence	
ISTM 4216	Mobile Application Development	
ISTM 4217	Internet of Things Management	

COMBINED PROGRAMS

Combined Program

- Dual Bachelor of Arts or Bachelor of Science and GW School of Business Master's Degree (https://bulletin.gwu.edu/business/dual-ba-bs-and-business-masters/)