The rapidly evolving landscape of technology and related cyber challenges requires an understanding of network and cyber operations, data analytics and forensics, cyber security, decision science, politics and strategy, international security, and the ability to apply best practices to solutions. The Master of Information Technology Strategy (MITS) program seeks to produce leaders with the critical thinking skills and strategic perspective needed to solve challenges within the information and cyber domains.

With faculty, research centers, and degree programs of international renown, the program leverages Carnegie Mellon’s broad expertise in the critical areas of Cyber Security and Information Dominance, drawing from CMU’s Carnegie Institute of Technology, Dietrich College of Humanities and Social Sciences, and School of Computer Science.

PROGRAM CHARACTERISTICS

MITS is a three-semester, full-time, campus program, with an optional one semester extension. Its curriculum consists of 5 components: core coursework, an area of concentration, elective courses, the Seminar, and the Project.

Core Courses and Concentration Areas: The MITS program has four core and concentration areas (detailed on reverse side):
- Information Security
- Data Analytics
- Politics and Strategy
- Software and Networked Systems

Elective Courses: Elective courses allow students to explore a concentration area in greater depth, or to pursue topics outside of their concentration. With more than 45 elective courses spanning the concentration areas, students are able to strategically tailor the program to align with their personal and professional goals.

Seminar: The Seminar provides students with an opportunity to broaden their understanding of Cyber Security and Information Dominance. In its position as a global leader in technology and strategy, Carnegie Mellon hosts military and civilian leaders for campus-wide talks and in-depth seminars in the MITS program.

Project: The Project promotes team-based engagement on a real-world problem related to Cyber Security and Information Dominance. Information on past projects can be found on the MITS website (www.cmu.edu/mits).
ONE PROGRAM, MANY STRENGTHS

MITS focuses on four thematic areas collectively spanning disciplines that are essential in developing astute, knowledgeable, and practiced leaders in Cyber Security and Information Dominance.

Information Security
An understanding of cyber threats and the mitigation of their impact ensures that program graduates are equipped to address the dangers of cyber-attacks. Courses include:

- Introduction to Computer/Network Security and Applied Cryptography
- Secure Software Engineering
- Applied Information Assurance
- Information Security Risk Management
- Secure Software Systems

Data Analytics
For tomorrow’s leaders in Information Dominance to be successful, the extraction of knowledge from large systems of data is essential. Such extraction requires mastery in techniques such as machine learning, social network analysis, and large-scale data reduction and filtering. Courses include:

- Machine Learning in Practice
- Dynamic Network Analysis
- Very Large Information Systems
- Information Retrieval
- Multimedia Databases and Data Mining

Politics and Strategy
The ability to demonstrate sound reasoning about policy and strategy are invaluable skills for individuals who will shape the future of IT strategy. Courses include:

- Behavioral Decision Making
- Concepts of War and Cyber War
- Decision Science and Policy
- Diplomacy and Statecraft
- Grand Strategy in the United States
- Policies of Wireless Systems and the Internet

Software and Networked Systems
An understanding of system and software architecture is needed for the management of safe, secure, and reliable information infrastructures. Courses include:

- Architectures for Software Systems
- Distributed Systems
- Packet Switching and Computer Networks
- Mobile and Pervasive Computing Systems Architecture for Managers