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

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

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<th>MAJOR</th>
<th>MINOR</th>
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<tr>
<td>Hours Required in Computer Science:</td>
<td>61</td>
<td>20</td>
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<td>Hours Required in Other Departments:</td>
<td>12-13</td>
<td>0</td>
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<td>Total Hours Required:</td>
<td>73-74</td>
<td>20</td>
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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