

# INFORMATION TECHNOLOGY MINOR

**Banner Code: INFT**

## Academic Advising

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The minor is designed primarily for students who desire to augment the knowledge gained through their major-related courses with a foundation of information technology (IT) topics and their application within organizations to achieve organizational objectives. Completing this minor provides students with the necessary skills to improve their attractiveness to employers in our technology-driven society.

The minor requires a minimum of 18 credits, including 12 credits of core courses. Beyond these requirements, students must select two additional technical focus courses (6 credits) of which one course must be at the upper 300- or 400-level. Minimum 2.5 GPA is needed in completed 100- and 200-level IT core and foundation courses, and a minimum C in IT 106 or IT 109 is required in order to declare the IT minor. Minimum "C" grade in all IT courses is required to earn the IT minor. Students pursuing the IT minor should consult with an advisor to select their additional courses.

## Admissions & Policies

### Admissions

#### Declaration of Minor

Mason students interested in declaring the Information Technology Minor must earn a C or higher in (IT 106 or IT 196 or IT 109 or CS 112) and earn an average of 2.50 across any courses attempted from (IT 102 or MATH 125), IT 104, IT 105, (IT 106 or IT 196 or IT 109 or CS 112), and any technical focus courses being applied to the IT minor. Grades in approved course substitutions taken at Mason will be included.

Note: IT courses at the 300 and 400 level are restricted to students who have declared an Information Technology major, minor, or undergraduate certificate, and to students in the BAS or BIS program. IT 293 Applied IT: Junior Transition and IT 343 IT Project Management are restricted to students who have declared an Information Technology major. Students who have declared an Information Technology Minor will not be permitted to take IT 293 or IT 343.

### Policies

#### Grades

Students must have a C or better in any course that satisfies a prerequisite for an IT course. To graduate with the Information Technology Minor, students must have a GPA of 2.00 or better across all courses applied to the Information Technology minor. Additionally, if a technical focus course requires a minimum B in a specified course,

students will be held to meeting this prerequisite. Eight credits of coursework must be unique to the minor.

For policies governing all minors, see the Undergraduate Policies (<http://catalog.gmu.edu/policies/academic/undergraduate-policies/>) section of this catalog.

## Requirements

### Minor Requirements

Total credits: 18

#### Core Courses

| Code                  | Title                                                                                                                                              | Credits |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| IT 102<br>or MATH 125 | Discrete Structures<br>Discrete Mathematics I (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> ) | 3       |
| IT 104                | Introduction to Computing (Mason Core) ( <a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a> )                     | 3       |
| IT 105                | IT Architecture Fundamentals                                                                                                                       | 3       |
| IT 106<br>or IT 109   | Introduction to IT Problem Solving Using Computer Programming<br>Introduction to Computer Programming                                              | 3       |
| Total Credits         |                                                                                                                                                    | 12      |

#### Technical Focus Courses

| Code                                                                              | Title | Credits |
|-----------------------------------------------------------------------------------|-------|---------|
| Select 6 credits from Technical Focus Courses (at least 3 upper division credits) |       | 6       |
| Total Credits                                                                     |       | 6       |

Students must satisfy all prerequisites and other requirements in order to take any of the courses listed below. Courses chosen for the technical focus must be chosen with a coordinator in the Information Sciences and Technology department. Not all courses are offered each semester.

| Code                | Title                                                                                            | Credits |
|---------------------|--------------------------------------------------------------------------------------------------|---------|
| IT 206<br>or IT 209 | Object Oriented Techniques for IT Problem Solving<br>Introduction to Object Oriented Programming | 3       |
| IT 207              | Applied IT Programming                                                                           | 3       |
| IT 213              | Multimedia and Web Design                                                                        | 3       |
| IT 214              | Database Fundamentals                                                                            | 3       |
| IT 223              | Information Security Fundamentals                                                                | 3       |
| IT 300              | Modern Telecommunications                                                                        | 3       |
| IT 306              | Data Structures and Algorithms in Java                                                           | 3       |
| IT 309              | Data Structures and Algorithms in Python                                                         | 3       |
| IT 314              | Database Programming                                                                             | 3       |
| IT 315              | Mobile Development                                                                               | 3       |
| IT 322              | Health Data Challenges                                                                           | 3       |
| IT 324              | Health Information Technology Fundamentals                                                       | 3       |
| IT 331              | Web I: Web Development                                                                           | 3       |

|        |                                                  |   |
|--------|--------------------------------------------------|---|
| IT 332 | Web Server Administration                        | 3 |
| IT 335 | Web Development using Content Management Systems | 3 |
| IT 341 | Data Communications and Network Principles       | 3 |
| IT 352 | Security Administration of Linux Systems         | 3 |
| IT 353 | Information Defense Technologies                 | 3 |
| IT 357 | Computer Crime, Forensics, and Auditing          | 3 |
| IT 366 | Network Security                                 | 3 |
| IT 369 | Data and Application Security                    | 3 |
| IT 390 | Rapid Development of Scalable Cloud Applications | 3 |
| IT 409 | Python Web Programming                           | 3 |
| IT 410 | Web Programming                                  | 3 |
| IT 414 | Database Administration                          | 3 |
| IT 415 | Information Visualization                        | 3 |
| IT 429 | Security Accreditation of Information Systems    | 3 |
| IT 431 | Web II: Advanced Web Development                 | 3 |
| IT 442 | Cloud Infrastructure                             | 3 |
| IT 445 | Advanced Networking Principles                   | 3 |
| IT 451 | Cloud Services Management                        | 3 |
| IT 455 | Wireless Communications and Networking           | 3 |
| IT 461 | Application Development in Cloud                 | 3 |
| IT 462 | Applied Cyber Threat Analysis                    | 3 |
| IT 466 | Foundations of Cryptography and Security         | 3 |
| IT 467 | Network Defense                                  | 3 |
| IT 471 | Big Data on Cloud Systems                        | 3 |
| IT 481 | Cloud Security                                   | 3 |
| IT 484 | Voice Communications Technologies                | 3 |
| IT 488 | Fundamentals of Satellite Communications         | 3 |