

Computer Science, MSCS

Advising Guide

**COMPUTER SCIENCE
AND ENGINEERING**

Name & UID: _____

Program Total: 30**Year One**

Course	Cr	Semester	Grade	Course Name
CEG 6420	3			Host Computer Security
CEG 6424	3			Security Attacks & Defenses
CEG 6430	3			Cyber Network Security
CEG 6750	3			Information Security

Total Credit Hours: 12**Year Two Thesis Option**

Course	Cr	Semester	Grade	Course Name
Elective One	3			Choose from back
Elective Two	3			Choose from back
Elective Three	3			Choose from back
CEG or CS 7950	9			Master's Thesis Research in Computer Engineering or Computer Science

Total Credit Hours: 18**Year Two Capstone Option**

Course	Cr	Semester	Grade	Course Name
Elective One	3 - 6			Choose from back
Elective Two	3 - 6			Choose from back
Elective Three	3 - 6			Choose from back

CS 7960	6			Capstone Project – Cyber Security
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Total Credit Hours: 18

Year Two Cyber Defense Concentration

Course		Cr	Semester	Grade	Course Name
CEG 6422		3			Secure Computing Practices
CEG 6426		3			Legal Aspects of Cyber Security
Elective		3			Choose From Back
CEG or CS 7950		9			Master's Thesis Research in Computer Engineering or Computer Science

Total Credit Hours: 18

Cyber Security Elective Options:

1. Cyber Security Practices and Policies

- CEG 6422 - Secure Computing Practices (3 credit hours)
- CEG 6426 - Legal Aspects of Cyber Security (3 credit hours)
- CS 7600 - Trust Networks (3 credit hours)
- CS 7850 - Privacy Aware Computing (3 credit hours)

2. Cryptography and Data Security

- CS 6290 / MTH 6290 - Cryptography and Data Security (3 credit hours)
- EE 7400 - Information Theory (3 credit hours)

3. Advanced Networking and Wireless Systems

- CEG 7450 - Advanced Computer Networks (3 credit hours)
- CEG 7470 - Advanced Wireless Networks (3 credit hours)
- CEG 6450 - Sensor Networks and Systems (3 credit hours)

4. Cloud Computing and Distributed Systems

- CEG 6360 - Distributed Systems & Cloud Computing (3 credit hours)
- CEG 7370 - Distributed Computing (3 credit hours)
- CEG 7380 - Cloud Computing (3 credit hours)

5. Secure Software and Systems Analysis

- CEG 7420 - Reverse Engineering & Program Analysis (3 credit hours)
- CEG 6440 - Android Internals & Security (3 credit hours)

6. Hardware Security and Circuit Design

- CEG 7050 / EE 7550 - Trust in Integrated Circuit Design (3 credit hours)
- CEG 6324 - Digital Integrated Circuit Design with PLDs and FPGAs (3 credit hours)
- CEG 6324L - Digital Integrated Circuit Design with PLDs & FPGAs Lab (1 credit hour)

7. Visualization and Emerging Cyber Topics

- CEG 7560 - Visualization & Image Processing for Cyber Security (3 credit hours)
- CEG 6900 - Special Topics in CEG (1 to 4 credit hours)
- CS 6900 - Special Topics in Computer Science (1 to 4 credit hours)

8. Research and Independent Study

- CEG 6970 / 7920 / 8920 - Independent Study in Computer Engineering (1 to 6 credit hours)
- CS 6970 / 7920 / 8920 - Independent Study in Computer Science (1 to 6 credit hours)

Cyber Defense Concentration Elective Options – Pick One:

1. Cyber Security Practices and Privacy

- CS 7600 - Trust Networks (3 credit hours)
- CS 7850 - Privacy Aware Computing (3 credit hours)

2. Cryptography and Data Security

- MTH 6290 - Cryptography and Data Security (3 credit hours)
- EE 7400 - Information Theory (3 credit hours)

3. Advanced Networking and Wireless Systems

- CEG 7450 - Advanced Computer Networks (3 credit hours)
- CEG 7470 - Advanced Wireless Networks (3 credit hours)
- CEG 6450 - Sensor Networks and Systems (3 credit hours)

4. Cloud Computing and Distributed Systems

- CEG 6360 - Distributed Systems & Cloud Computing (3 credit hours)
- CEG 7370 - Distributed Computing (3 credit hours)
- CEG 7380 - Cloud Computing (3 credit hours)

5. Secure Software and System Analysis

- CEG 7420 - Reverse Engineering & Program Analysis (3 credit hours)
- CEG 6440 - Android Internals & Security (3 credit hours)

6. Hardware Security and Circuit Design

- CEG 6324 - Digital Integrated Circuit Design with PLDs and FPGAs (3 credit hours)
- CEG 7050 / EE 7550 - Trust in Integrated Circuit Design (3 credit hours)

7. Emerging Technologies and Visualization

- CEG 6410 - Mobile Computing (3 credit hours)
- CEG 7560 - Visualization & Image Processing for Cyber Security (3 credit hours)