

# Secure Computing and Information Assurance

**MAJOR**

**MINOR**

**SEE RELATED PROGRAMS:**

- COMPUTER INFORMATION SYSTEMS MAJOR & MINOR
- COMPUTER SCIENCE MAJOR & MINOR
  - CONCENTRATION IN NETWORKS
- INFORMATION TECHNOLOGY MAJOR & MINOR

**Professors:** Chitsaz, Rinard (Chair)

**Associate Professors:** M. Flinn, Zheng

**Assistant Professors:** Pan, Xiao, Xu

**Lecturers:** Gbenro, S. Kennedy

- You must earn a grade of C or better in all computer science, information technology, and secure computing courses to be applied towards major or minor requirements.
- You may receive credit by examination for the following courses: COSC 100, 101, 240.

**Program Objectives and Outcomes**

**Problem Solving and Critical Thinking.** Solve problems by creating secure computing and information assurance environments, analyzing computing environments and implementing policies and practices to guarantee secure computing and information assurance environments. The student will be able to:

- Apply programming and system management techniques to address secure computing and information assurance problems
- Perform critical analyses of the impacts of decisions
- Participate in forensic analysis of hardware, software and systems

**Communication and Interpersonal Skills.** Use written, oral and electronic methods for effective communication. The student will be able to:

- Document all aspects of a system precisely and clearly
- Document and communicate organizational secure computing and information assurance strategies, practices and policies

- Use written, oral, and electronic communication to convey technical information effectively
- Work cooperatively in teams and with others

**Ethical and Professional Responsibilities.** Discern and articulate the impact of secure computing and information assurance on society. The student will be able to:

- Determine the economic and organizational effects of secure computing and information assurance on global society
- Recognize important legal issues and demonstrate appropriate social responsibilities in secure computing and information assurance
- Demonstrate an awareness of the codes of professional ethics in secure computing and information assurance
- Plan for and ensure the security, privacy and integrity of data
- Recognize the need for continuing professional development

**Program Requirements**

	MAJOR	MINOR
Hours Required in Computer Science:	61	20
Hours Required in Other Departments:	12-13	0
Total Hours Required:	73-74	20

**Requirements for Major in Secure Computing & Information Assurance**

**1. Core Courses: (25 hours)**

- COSC 101 The Discipline of Computer Science (*Tech. Fluency*)
- COSC 102 Foundations of Computer Science
- SCIA 120 Introduction to Secure Computing and Information Assurance
- SCIA 210 Introduction to Cyber Law
- COSC 240 Computer Science I
- COSC 241 Computer Science II
- SCIA 340 Secure Databases
- SCIA 489 Capstone Course

**2. Required Advanced Courses: (27 hours)**

- COSC 331 Fundamentals of Computer Networks
- SCIA 325 Software Security Engineering
- SCIA 335 Network Security
- SCIA 360 Operating System Security
- SCIA 370 Security Policy and Assessment
- SCIA 460 Cloud Computing and Security
- SCIA 470 Computer and Network Forensics I
- SCIA 471 Computer and Network Forensics II
- SCIA 472 Hacking Exposed and Incident Response

**3. Other Required Courses: (12-13 hours)**

CMST 102/112 Introduction to Human Communication  
 ENGL 338 Technical Writing (*Core Skill 2*)  
 MATH 109/110 Elements of Applied Probability & Statistics  
 (*Core Skill 3*)  
 or MATH 380 Intro. To Probability & Statistics  
 MATH 220 Calculus for Applications I  
 or MATH 236 Calculus I (*Core Skill 3*)

**4. Electives: (9 hours)**

*A minimum of 9 hours in at least three courses:*

COSC 305 Computer Ethics  
 ITEC 442 Electronic Commerce  
 SCIA 425 Software Testing and Assurance  
 SCIA 435 Access Control  
 SCIA 480 Applied Cryptography  
 SCIA 485 Emerging Issues and Cyber Warfare  
 SCIA 491 Seminar in Secure Computing and Information  
 Assurance  
 SCIA 494 Field Experience in Secure Computing and  
 Information Assurance  
 SCIA 499 Individual Problems in Secure Computing and  
 Information Assurance

## Requirements for Minor in Secure Computing & Information Assurance

COSC 101 The Discipline of Computer Science  
 COSC 102 Foundations of Computer Science  
 SCIA 120 Introduction to Secure Computing and Information  
 Assurance  
 COSC 240 Computer Science I  
 SCIA 370 Security Policy and Assessment  
*One additional three-credit Secure Computing & Information  
 Assurance course at the 300-level or above*