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 (http://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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

General education courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>UW 1020</td>
<td>University Writing</td>
<td></td>
</tr>
</tbody>
</table>
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 (http://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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISTM 3119</td>
<td>Introduction to Programming</td>
<td></td>
</tr>
<tr>
<td>ISTM 4120</td>
<td>Business Systems Development</td>
<td></td>
</tr>
<tr>
<td>ISTM 4121</td>
<td>Database Principles and Applications</td>
<td></td>
</tr>
<tr>
<td>ISTM 4205</td>
<td>Web Applications Development</td>
<td></td>
</tr>
<tr>
<td>ISTM 4206</td>
<td>Foundations of Information Systems Security and Ethics</td>
<td></td>
</tr>
<tr>
<td>ISTM 4209</td>
<td>Foundations of Web Analytics</td>
<td></td>
</tr>
<tr>
<td>ISTM 4210</td>
<td>Information Systems Capstone</td>
<td></td>
</tr>
</tbody>
</table>

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 (http://bulletin.gwu.edu/business/dual-ba-bs-and-business-masters/)