



Be the hero! With a degree in Cybersecurity, you will have the unique skillset to protect information on a global scale. Today, more than ever, there is a strong need for professionals interested in finding ways to make our information technology safer.

CYBERSECURITY AT IS&T

The Master of Science degree in Cybersecurity was established in 2012 (formerly Information Assurance) to meet the growing demand for security experts. Cybersecurity is the practice of managing information-related risks by ensuring confidentiality, integrity, authentication, availability, and non-repudiation of data. The Cybersecurity programs at IS&T give students exposure to a broad range of issues related to information and network security.

The Cybersecurity program is maintained by NUCIA, the Nebraska University Center for Information Assurance. NUCIA is one of the Academic Centers of Excellence supported by the National Security Agency. NUCIA also features a network of laboratories built specifically for Information Assurance training and research called STEALs, Security Technology Education and Analysis Laboratories.

UNO has been named a Center of Academic Excellence in Information Assurance by the National Security Agency (NSA).

Concentrations in Information Assurance are also available to graduate students in Management Information Systems (MIS).

WHY A GRADUATE DEGREE AT IS&T

Master's education is the fastest-growing and largest segment of graduate education. Many students and professionals recognize that in order to be competitive in the marketplace, additional skills and education are necessary. They are right.

According to the U.S. Bureau of Labor Statistics, employment in occupations that typically require a master's degree will increase by 18 percent between 2008 and 2018, and the potential income gain from achieving a master's degree is substantial. On average, employers will pay 15 percent more to those who hold a master's degree than those with a bachelor's degree. Master's degrees are key to future employment and career advancement.

JOB OUTLOOK

The outlook for Cybersecurity professionals is huge. As we continue to progress into more and more paperless environments, the number of professionals needed to protect these environments is projected to increase significantly. Security professionals are experiencing growth in job prospects, career advancement, higher base salaries and salary premiums at faster rates than other areas of information technology.

Example Job Titles

- Information Assurance Specialist
- Chief Information Officer
- Information Assurance Architect
- Secure Applications Developer
- Network Security Administrator
- IA Vulnerability Analyst
- IT Security Manager
- IA Lead Programmer
- Information Assurance Engineer

Benefits

- Advance your career
- Gain credentials
- Hone professional skills
- Earn a higher salary (15 percent more than someone with a bachelor's degree)
- Change careers
- Increase leadership abilities

Programs Offered

- MS Cybersecurity
- Graduate Certificates
- Integrated Undergraduate/Graduate

CURRICULUM

The Master of Science in Cybersecurity requires completion of a minimum **33 credit hours** which include the following

Foundation Courses (9 hours, if not waived)

- CSCI 2240 - Intro to C Programming OR
CYBR 2250 - Low Level Programming
- CSCI 3550 - Communications Network
OR ISQA 3400 - IT Infrastructure
- CYBR 3350 - Security Administration-Linux OR
CYBR 3370 - Security Administration-Windows

Core Courses (12 hours)

- CYBR/CSCI 8366 - Foundations of Information Assurance
- CYBR/CSCI 8410 - Distributed Systems & Network Security
- CYBR/CSCI 8420 - Software Assurance
- CYBR 8386 - Computer & Network Forensics

Cyber Operations Concentration, Electives (15-18 hours)

- CYBR 8080 - Special Topics in Information Assurance
- CYBR 8436 - Quantum Computing and Cryptography
- CYBR 8440 - Secure Systems Engineering
- CYBR 8446 - Industrial Control System Security
- CYBR 8450 - Applied Cryptography
- CYBR 8456 - Host-Based Vulnerability Discovery
- CYBR 8460 - Security of Embedded Systems
- CYBR 8466 - Network-Based Vulnerability Discovery
- CYBR 8470 - Secure Web Application Development
- CYBR 8900 - Independent Study in Information Assurance
- CYBR 8910 - Internship
- CYBR 8986 - Special Topics in Information Assurance
- CSCI 8430 - Trusted System Design,
Analysis, and Development

Interdisciplinary Concentration, Electives (15-18 hours)

- ISQA 8060 - Research in MIS
- ISQA 8080 - Seminar in Management Information Systems
- ISQA 8530 - E-Commerce Security
- ISQA 8546 - Computer Security Management
- ISQA 8560 - Information Warfare & Security
- ISQA/CYBR 8570 - Information Security Policy & Ethics
- ISQA 8580 - Security Risk Management & Assessment
- ISQA 8596 - I.T. Audit and Control
- CSCI 8340 - Database Management Systems II
- CSCI 8430 - Trusted System Design, Analysis & Development
- CSCI 8530 - Advanced Operating Systems
- CSCI/MATH 8566 - Number Theory & Cryptography
- CSCI 8610 - Fault Tolerant Distributed Systems
- CYBR 8080 - Special Topics in Information Assurance
- CYBR 8900 - Independent Study in Information Assurance
- CYBR 8910 - Internship
- CYBR 8986 - Special Topics in Information Assurance

Exit Requirements (3 or 6 hours)

- CYBR 8950 - Capstone in Information Assurance (3 hours) OR
- CYBR 8990 - Thesis in Information Assurance (6 hours)