



THE EDGE IN KNOWLEDGE

Master of Science in Cyber Security & Privacy



Department of Computer Science

College of Computing Sciences

New Jersey Institute of Technology

WHY PURSUE A MASTER'S DEGREE IN CYBER SECURITY & PRIVACY?

Over the next decade, the need for cyber security specialists is expected to grow rapidly in both government and private sectors, which plan significant investments to protect computer systems and networks. The reliance of critical industries such as transportation, energy or finance on computer systems and networks, coupled with a growing number of cyber attacks accentuates the need for expertise in defensive techniques against cyber threats. As larger amounts of sensitive data are being transmitted and stored electronically, and as more databases are being connected to the Internet, data security and privacy becomes increasingly important. Moreover, the ever-growing software complexity and attack sophistication has given rise to new software needs.

WHY STUDY CYBER SECURITY & PRIVACY AT NJIT?

NJIT has a long history of innovation in digital communications and has been designated a Center of Academic Excellence in Information Assurance Education by the National Security Agency. NJIT is the only public university in the state and region that offers such a degree. With one of the most computing intensive campuses in the nation, NJIT has also pioneered new technologies as learning tools. NJIT's College of Computing Sciences has an outstanding faculty dedicated to preparing students for exciting careers. Not coincidentally, New Jersey is one of the leading states for computing and high technology businesses. Thirty of the nation's fastest growing technology companies are based in the state, and New Jersey ranks 7th in the nation as a cyberstate and 8th for venture capital investment - \$3.5 billion - in information technology and software. New Jersey offers the highest median salary in the nation for information systems managers.

DEGREE OVERVIEW

The objective of the MS in Cyber Security and Privacy program is to create a strong foundation and detailed technical knowledge in security, privacy/anonymity, and cryptography applied to computer systems, networks, and web applications. Graduates will have broad expertise in all these areas, with an option to cover not only technical but also legal, policy, and ethical aspects of security and privacy. In addition to in-depth knowledge of security mechanisms, standards, and state-of-the-art capabilities, they will also be able to design new systems and infrastructure-level security solutions.

COMPUTING RESOURCES

The computer and information science department maintains and offers computing facilities for its students, faculty, and staff. There is a broad range of laboratories available, including many with Internet access, multimedia facilities, and support for all major operating systems (Linux/Windows/Mac). The Center for Information Protection also provides a laboratory with a network of wired and wireless computers that can be used as a test bed for educational and research purposes. Other computing facilities include research laboratories in areas such as networking, real-time systems, hypermedia, parallel processing, and collaborative systems. Students have access to the state-of-the-art software and hardware including Oracle database, UNIX-based workstations and Microsoft Windows PCs supported by file and compute servers. Internet access, departmental intranets, and conferencing systems provide an integrated infrastructure for supporting teaching and research.

DEGREE REQUIREMENTS: 30 CREDITS

6 Core

CS 608	Cryptography & Security
CS 645	Security & Privacy in Computer Systems
CS 656	Internet & Higher-Layer Protocols
CS 696	Network Management & Security
CS 698	Network Protocols Security
CS 698	Counter-Hacking Techniques

4 Electives

Selected from an approved list

REAL-WORLD & RESEARCH OPPORTUNITIES

There are abundant co-op and internship opportunities exploring cutting-edge science and technology. Students also have opportunities to get involved in groundbreaking research with NJIT faculty in all areas of computing.

DEVELOP NEW SKILLS & KNOWLEDGE

- Analyze new and existing security threats and devise solutions against them.
- Perform sophisticated security design review of applications and infrastructure.
- Investigate security breaches and perform forensic analysis.
- Design, develop, and maintain new tools and technologies to enhance the security of applications and infrastructure.
- Conduct research on existing and emerging security threats and vulnerabilities.

POSSIBLE CAREER OPTIONS

- Information Security Engineer
- Network Security Engineer
- Network Security Architect
- Systems and Software Security Engineer

FINANCIAL AID

Student Financial Aid Services helps provide NJIT students with every opportunity to obtain funding to support their educational costs. To apply for financial aid please visit: njit.edu/financialaid/

ADMISSION REQUIREMENTS

Applicants are expected to have:

- An undergraduate degree in computer science or a related field, with a minimum GPA of 3.0 on a 4.0 scale.
- GRE scores (Verbal 143, Quantitative 151, Analytical 4.0) for all foreign degree holders.
- TOEFL scores (minimum of 79 for all visa holders).

Applicants not satisfying these criteria will be considered for conditional admission on a case-by-case basis and may be required to complete a bridge program outlined in their acceptance letter.

FOR MORE INFORMATION CONTACT:

ccs-advising@njit.edu
cs.njit.edu/academics/graduate/mscsp.php

TO APPLY:

Office of Graduate Admissions
(973) 596-3300
njit.edu/admissions/graduate/apply_online.php