The BS in Information Technology program aims to meet the existing and emerging needs of industry by educating new IT workers in current IT principles and practices, and in its applications. The program focuses on equipping graduates with effective skills for interacting at the management level as well as the technical level. Graduates fill jobs that focus on the application of IT in an increasing number of emerging sub-disciplines, including network administration, information security, information systems, telecommunications, web development, computer graphics, and data management. The BS in Information Technology program is accredited by the Computing Accreditation Commission of ABET, http://www.abet.org.

Admission Requirements
Students who meet Mason's general eligibility requirements may apply for admission to the Information Technology major. Admission is based on the appropriateness of the student’s academic objectives and the likelihood of the student benefiting from the program. Preference in admission is given to students who have four years of high school mathematics, including pre-calculus.

Degree Requirements
The IT program can be successfully completed in 8 full-time semesters with an average of 15 credits each semester, as shown in the sample schedule. It is also possible for students to complete the degree on a part-time basis. The 120-credit degree requirement consists of Mason Core requirements, IT foundation and core courses, and courses required for the chosen IT concentration area. Students must complete requirements for at least one of five IT concentration areas. Lower division program courses are primarily taught at the Fairfax campus, while upper division program courses are primarily taught at the Science and Technology campus, where many Department of Information Sciences and Technology faculty offices are located. Distance education sections are available for the majority of program courses.

At least 45 semester hours of the degree requirements must be level 300 or above, and at least 30 semester hours toward the BS degree must be earned at George Mason University. Students must have a C or better in any course that satisfies a prerequisite for an IT course. To graduate with the BS in Information Technology, students must have a GPA of 2.75 or better across the IT foundation, core, capstone, and concentration courses. Additionally, students must have a C or better in their foundation, core, capstone, and concentration courses.

IT Foundation, Core, Concentration, and Capstone Requirements
In addition to Mason Core requirements, including humanities and social sciences as well as mathematics and basic sciences, the BS in Information Technology requires IT foundation, core, and concentration courses as described below. The IT major also requires a 7-credit capstone design project, to be completed over a period of two consecutive semesters.

1. Foundation Courses
   - IT 102 Discrete Structures
   - MATH 125 Discrete Mathematics I
   - IT 104 Introduction to Computing
   - IT 105 IT Architecture Fundamentals
   - IT 106 Introduction to IT Problem Solving Using Computer Programming
   - IT 109 Introduction to Computer Programming
   - IT 206 Object Oriented Techniques for IT Problem Solving
   - IT 209 Intro to Object Oriented Programming
   - IT 216 Systems Analysis and Design
   - STAT 250 Introductory Statistics I

2. Core Courses
   - IT 207 Applied IT Programming
   - IT 213 Multimedia and Web Design
   - IT 214 Database Fundamentals
   - IT 223 Information Security Fundamentals
   - IT 300 Modern Telecommunications
   - IT 304 IT in the Global Economy
   - IT 341 Data Communications and Network Principles
   - IT 342 Operating Systems Fundamentals
   - IT 343 IT Project Management
   - MBUS 300 Accounting in a Global Economy
   - SYST 469 Human Computer Interaction

3. Two-Semester Capstone Sequence
   - IT 492 Senior Design Project I
   - IT 493 Senior Design Project II

4. Other Requirements
   - IT 293 Applied IT: Junior Transition
   - COMM 100 Public Speaking
   - COMM 101 Fundamentals of Communication
   - Natural Science with Lab
   - Natural Science without Lab
   - MATH 108 Introductory Calculus with Business Applications
   - MATH 113 Analytic Geometry and Calculus

5. Concentration Area

Advanced Study: Mason offers students the ability to complete both BS and MS degrees in a shorter time through an Accelerated Masters (MS) program. Choosing to pursue an accelerated MS may affect a student's choice of courses in the BS program. Students should consult with an advisor for assistance. See http://ist.gmu.edu/go/advising for more information.
Students choose one of five concentrations from the list below. To be eligible to declare a concentration, a student must earn a B or better in the associated concentration’s gateway course(s). To fulfill the requirements for a concentration, students need 15 credits made up of four courses from their chosen concentration and a fifth course chosen from any of the five concentrations. All concentration courses require a grade of B or better in the prerequisite gateway course(s) associated with that concentration.

### Web Development (WDev)

- **Gateway:** IT 213 or IT 193 Multimedia/Web Design

  - IT 351 Mobile Development
  - IT 331 Web I: Web Development
  - IT 332 Web Server Administration
  - IT 335 Web Dev Using Content Mgmt Systems
  - IT 390 Python Web Programming
  - IT 410 Web Programming
  - IT 414 Database Administration
  - IT 491 Intro to Applied Natural Language Processing
  - IT 495 Turning Ideas into Successful Companies

### Health Information Technology (HIT)

- **Gateway:** IT 214 or IT 194 Database Fundamentals

  - HAP 360 Intro to Health Information Systems
  - IT 322 Health Data Challenges
  - IT 324 Health Information Technology Fundamentals
  - IT 390 Rapid Dev of Scalable Cloud Applications
  - STAT 362 Intro to Computer Statistical Packages

### Cyber Security (CYBR)

- **Gateway:** IT 223 Info Security Fundamentals

  - IT 352 Security Administration of Linux Systems
  - IT 353 Information Defense Technologies
  - IT 357 OR CRIM 304 Computer Crime, Forensics, and Auditing
  - IT 366 Network Security
  - IT 369 Data and Application Security
  - IT 429 Security Accreditation of Info Systems
  - IT 462 Applied Cyber Threat Analysis
  - IT 466 Foundations of Cryptography and Security
  - IT 467 Network Defense

### Network and Telecommunications (NTEL)

- **Gateway:** IT 341 Data Comm/Network Prncpls

  - ECE 301 Digital Electronics
  - IT 366 Network Security
  - IT 441 Network Servers and Infrastructures
  - IT 445 Advanced Networking Principles
  - IT 455 Wireless Communications and Networking
  - IT 465 Peer-to-Peer Systems/Overlay Networks
  - IT 484 Voice Communications Technologies
  - IT 488 Fundamentals of Satellite Communications

### Database Technology and Programming (DTP)

- **Gateway:** IT 206 or IT 209 O O Tech/IT Problem Solving and IT 214 or IT 194 Database Fundamentals

  - IT 306 Program Design and Data Structures
  - IT 309 Data Structures and Algorithms in Python AND IT 314 Database Programming
  - IT 315 Mobile Development
  - IT 322 Health Data Challenges
  - IT 369 Data and Application Security
  - IT 390 Rapid Dev of Scalable Applications
  - IT 409 Python Web Programming
  - IT 410 Web Programming
  - IT 414 Database Administration
  - IT 491 Intro to Applied Natural Language Processing
  - IT 495 Turning Ideas into Successful Companies

### Information Technology, BS

#### 2019-2020 Sample Schedule for Undergraduate Information Technology Majors

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
<th>Credits</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td>MATH 108 Introductory Calculus with Business Applications or MATH 113 Analytic Geometry and Calc I</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT 102 Discrete Structures or MATH 125 Discrete Mathematics I</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>IT 214 Database Fundamentals</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mason Core*</td>
<td>3</td>
<td>Mason Core*</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Mason Core*</td>
<td>3</td>
<td>Mason Core*</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td>15</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>Third Semester</strong></td>
<td>IT 206 or IT 209 Intro Object Oriented Programming</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT 213 Multimedia and Web</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT 214 Database Fundamentals</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mason Core Natural Science with lab*</td>
<td>4</td>
<td>Mason Core*</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Mason Core*</td>
<td>3</td>
<td>Mason Core*</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td>16</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
<td>STAT 250 Introductory Statistics I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT 216 Systems Analysis and Design</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT 223 Information Security Fundamentals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mason Core*</td>
<td></td>
<td>Mason Core*</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Mason Core*</td>
<td></td>
<td>Mason Core*</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td>15</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>Fifth Semester</strong></td>
<td>IT 207 Applied IT Programming</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT 300 Modern Telecommunications</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT 304 IT in the Global Economy</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT 341 Data Communications and Network</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SYST 469 Human Computer Interaction</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td>15</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>Sixth Semester</strong></td>
<td>IT 342 Operating System Fundamentals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT 343 IT Project Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT Concentration Course</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MBUS 300 Accounting in a Global Economy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td>15</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>Seventh Semester</strong></td>
<td>IT 492 Senior Design Project I</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT Concentration Course</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENGH 302 Adv Comp (Business, Nat Sci, or Multi Disc)**</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td>15</td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

*http://catalog.gmu.edu/mason-core Mason Core Categories: One course from each: Oral Communication, ENGH 100 or 101, Arts, Global Understanding, Literature, Western Civilization/World History, Natural Science w/ Lab, Natural Science Non-Lab. *** ENGH 100 or 101 and Mason Core-Literature must be completed before taking ENGH 302.

Program Questions? Email: bsit@gmu.edu; Website: http://ist.gmu.edu; Advising Appointments: http://ist.gmu.edu/go/advising

Fairfax Campus: Nguyen Engineering Building, Rm. 5400
4400 University Dr., Fairfax, VA 22030, MSN 1GB
Phone (703) 993-3565; Fax (703) 993-2972

Science and Technology Campus: Bull Run Hall, Rm. 102
10900 University Blvd., Manassas, VA 20110, MSN 4F5
Phone (703) 993-8461; Fax (703) 993-8450

If a student decides to declare two concentrations, they would take four courses (12 credits) from each concentration with no overlap, for a total of eight courses (24 credits).