MSCoE tracks

Program Core Requirements
ECE 690-Computer Systems Architecture
CIS 610-Data Structures and Algorithms

Area Requirements

Computer Architecture and Systems
Required:
ECE 658-VLSI Design I
ECE 692- Embedded Computing Systems

Electives:
ECE 605-Discrete Event Dynamic Systems
ECE 609-Artificial Neural Networks
ECE 648-Digital Microelectronics
ECE 650-Electronic Circuits
ECE 657-Semiconductor Devices
ECE 683-Computer Network Design and Analysis
ECE 685-Network Interface Design
ECE 686-Instrumentation Systems and Microprocessors
ECE 689-Digital Systems Design for Machine Arithmetic
ECE 758-VLSI Design II
ECE 785-Parallel Processing Systems
ECE 789-112: Design for Testability Principles
CIS 630-Operating System Design
CIS 633-Distributed Systems
CIS 636-Compiling System Design
CIS 641-Formal Languages and Automata
CIS 661-Systems Simulation
CIS 665-Algorithmic Graph Theory
CIS 668-Parallel Algorithms

Microprocessor-Based Systems
Required:
ECE 686- Instrumentation Systems and Microprocessors
ECE 688-Microcontrollers in Instrumentation

Electives (15 to 18 credits):
ECE 605- Discrete Event Dynamic Systems
ECE 612- Computer Methods Applied to Power Systems
ECE 650- Electronic Circuits
ECE 660- Control Systems I
ECE 664- Real-Time Computer Control Systems
ECE 666- Control Systems II
ECE 783-Computer Communication Networks
ECE 785-Parallel Processing Systems
CIS 630-Operating System Design
CIS 631-Data Management System Design
CIS 635-Computer Programming Languages
CIS 637-Real-Time Systems
CIS 641-Formal Languages and Automata
CIS 661-Systems Simulation
CIS 662-Model Analysis and Simulation
IE 605-Engineering Reliability

**Computer Networking**

*Required:*
ECE 683-Computer Network Design and Analysis
ECE 637-Introduction to Internet Engineering

**VLSI System Design**

*Required:*
ECE 683-Computer Network Design and Analysis
ECE 785-VLSI Design I
ECE 758-VLSI Design II

**Electives (15 to 18 credits):**
ECE 605-Discrete Event Dynamic Systems
ECE 639-Principles of Broadband ISDN and ATM
ECE 642-Communication Systems I
ECE 644-Intro. to Wireless and Personal Comm. Syst.
ECE 673-Random Signal Analysis
ECE 677-Optimization Techniques
ECE 681-Broadband Packet Switches
ECE 685-Network Interface Design
ECE 742-Communication Systems II
ECE 783-Computer Communication Networks
CIS 630-Operating System Design
CIS 631-Data Management System Design
CIS 633-Distributed Systems
CIS 637-Real-Time Systems
CIS 654-Telecommunication Networks Performance Anal.
CIS 665-Algorithmic Graph Theory
IE 605-Engineering Reliability

**Intelligent Systems**

*Required:*
ECE 605-Discrete Event Dynamic Systems
ECE 609-Artificial Neural Networks

**Electives (15 to 18 credits):**
ECE 601-Linear Systems
ECE 605-Discrete Event Dynamic Systems
ECE 609-Artificial Neural Networks
ECE 640-Digital Signal Processing
ECE 643-Digital Image Processing I
ECE 673-Random Signal Analysis
ECE 783-Computer Communication Networks
ECE 785-Parallel Processing Systems
CIS 630-Operating System Design
CIS 631-Data Management System Design
CIS 657-Prin. of Interactive Computer Graphics
CIS 665-Algorithmic Graph Theory
CIS 670-Artificial Intelligence
CIS 672-Expert System Methods and Design
CIS 759-Advanced Image Processing and Analysis
CIS 780-Computer Vision
IE 605-Engineering Reliability
ME 628-Machine Vision Principles and Applications

**Note:** A maximum number of three non-ECE courses are permitted for each student.