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 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 the following six IT concentration areas: Database Technology and Programming, Healthcare IT, Information Security, Networking and Telecommunications, Web Development and Multimedia and IT Entrepreneurship. The Information Sciences and Technology department is based at the Prince William campus, although 100- and 200-level courses are also available at Fairfax.

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 earn a C or better in any course that satisfies a prerequisite for an IT course. To graduate with the BS degree in IT, 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 five concentration courses as well as their capstone courses.

IT Foundation, Core, Capstone, and Concentration 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 104 Introduction to Computing
   - IT 105 IT Architecture Fundamentals
   - IT 106 Introduction to IT Problem Solving Using Computer Programming
   - IT 206 Object Oriented Techniques for IT Problem Solving
   - 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 Networking Principles
   - IT 343 IT Project Management
   - MBUS 300 Managing Financial Resources
   - MBUS 301 Managing People and Organizations
   - 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
   - Natural Science with Lab
   - Natural Science without Lab
   - MATH 108 Introductory Calculus with Business Applications or
     - MATH 113 Analytic Geometry and Calculus
   - IT 102 Discrete Structures
INFORMATION TECHNOLOGY, B.S.

5. Concentration Area
Students choose one of six concentrations from the list below. 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 six concentrations.

### Database Technology and Programming (DTP)
- IT 306 Program Design and Data Structures
- IT 308 Event-Driven Programming
- IT 314 Database Management
- IT 315 Mobile Development
- IT 322 Healthcare Data Challenges
- IT 344 Information Storage and Management Technologies
- IT 390 Rapid Development of Scalable Applications Credits
- IT 410 Java Web Programming Credits
- IT 414 Advanced Database
- IT 490 Application Maintenance and Spiral Development

### Networking and Telecommunications (NTEL)
- IT 342 Operating Systems Fundamentals
- IT 366 Network Security I
- IT 441 Network Servers and Infrastructures
- IT 445 Advanced Networking Principles II
- IT 455 Wireless Communications and Networking
- IT 465 Peer-to-Peer Systems and Overlay Networks
- IT 484 Voice Communications Technologies
- IT 488 Fundamentals of Satellite Communications

### Web Development and Multimedia (WDM)
- IT 315 Mobile Development
- IT 331 Web I: Web Development
- IT 332 Web Site Administration
- IT 390 Rapid Development of Scalable Applications Credits
- IT 413 Digital Media Editing
- IT 415 Information Visualization
- IT 431 Web II: Advanced Web Development
- IT 436 Agile Web Development

### Healthcare IT (HIT)
- HAP 360 Introduction to Health Information Systems
- IT 322 Healthcare Data Challenges
- IT 324 Electronic Health Records
- IT 390 Rapid Development of Scalable Applications
- STAT 362 Introduction to Computer Statistical Packages

### Information Security (INFS)
- IT 353 Information Defense Technologies
- IT 357 Computer Crime, Forensics, and Auditing
- IT 366 Network Security I
- IT 369 Data and Application Security
- IT 429 Security Accreditation of Information Systems
- IT 462 Information Security Principles
- IT 466 Network Security II
- IT 467 Network Defense

### HealthCare IT (HIT)
- HAP 360 Introduction to Health Information Systems
- IT 322 Healthcare Data Challenges
- IT 324 Electronic Health Records
- IT 390 Rapid Development of Scalable Applications
- STAT 362 Introduction to Computer Statistical Packages

### Information Technology Entrepreneurship (ITE)
- IT 315 Mobile Development
- IT 390 Rapid Development of Scalable Applications
- IT 490 Application Maintenance and Spiral Development
- IT 496 Decision Making in IT Ventures
- MBUS 304 Entrepreneurship: Starting and Managing a New Enterprise

### Sample Schedule for BS in Information Technology (for students without an Associate Degree)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
<th>Second Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGH 101 Composition</td>
<td>3</td>
<td>Nonlab Natural Science</td>
<td>3</td>
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<tr>
<td>HIST 100 History of Western Civilization</td>
<td>3</td>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td>IT 104 Introduction to Computing</td>
<td>3</td>
<td>COMM 100 Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>IT 105 IT Architecture Fundamentals</td>
<td>3</td>
<td>IT 106 Introduction to IT Problem Solving Using Computer Programming</td>
<td>3</td>
</tr>
<tr>
<td>MATH 108 Introductory Calculus with Business Applications</td>
<td>3</td>
<td>IT 102 Discrete Structures</td>
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<tr>
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<td><strong>Total Hours</strong></td>
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<table>
<thead>
<tr>
<th>Third Semester</th>
<th></th>
<th>Fourth Semester</th>
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<tbody>
<tr>
<td>Natural Science with Lab</td>
<td>4</td>
<td>Arts</td>
<td>3</td>
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<tr>
<td>Social/Behavioral Science</td>
<td>3</td>
<td>STAT 250 Introductory Statistics I</td>
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<td>IT 206 Object Oriented Techniques for IT Problem Solving</td>
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<td>IT 207 Applied IT Programming</td>
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<tr>
<td>IT 213 Multimedia and Web Design</td>
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<td>IT 216 Systems Analysis and Design</td>
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<td>IT 214 Database Fundamentals</td>
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<td>IT 223 Information Security Fundamentals</td>
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<tr>
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<th>Sixth Semester</th>
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<tbody>
<tr>
<td>Elective</td>
<td>3</td>
<td>IT Concentration Course</td>
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</tr>
<tr>
<td>ENGH 302 Advanced Composition (Bus/Nat Sci/Tech)</td>
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<td>IT 300 Modern Telecommunications</td>
<td>3</td>
</tr>
<tr>
<td>IT 341 Data Communications and Network Principles</td>
<td>3</td>
<td>IT 304 IT in the Global Economy</td>
<td>3</td>
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<tr>
<td>MBUS 300 Managing Financial Resources</td>
<td>3</td>
<td>IT 343 IT Resources Planning</td>
<td>3</td>
</tr>
<tr>
<td>SYST 469 Human Computer Interaction</td>
<td>3</td>
<td>MBUS 301 Managing People and Organizations</td>
<td>3</td>
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<tr>
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<td><strong>Total Hours</strong></td>
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<td>IT Concentration Course</td>
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<td>Elective</td>
<td>3</td>
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<tr>
<td>Global Understanding</td>
<td>3</td>
<td>IT 493 Senior Design Project II</td>
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<td>Elective</td>
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<tr>
<td>IT 492 Senior Design Project I</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td><strong>Total Hours</strong></td>
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</table>

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