

# MS Electrical Engineering

## Communication, Signal Processing and Microwave Track

<b>Program Core Courses</b> 2 courses	ECE 601 ECE 673 OR ECE 620	Linear Systems Random Signal Analysis Electromagnetic Fields
<b>Specialization Core Courses</b> 2 courses	ECE 642 ECE 742 ECE 640 ECE 740 ECE 630 ECE 632	Communication Systems I Communication Systems II Digital Signal Processing Advanced Digital Signal Processing Microwave Electronic Systems Antenna Theory
<b>Electives</b> 6 courses	ECE 622 ECE 625 ECE 626 ECE 643 ECE 644 ECE 645 ECE 683/CS 652 ECE 684 ECE 747 ECE 755 ECE 757 ECE 776 ECE 777	Wave Propagation Fiber and Integrated Optics Optoelectronics Digital Image Processing I Intro. To Wireless and Personal Comm. Wireless Networks Computer Network Design and Analysis Advanced Microprocessor Systems Digital Decomposition Techniques Advanced Topics in Digital Comm Wireless Communication Information Theory Statistical Decision Theory in Comm
<b>Knowledge Advancement</b>		
	ECE 791	Graduate Seminar
<b>Project, Thesis (optional)</b>		
ECE 700	Master's Project in Electrical Engineering (3 Credits) (replace 3 credits of elective)	
ECE 701	Master's Thesis in Electrical Engineering (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

## Computer Networking Track

<b>Core</b> 2 courses	ECE 601	Linear Systems
	ECE 673	Random Signal Analysis
	OR ECE 620	Electromagnetic Fields
<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 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 610	Data Structures and Algorithms
	CS 665	Algorithmic Graph Theory
<b>Knowledge Advancement</b>		
	ECE 791	Graduate Seminar
<b>Project, Thesis (optional)</b>		
ECE 700	Master's Project in Internet Engineering (3 Credits)	
ECE 701	Master's Thesis in Internet Engineering (6 Credits)	
<b>Professional Skills Elective (optional)</b>		
	MGMT 685	Operations Research and Decision Making
	MIS 648	Decision Support Systems for Managers

# MS Electrical Engineering

## Computer Architecture and Systems Track

<b>Core</b> 2 courses	ECE 601 ECE 673 OR ECE 620	Linear Systems Random Signal Analysis Electromagnetic Fields
<b>Specialization Core Courses</b> 2 courses	ECE 689 ECE 690	Digital System Design Computer Systems Architecture
<b>Electives</b> 6 courses	ECE 605 ECE 612 ECE 640 ECE 643 ECE 650 ECE 660 ECE 664 ECE 684 ECE 688 ECE 692 ECE 785 CS 631	Discrete Event Dynamic Systems Computer Methods Applied to Power Systems Digital Signal Processing Digital Image Processing I Electronics Circuits Control Systems I Real-Time Computer Control Systems Advanced Microprocessor Systems Microcontrollers in Instrumentation Embedded Systems Parallel Process Systems Data Management System
<b>Knowledge Advancement</b>	ECE 791	Graduate Seminar
<b>Project, Thesis (optional)</b>		
ECE 700	Master's Project in Internet Engineering (3 Credits)	
ECE 701	Master's Thesis in Internet Engineering (6 Credits)	
<b>Professional Skills Elective (optional)</b>		
	MGMT 685	Operations Research and Decision Making
	MIS 648	Decision Support Systems for Managers

# MS Electrical Engineering

## Solid State, VLSI and Electrooptics Systems Track

<b>Core</b> 2 courses	ECE 601	Linear Systems
	ECE 673	Random Signal Analysis
	OR ECE 620	Electromagnetic Fields
<b>Specialization Core Courses</b> 2 courses	ECE 622	Wave Propagation
	ECE 626	Optoelectronics
	ECE 650	Electronic Circuits
	ECE 657	Semiconductor Devices
	ECE 658 ECE 758	VLSI Design I VLSI Design II
<b>Electives</b> 6 courses	ECE 605	Discrete Event Dynamic Systems
	ECE 625	Fiber and Integrated Optics
	ECE 630	Microwave Electronic Systems
	ECE 642	Communication Systems I
	ECE 659	Fabric. Princ. Elec./Optoelec. Devices
	ECE 660	Control Systems I
	ECE 683/CS 652	Computer Network Design and Analysis
	ECE 684	Advanced Microprocessor Systems
	ECE 690	Computer Systems Architecture
	ECE 739	Laser Systems
	ECE 756	Semiconductor Devices II
	ECE 785	Parallel Processing Systems
	PHYS 682	Introduction to MEMS
<b>Knowledge Advancement</b>		
	ECE 791	Graduate Seminar
<b>Project, Thesis (optional)</b>		
ECE 700	Master's Project in Internet Engineering (3 Credits)	
ECE 701	Master's Thesis in Internet Engineering (6 Credits)	
<b>Professional Skills Elective (optional)</b>		
	MGMT 685	Operations Research and Decision Making
	MIS 648	Decision Support Systems for Managers

# MS Electrical Engineering

## Intelligent Systems Track

<b>Core</b> 2 courses	ECE 601	Linear Systems
	ECE 673 OR	Random Signal Analysis
	ECE 620	Electromagnetic Fields
<b>Specialization Core Courses</b> 2 courses	ECE 605	Discrete Event Dynamic Systems
	ECE 610	Power System Steady-State Analysis
	ECE 660	Control Systems I
<b>Electives</b>  6 courses	ECE 611	Transients in Power Systems
	ECE 612	Computer Methods Applied to Power Systems
	ECE 616	Power Electronics
	ECE 640	Digital Signal Processing
	ECE 664	Real-Time Computer Control Systems
	ECE 666	Control Systems II
	ECE 661	Control Systems Components
	ECE 684	Advanced Microprocessor Systems
<b>Knowledge Advancement</b>		
	ECE 791	Graduate Seminar
<b>Project, Thesis (optional)</b>		
ECE 700	Master's Project in Internet Engineering (3 Credits)	
ECE 701	Master's Thesis in Internet Engineering (6 Credits)	
<b>Professional Skills Elective (optional)</b>		
	MGMT 685	Operations Research and Decision Making
	MIS 648	Decision Support Systems for Managers