

# School of Sciences

## Master of Science in Cybersystems and Information Security



### Description:

The Master of Science degree program in Cybersystems and Information Security (CSIS) prepares students to become leaders in the field of information and network security, offering instruction and research opportunities that provide graduates with the necessary knowledge and skills to effectively assess, develop, and manage secure information networks and to respond to newly developed threats. This program offers a unique opportunity for students to learn to:

- ❖ Identify and respond to information security challenges in distributed and embedded systems.
- ❖ Evaluate and recommend technological tools and protocols to protect against risks.
- ❖ Integrate the use of encryption technology in non-secure and non-private computers and systems.
- ❖ Design and conduct research in the area of cybersystems and information security.
- ❖ Critically evaluate and apply research to computer and cybersystems threats.

### Why a master's degree in CSIS is important:

There is an ever-increasing need in society for greater cybersystems and information security. This calls for the development of leaders who can implement, monitor, and respond to security issues, as well as researchers who can develop original and innovative technologies to improve cybersystems security. The Cybersystems and Information Security master's program will provide specialized training in computer network and information security, secure software engineering, operating system security, secure network engineering, and applied cryptology.

### Preparation for program admission:

- ❖ Undergraduate degree in Computer Science or a related field. Other majors may require prerequisite coursework.

### Students in this program will develop skills to:

- ❖ Demonstrate an understanding of the technical, management, and policy aspects of cybersystems and information security.
- ❖ Recognize the impact of security issues related to software engineering on distributed information systems.
- ❖ Assess information risks faced by an organization and develop a response plan.
- ❖ Demonstrate an understanding of technological and human engineering problems linked to security risks.
- ❖ Assess the impact of information security policies, and market developments on complex systems and organizational objectives.
- ❖ Mitigate system vulnerabilities and restore compromised services.
- ❖ Manage the development, acquisition, and evolution of a secure information network.
- ❖ Construct secure networked and distributed computer systems.
- ❖ Troubleshoot large-scale information networks and distributed systems.
- ❖ Develop a strategy for lifelong learning and professional development in information security disciplines.

### Students in this program can find jobs in:

- ❖ Information Technology
- ❖ Homeland Security
- ❖ Government and State Agencies
- ❖ Private Business
- ❖ Armed Forces

### Students in this program will be instructed by:

Qualified faculty from Auburn University at Montgomery, Auburn University, and also experienced instructors and practitioners from the IT industry professionally affiliated with Cybersystems and Information Security issues.

**A vision for the 21st Century:  
Cybersystems & Information Security**

### Location:

Auburn Montgomery campus and online at [www.aum.edu/csis](http://www.aum.edu/csis)

### Starting Semester:

Fall (August) 2011

### CSIS Courses:

The curriculum consists of 36 semester hours with thesis or nonthesis options. Courses are taught by faculty from the Schools of Sciences and Business at AUM, and in partial collaboration with the Auburn University Department of Computer Science and Software Engineering.

- CSIS 6003:** Introduction to Computer Security, 3hrs.
- CSIS 6010:** Data Communications & Computer Networks, 3 hrs.
- CSIS 6013:** Network Security & Reliability-Quantitative Metrics, 3 hrs.
- CSIS 6020:** Distributed Systems, 3 hrs.
- CSIS 6033:** Secure Software Systems, 3 hrs.
- CSIS 6040:** Applied Cryptology, 3 hrs.
- CSIS 6053:** Information Security Management, 3 hrs.
- CSIS 6403:** Computer Systems Modeling & Simulation, 3 hrs.
- ACCT 6180:** Financial Accounting/Integrated Business Concepts, 3 hrs.

### Without thesis option:

- QMTD 6750:** Operations Research, 3 hrs.
- CSIS 6912:** Supervised Practicum with Cyber-Industry Experience, 3 hrs.
- CSIS: 6952:** Security Policy Seminar: Healthcare, Finance, Business, or Government, 3 hrs.

### With thesis option:

- CSIS 6992:** MS Research Thesis, 9 hrs.

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