

# INFORMATION TECHNOLOGY, MASTER OF SCIENCE

The Master of Science (M.S.) in Information Technology program is designed to attract IT professionals in the Science, Technology, Engineering and Mathematics (STEM) fields who wish to advance their career opportunities in information technology industries. (An additional 3 credits may be required for applicants who are unable to demonstrate competencies in the foundation areas.) The mission of the MSIT program is to equip students with the advanced knowledge, skills and IT competencies required to be effective leaders in diverse, multi-disciplinary IT enterprises. This MSIT program offers an in-depth understanding of information technology and cyber security, as well as social, legal, and managerial issues in the field.

The program is ideal for those working or planning to work in the following areas:

- Information Security
- Web Technology
- Digital Forensics
- Web Programming
- Client and Server Site Technology
- Cyber Security

## Program Delivery and Tuition Rate

This program is delivered through online instruction, providing flexibility and convenience for busy individuals balancing work, family and personal obligations. Students may complete the program on a full-time or part-time schedule. Full-time enrollment for students who want to complete the program in 20 months requires enrolling in 9 credits per term and in 3 to 6 credits during the summer terms. Part-time students may complete the program in 24-27 months. The program is billed at the non-MBA rate.

## Admission

Admission to this program is selective. This program enrolls new students in the fall, spring, and summer terms. Applicants should possess a bachelor's degree with foundational knowledge or experience in computer programming and computer networks. A candidate who is found to be lacking the proper foundational knowledge may be accepted into the program, but will be required to take the additional 3-credit MSIT foundation course:

Code	Title	Credits
INFT 6122	Essentials of Information Technology	3

## Application

Please see the Graduate Admissions (<http://catalog.esc.edu/graduate/admission/>) pages of this catalog for a complete listing of materials required to complete a graduate application.

## Program Curriculum

The MSIT, at its start, will have four core courses and two concentrations from which to choose. The core will emphasize fundamental information technology skills in computer security, and web technology, including a project based capstone and hands-on, real-world practices in the

student's field of interest. The Cybersecurity concentration will allow students to focus on information security and digital forensics skills, while the Web Technology concentration offers instruction in web programming including client and server site technology, and cyber security. The MSIT program may be completed within two years.

*\*PLEASE NOTE: The cybersecurity concentration will no longer be offered after the Fall 2023 term through this program. Students who wish to pursue this field of study may apply for SUNY Empire's Master of Science (M.S.) in Cybersecurity which will begin in Spring 2024.*

All concentrations follow this curriculum and the enrollment sequences below:

Code	Title	Credits
<b>Foundation Course</b>		
INFT 6122	Essentials of Information Technology <sup>1</sup>	3
<b>Core Courses</b>		
INFT 6127	Information Technology in Organizations	3
INFT 6132	Network Administration	3
INFT 6137	Enterprise Systems Architecture	3
INFT 6142	Computer Systems Security	3
<b>Concentration Courses</b>		<b>12</b>
Students take the 4 designated courses of the Cyber Security or Web Technology concentrations. See the full enrollment sequencing for each concentration below.		
<b>Electives</b>		<b>6</b>
Students choose two elective courses to reflect their interests and to reinforce the individual focus of their degree.		
<b>Capstone Course</b>		<b>3</b>
The capstone a student is required to take will depend on the concentration they have chosen. See the full enrollment sequencing for each concentration below.		
<i>Total Credits 33-36 <sup>1</sup></i>		

<sup>1</sup> Applicants to the MSIT program who can not demonstrate foundation knowledge in computer programming and computer networks will be required to take the additional 3-credit course INFT-6122 Essentials of Information Technology. This will result in a 36-credit degree as shown in the enrollment sequences.

## Enrollment Sequences

### Cybersecurity Concentration (Part-time schedule)\*

Course	Title	Credits
<b>First Year</b>		
<b>Fall</b>		
INFT 6122	Essentials of Information Technology <sup>1</sup>	3
INFT 6127	Information Technology in Organizations	3
INFT 6132	Network Administration	3
<b>Credits</b>		<b>9</b>
<b>Spring</b>		
INFT 6137	Enterprise Systems Architecture	3
INFT 6142	Computer Systems Security	3
<b>Credits</b>		<b>6</b>
<b>Summer</b>		
INFT 6045	IT Security Policies & Procedure	3

Elective 1		3
	<b>Credits</b>	<b>6</b>
<b>Second Year</b>		
<b>Fall</b>		
INFT 6055	Digital Forensics	3
INFT 6147	Enterprise Information Security Management	3
	<b>Credits</b>	<b>6</b>
<b>Spring</b>		
INFT 6157	Data and Application Security	3
INFT 7005	Cyber Security Integration Strategies (Capstone)	3
	<b>Credits</b>	<b>6</b>
<b>Summer</b>		
Elective 2		3
	<b>Credits</b>	<b>3</b>
	<b>Total Credits</b>	<b>36</b>

<sup>1</sup> Applicants to the MSIT program who can not demonstrate foundation knowledge in computer programming and computer networks will be required to take the additional 3-credit course INFT-6122 Essentials of Information Technology. This will result in a 36-credit degree as shown in the enrollment sequences.

## Web Technology Concentration (Part-time Schedule)

Course	Title	Credits
<b>First Year</b>		
<b>Fall</b>		
INFT 6122	Essentials of Information Technology <sup>1</sup>	3
INFT 6127	Information Technology in Organizations	3
INFT 6132	Network Administration	3
	<b>Credits</b>	<b>9</b>
<b>Spring</b>		
INFT 6137	Enterprise Systems Architecture	3
INFT 6142	Computer Systems Security	3
	<b>Credits</b>	<b>6</b>
<b>Summer</b>		
INFT 6040	Advanced Internet Application Development	3
Elective 1		3
	<b>Credits</b>	<b>6</b>
<b>Second Year</b>		
<b>Fall</b>		
INFT 6015	Database Design and Management	3
INFT 6152	Enterprise Web Systems	3
	<b>Credits</b>	<b>6</b>
<b>Spring</b>		
INFT 6050	Mobile Systems Development	3
INFT 7010	Web Systems Integration Strategies (Capstone)	3
	<b>Credits</b>	<b>6</b>
<b>Summer</b>		
Elective 2		3
	<b>Credits</b>	<b>3</b>
	<b>Total Credits</b>	<b>36</b>

<sup>1</sup> Applicants to the MSIT program who can not demonstrate foundation knowledge in computer programming and computer networks will be required to take the additional 3-credit course INFT-6122 Essentials of Information Technology. This will result in a 36-credit degree as shown in the enrollment sequences.

Upon successful completion of the program, students will be able to:

- *Disciplinary Knowledge:* Identify and apply IT principles, method and frameworks for the business enterprise and the relevant technology;
- *Professional Decision Making:* Strategic analysis, design, implement and evaluation of computer technologies, systems, processes, components and/or programs appropriate to a defined task, while analyzing the impact on existing systems and potential future applications;
- *Master of Methods and Tools:* Critically evaluate relevant technical and business information and emerging industry trends from multiple sources;
- *Capacity for Innovation and Collaboration:* Implement effective IT solutions that demonstrates appropriate consideration of alternative computer technologies, including networks, servers, programming languages and database systems; Develop, analyze and defend solutions to networking and security problems that demonstrate an appropriate balance among security needs, business concerns, confidentiality, availability and system integrity; and
- *Ethics and IT Compliance:* Acknowledge and adhere to the Law and Policy Regulation, standards of ethics, including relevant industry and organizational codes of conduct, in the design of technology.