

# MS Computer Engineering

## Computer Architecture and Embedded Systems Track

<b>Program Core Courses</b> 2 courses	ECE 690 CS 610	Computer Systems Architecture Data Structures and Algorithms
<b>Specialization Core Courses</b> 2 courses	ECE 658 ECE 692	VLSI Design I Embedded Computing Systems
<b>Electives</b> 6 courses	ECE 605 ECE 609 ECE 637/CS 656 ECE 657 ECE 683 ECE 689 ECE 758 ECE 785 CS 630 CS 633 CS 636 CS 641 CS 661 CS 665 CS 668	Discrete Event Dynamic Systems Artificial Neural Networks Introduction to Internet Engineering Semiconductor Devices Computer Network Design and Analysis Digital Sys. Design for Machine Arithmetic VLSI Design II Parallel Processing Systems Operating System Design Distributed Systems Compiling System Design Formal Languages and Automata Systems Simulation Algorithmic Graph Theory Parallel Algorithms
<b>Knowledge Advancement</b>	ECE 791	Graduate Seminar
<b>Project, Thesis (optional)</b>	ECE 700 ECE 701	Master's Project in CoE (3 Credits) (replace 3 credits of elective) Master's Thesis in CoE (6 Credits) (replace 6 credits of elective)
<b>Professional Skills Elective (optional)</b>	MGMT 685 MIS 648	Operations Research and Decision Making Decision Support Systems for Managers

# MS Computer Engineering

## Computer Networking Track

<b>Core</b> 2 courses	ECE 690	Computer Systems Architecture
	CS 610	Data Structures and Algorithms

<b>Specialization Core Courses</b> 2 courses	ECE 683/CS 652	Computer Network Design and Analysis
	ECE 783	Computer Communication Networks

<b>Electives</b>  6 courses	ECE 605	Discrete Event Dynamic Systems
	ECE 636	Computer Networking Laboratory
	ECE 637/CS 656	Introduction to Internet Engineering
	ECE 638/CS 696	Network Management and Security
	ECE 639	Principles of Broadband Networks
	ECE 642	Communication Systems I
	ECE 644	Intro. To Wireless and Personal Comm.
	ECE 645	Wireless Networks
	ECE 658	VLSI Design I
	ECE 681	Broadband Packet Switches
	ECE 690	Computer Systems Architecture
	ECE 745	Advanced Wireless Networks
	CS 633	Distributed Systems
	CS 661	Systems Simulation
	CS 665	Algorithmic Graph Theory
IE 605	Engineering Reliability	

<b>Knowledge Advancement</b>	ECE 791	Graduate Seminar
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### Project, Thesis (optional)

ECE 700	Master's Project in CoE (3 Credits) (replace 3 credits of elective)
ECE 701	Master's Thesis in CoE (6 Credits) (replace 6 credits of elective)

### Professional Skills Elective (optional)

MGMT 685	Operations Research and Decision Making
MIS 648	Decision Support Systems for Managers

# MS Computer Engineering

## Intelligent Systems Track

<b>Core</b> 2 courses	ECE 690 CS 610	Computer Systems Architecture Data Structures and Algorithms
<b>Specialization Core Courses</b> 2 courses	ECE 605 ECE 609	Discrete Event Dynamic Systems Artificial Neural Networks
<b>Electives</b> 6 courses	ECE 601 ECE 640 ECE 643 ECE 660 ECE 664 ECE 673 ECE 683 ECE 689 ECE 692 ECE 785 CS 630 CS 633 CS 636 CS 641 CS 661 CS 665 CS 668 IE 605	Linear Systems Digital Signal Processing Digital Image Processing I Control Systems I Real-Time Computer Control Systems Random Signal Analysis Computer Network Design and Analysis Digital Sys. Design for Machine Arithmetic Embedded Systems Parallel Process Systems Operating System Design Distributed Systems Compiling System Design Formal Languages and Automata Systems Simulation Algorithmic Graph Theory Parallel Algorithms Engineering Reliability
<b>Knowledge Advancement</b>	ECE 791	Graduate Seminar
<b>Project, Thesis (optional)</b>		
ECE 700	Master's Project in CoE (3 Credits) (replace 3 credits of elective)	
ECE 701	Master's Thesis in CoE (6 Credits) (replace 6 credits of elective)	
<b>Professional Skills Elective (optional)</b>		
	MGMT 685	Operations Research and Decision Making
	MIS 648	Decision Support Systems for Managers

# MS Electrical Engineering

## VLSI System Design Track

<b>Core</b> 2 courses	ECE 690 CS 610	Computer Systems Architecture Data Structures and Algorithms
<b>Specialization Core Courses</b> 2 courses	ECE 658 ECE 758	VLSI Design I VLSI Design II
<b>Electives</b> 6 courses	ECE 605 ECE 625 ECE 657 ECE 659 ECE 683/CS 652 ECE 783 ECE 739 ECE 756 ECE 785 PHYS 682 CS 630 CIS 631 CS 641 CS 665 CS 668 IE 605	Discrete Event Dynamic Systems Fiber and Integrated Optics Semiconductor Devices Fabric. Princ.Elec./Optoelec. Devices Computer Network Design and Analysis Computer Communication Networks Laser Systems Semiconductor Devices II Parallel Processing Systems Introduction to MEMS Operating System Design Data Management System Design Formal Languages and Automata Algorithmic Graph Theory Parallel Algorithms Engineering Reliability
<b>Knowledge Advancement</b>	ECE 791	Graduate Seminar
<b>Project, Thesis (optional)</b>		
ECE 700	Master's Project in CoE (3 Credits) (replace 3 credits of elective)	
ECE 701	Master's Thesis in CoE (6 Credits) (replace 6 credits of elective)	
<b>Professional Skills Elective (optional)</b>		
	MGMT 685	Operations Research and Decision Making
	MIS 648	Decision Support Systems for Managers