

MSCoE Tracks

Program Core Requirements:

ECE 690-Computer Systems Architecture & CIS 610-Data Structures and Algorithms

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 Sys. and Microprocessors

ECE 689-Digital Sys. Design for Machine Arithmetic

ECE 699-ST: Design for Testability Principles

ECE 758-VLSI Design II

ECE 785-Parallel Processing Systems

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

VLSI System Design

Required:

ECE 658-VLSI Design I

ECE 758-VLSI Design II

Electives (15 to 18 credits):

ECE 605-Discrete Event Dynamic Systems

ECE 650-Electronic Circuits

ECE 657-Semiconductor Devices

ECE 659-Fabric.Prin. Elec./Optoelec. Devices

ECE 683-Computer Network Design and Analysis

ECE 783-Computer Comm. Networks

ECE 699-ST: Design for Testability Principles

CIS 630-Operating System Design

CIS 631-Data Management System Design

CIS 641-Formal Languages and Automata

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 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

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

Electives (15 to 18 credits):

ECE 605-Discrete Event Dynamic Systems

ECE 636-Computer Networking Laboratory

ECE 639-Principles of Broadband Networks

ECE 642-Communication Systems I

ECE 644-Intro. Wireless and Personal Comm. Sysys.

ECE 645- Wireless Networks

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 745-Advanced Wireless Networks

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-Telecomm. Networks Performance Anal.

CIS 665-Algorithmic Graph Theory

IE 605-Engineering Reliability

Other courses may be used as electives with the permission of MS CoE Program Advisor. **No more than three non-ECE courses** are permitted within the 30-credit MScOE degree program requirements.