Choose Your Major

Masters of Science in Computer Science
CS 7200

Masters of Science in Computer Engineering
CEG 7360

Masters of Science in CyberSecurity
CEG 6430, CEG 6420, CEG 6424, CEG 6750

1. Complete the core courses for your Major
2. Choose an area of specialty and take courses within your area.
3. Make sure the courses satisfy the graduation requirement of your program

How to Plan Your Program Of Study

Choose An Area Of Specialty

Software:
CS 6370, CS 7100, CS 7120, CS 7140, CS 7200, CS 7220, CEG 6110, CEG 6120, CEG 6130, CEG 6180, CEG 6360, CEG 6910

Hardware:
CS 6230, CEG 6232, CEG 6234, CEG 6330, CEG 7020, CEG 7030, CEG 7040, CEG 7080, CEG 7350, CEG 7360, CEG 7370, CEG 7450, CEG 7470

Intelligent Systems:
CS 6840, CS 6850, CS 7800, CS 7820, CS 7830, CS 7840, CEG 6870, CEG 7060

Data Analysis:
CS 6700, CS 6710, CS 7700, CS 7720, CS 6800, CEG 7570

Vision and Graphics:
CEG 6500, CEG 6510, CEG 6520, CEG 6590

Mathematics of Computation:
CS 6240, CS 6270, CS 6320, CS 7060, CS 7070, CEG 6260

Secure Software/Hardware:
CS 6290, CS 7600, CS 7850, CEG 6410, CEG 6422, CEG 6450, CEG 7370, CEG 7380, CEG 7420, CEG 7440, CEG 7450, CEG 7470, CEG 7560, EE 7400, EE 7550

Graduate Areas of Specialty

SOFTWARE
CS 6370 Parallel Programming for Many-Core GPUs
CS 7100 Advance Programming Languages
CS 7120 Functional and Logic Programming
CS 7140 Advanced Software Engineering
CS 7200 Algorithm Design and Analysis
CS 7720 Data Mining
CS 6110 Introduction to Software Engineering

HARDWARE
CEG 6230 Introduction to Robotics
CEG 6322 VLSI Design
CEG 6324 Digital IC Design with PLDs & FPGAs
CEG 6330 Microprocessor-based Embedded Systems
CEG 7020 Low Power VLSI System Design
CEG 7030 VLSI Testing & Design for Testability
CEG 7040 VLSI Design Synthesis and Optimization
CEG 7080 CMOS Mixed Signal IC Design

SECURE SOFTWARE/HARDWARE
CS 6290 Cryptography & Data Security
CS 7600 Trust Networks
CS 7850 Privacy Aware Computing
CEG 6410 Mobile Computing
CEG 6422 Secure Computing Practices
CEG 6450 Sensor Networks and Systems
CEG 7370 Distributed Computing
CEG 7380 Cloud Computing
CEG 7420 Host Computer Security II
CEG 7450 Advanced Computer Networks
CEG 7470 Advanced Wireless Networks

CEG 6120 Managing the Software Development proc.
CEG 6130 Personal Software Development Process
CEG 6180 Object Oriented Programming and Design

CEG 6360 Distributed Computing and Systems
CEG 6910 Technology-based Ventures

CEG 7350 Computer Architecture
CEG 7360 Embedded Systems
CEG 7370 Distributed Computing
CEG 7450 Advanced Computer Networks
CEG 7470 Advanced Wireless Networks

EE 7400 Information Theory
EE 7550 Trust Integrated Circuit Design

CEG 7560 Visualization for Cyber Security
### INTELLIGENT SYSTEMS
- CS 6840 Introduction to Machine Learning
- CS 6850 Foundations of AI
- CS 7800 Information Retrieval
- CS 7810 Knowledge Representation and Reasoning
- CS 7820 Advanced Semantic Web
- CS 7830 Machine Learning
- CS 7840 Soft Computing
- CEG 6870 Introduction to Intelligent Control Syst.
- CEG 7060 Advanced Robotics

### DATA ANALYSIS
- CS 6700 Introduction to Data Base Management Syst.
- CS 6710 Introduction to Data Mining
- CS 7700 Advanced Data Base Systems
- CS 7720 Data Mining
- CS 6800 Web Information Systems
- CEG 7570 Pattern Recognition

### MATHEMATICS OF COMPUTATION
- CS 6240 Coding Theory
- CS 6270 Optimization Theory
- CS 6280 Combinatorics and Graph Theory
- CS 6290 Cryptography & Data Security
- CS 6370 Parallel Programming for Many-Core GPUs
- CS 6600 Trust Networks
- CS 6700 Introduction to Data Base Management Syst.
- CS 6710 Introduction to Data Mining
- CS 6800 Web Information Systems
- CS 6830 Systems Simulation
- CS 7060 Numerical Analysis I
- CS 7070 Numerical Analysis II
- CEG 6260 Matrix Computation

### VISION & GRAPHICS
- CEG 6500 Computer Graphics
- CEG 6510 3-D Modeling and Computer Animation
- CEG 6520 Scientific Visualization
- CEG 6550 Computer Vision
- CEG 7590 Medical Image Analysis and Visualization

### RESEARCH AND INDEPENDENT STUDY
- CS 7950 MS Thesis Research in CS
- CS 7960 Cyber Security Capstone Project
- CS/CEG 6970 Independent Study in CS/CEG (Nonthesis)
- CS/CEG 7920 Independent Study in CS/CEG (Thesis)
- CEG 7950 MS Thesis Research in CEG

**Graduate Courses**

**CEG Courses:**
- CEG 6110 Introduction to Software Engineering
- CEG 6120 Managing the Software Development proc.
- CEG 6130 Personal Software Development Process
- CEG 6180 Object Oriented Programming and Design
- CEG 6230 Introduction to Robotics CEG 6260 Matrix Computation
- CEG 6322 VLSI Design
- CEG 6324 Digital IC Design with PLDs & FPGAs
- CEG 6330 Microprocessor-based Embedded Systems
- CEG 6360 Distributed Computing and Systems
- CEG 6430 Computer Networks and Security
- CEG 6410 Mobile Computing
- CEG 6420 Host Computer Security
- CEG 6422 Secure Computing Practices
- CEG 6424 Security Attacks and Defenses
- CEG 6450 Sensor Networks and Systems
- CEG 6500 Computer Graphics
- CEG 6510 3-D Modeling and Computer Animation
- CEG 6520 Scientific Visualization
- CEG 6550 Computer Vision
- CEG 7590 Medical Image Analysis and Visualization
- CS/CEG 6970 Independent Study in CS/CEG (Nonthesis)
- CS/CEG 7920 Independent Study in CS/CEG (Thesis)
- CEG 7950 MS Thesis Research in CEG

**CS Courses:**
- CS 6240 Coding Theory
- CS 6270 Optimization Theory
- CS 6280 Combinatorics and Graph Theory
- CS 6290 Cryptography & Data Security
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- CS 7100 Introduction to Machine Learning
- CS 6850 Foundations of AI
- CS 7060 Numerical Analysis I
- CS 7070 Numerical Analysis II
- CS 7100 Advance Programming Languages
- CS 7120 Functional and Logic Programming
- CS 7140 Advanced Software Engineering
- CS 7200 Algorithm Design and Analysis
- CS 7220 Compatibility and Complexity
- CS 7600 Trust Networks
- CS 7700 Advanced Data Base Systems
- CS 7720 Data Mining
- CS 7800 Information Retrieval
- CS 7810 Knowledge Representation and Reasoning
- CS 7820 Advanced Semantic Web
- CS 7830 Machine Learning
- CS 7840 Soft Computing
- CS 7850 Privacy Aware Computing
- CS 7950 MS Thesis Research in CS
- CS 7960 Cyber Security Capstone Project