MS Electrical Engineering

Core	ECE 601	Linear Systems
2 courses	ECE 673	Random Signal Analysis

	ECE 605	Discrete Event Dynamic Systems
	ECE 610	Power System Steady-State Analysis
	ECE 611	Transients in Power Systems
	ECE 613	Protection of Power Systems
	ECE 616	Power Electronics
	ECE 617	Economic Control of Interconnected Power Systems
	ECE 618	Renewable Energy Systems
	ECE 626	Optoelectronics
	ECE 636	Computer Networking Laboratory
	ECE 637	Internet and Higher-Layer Protocols
	ECE 639	Principles of Broadband Networks
8 courses	ECE 640	Digital Signal Processing
	ECE 641	Laboratory for High Performance Digital Signal Processing
	ECE 642	Communication Systems I
	ECE 644	Wireless Communication
	ECE 645	Wireless Networks
	ECE 657	Semiconductor Devices
	ECE 658	VLSI Design I
	ECE 660	Control Systems I
	ECE 661	Control System Components
	ECE 681	High Performance Routers and Switches
	ECE 683	Computer Network Design and Analysis
	ECE 684	Advanced Microprocessor Systems
	ECE 690	Computer Systems Architecture
	ECE 692	Embedded Computing Systems
	ECE 698	Selected Topics in Electrical and Computer Engineering
	ECE 744	Optimization for Communication Networks
	ECE 754	Statistical Machine Learning and Pattern Recognition
	ECE 758	VLSI Design II
	ECE 776	Information Theory
	ECE 783	Computer Communication Networks
	ECE 788	Selected Topics in Electrical and Computer Engineering

Knowledge Advancement

Required	ECE 791	Graduate Seminar (for two semesters: Recommended but NOT Required)

OR

Project, Thesis (optional)

7 Courses +	ECE 700	Master's Project in Electricalt Engineering (3 Credits)
6 Courses +	ECE 701	Master's Thesis in Electrical Engineering (6 Credits)

Professional Skills Elective (optional)

	EM 636	Project Management

Communication, Signal Processing and Machine Intelligence (CSM)		
Core 2 courses	ECE 601 ECE 673	Linear Systems Random Signal Analysis
Professional and Specialization Courses 8 courses Or 7 Courses and Project Or 6 Courses and Thesis	ECE 642 ECE 742 ECE 640 ECE 641 ECE 644 ECE 645 ECE 626 ECE 637 ECE 684 ECE 683 ECE 744 ECE 754 ECE 749 ECE 755 ECE 776 ECE 777 ECE 788	Communication Systems I Communication Systems II Digital Signal Processing Lab for DSP with FPGA Intro. To Wireless and Personal Comm. Wireless Networks Optoelectronics Internet and Higher-Layer Protocols Advanced Microprosser Systems Computer Network Design and Analysis Optimization for Communication Networks Statistical Machine Learning and Pattern Recognition Compression in Multimedia Engr Advanced Topics in Digital Comm Information Theory Statistical Decision Theory in Comm Selected Topics in Electrical and Computer Engineering
Knowledge Advancement		
	ECE 791	Graduate Seminar (for two semesters) **NOT MANDATORY**
Project, Thesis (optional)		
ECE 700	Master's Project in Electricalt Engineering (3 Credits)	
ECE 701	Master's Thesis in Electrical Engineering (6 Credits)	
Professional Skills Elective (optional)		
	MGMT 685	Operations Research and Decision Making
	EM 636	Project Management
Must complete two core courses to Graduate		

Computer Systems and Networking (CSNW)		
Core 2 courses	ECE 601 ECE 673	Linear Systems Random Signal Analysis
Professional and Specialization Courses 8 courses Or 6 Courses and Thesis Or 6 Courses and Thesis	ECE 683 ECE 783 ECE 637 CS 696 ECE 639 ECE 642 ECE 644 ECE 645 ECE 658 ECE 684 ECE 681 ECE 690 ECE 692 ECE 754 ECE 758 CS 610 ECE 788	Computer Network Design and Analysis Computer Communication Networks Introduction to Internet Engineering Network Management and Security Principles of Broadband Networks Communication Systems I Intro. To Wireless and Personal Comm. Wireless Networks VLSI Design I Advanced Microprocessor Systems Broadband Packet Switches Computer Systems Architecture Embedded Computing Systems Statistical Machine Learning and Pattern Recognition VLSI Design II Data Structures and Algorithms Selected Topics in Electrical and Computer Engineering
Knowledge Advancement	ECE 791	Graduate Seminar (for two semesters) **NOT MANDATORY**
Project, Thesis (optional)		
ECE 700	Master's Project in Internet Engineering (3 Credits)	
ECE 701	Master's Thesis in Internet Engineering (6 Credits)	
	MGMT 685	Operations Research and Decision Making
	EM 636	Project Management
	Must complete two core courses to Graduate	

Energy, Power Systems, and Sustainability (EPSS)		
Core	ECE 601	Linear Systems
2 courses	ECE 673	Random Signal Analysis
Professional	ECE 605	Discrete Event Dynamic Systems
and	ECE 610	Power System Steady-State Analysis
Specialization	ECE 611	Transients in Power Systems
Courses	ECE 613	Protection of Power Systems
	ECE 617	Economic Control of Interconnected Power Systems
	ECE 618	Renewable Energy Systems
	ECE 642	Communication Systems I
	ECE 683	Computer Network Design and Analysis
	ECE 684	Advanced Microprocessor Systems
	CS 696	Network Management and Security
	ECE 637	Internet and Higher-Layer Protocols
	ECE 698	Selected Topics in Electrical and Computer Engineering
8 courses	ECE 660	Control Systems I
Or 6 Courses and Thesis	ECE 661	Control System Components
Or 6 Courses and Thesis	ECE 640	Digital Signal Processing
	ECE 754	Statistical Machine Learning and Pattern Recognition
	CS 604	Client/Server Computing
Knowledge Advancement		
	ECE 791	Graduate Seminar (for two semesters) **NOT MANDATORY**
Project, Thesis (optional)		
ECE 700	Master's Project in Internet Engineering (3 Credits)	
ECE 701	Master's Thesis in Internet Engineering (6 Credits)	
	MGMT 685	Operations Research and Decision Making
	EM 636	Project Management
Must complete two core courses to Graduate		

Photonics, Nano and Quantum Materials and Devices (PNMD)

Core 2 courses	ECE 601 ECE 673	Linear Systems Random Signal Analysis
Professional and Specialization Courses	ECE 626 ECE 657 ECE 658 ECE 618 ECE 684 ECE 690 ECE 692 ECE 758 ECE 698 ECE 683 ECE 639 ECE 642	Optoelectronics Semiconductor Devices VLSI Design I Renewable Energy Systems Advanced Microprocessor Systems Computer Systems Architecture Embedded Computing Systems VLSI Design II Selected Topics in Electrical and Computer Engineering Computer Network Design and Analysis Principles of Broadband Networks Communication Systems I
8 courses Or 7 Courses and Project Or 6 Courses and Thesis	ECE 788 ECE 783 CS 604 PHYS 731	Selected Topics in Electrical and Computer Engineering Computer Communication Networks Client/Server Computing Quantum Mechanics II

Knowledge Advancement	ECE 791	Graduate Seminar (for two semesters) **NOT MANDATORY**

Project, Thesis (optional)	
ECE 700	Master's Project in Internet Engineering (3 Credits)
ECE 701	Master's Thesis in Internet Engineering (6 Credits)
MGMT 685	Operations Research and Decision Making
EM 636	Project Management
Must complete two core courses to Graduate	

Robotics, Intelligent Systems, Data Engineering (RID)

Core 2 courses	ECE 601 ECE 673	Linear Systems Random Signal Analysis
Professional and Specialization Core Courses	ECE 605 ECE 660 ECE 661 ECE 664 ECE 684 ECE 698 ECE 683 ECE 644 ECE 642 CS696 ECE 639 ECE 645	Project Management Computer Networking Laboratory Management Strategies for E-Commerce Real Time Control Systems Advanced Microprocessor Systems Selected Topics in Electrical and Computer Engineering Computer Network Design and Analysis Intro. To Wireless and Personal Comm. Communication Systems I Network Management and Security Principles of Broadband Networks Wireless Networks
8 courses	ECE 754 ECE 788 CS 604	Statistical Machine Learning and Pattern Recognition Selected Topics in Electrical and Computer Engineering Client/Server Computing

Knowledge Advancement		
	ECE 791	Graduate Seminar (for two semesters) **NOT MANDATORY**

Project, Thesis (optional)		
ECE 700	Master's Project in Internet Engineering (3 Credits)	
ECE 701	Master's Thesis in Internet Engineering (6 Credits)	
	MGMT 685	Operations Research and Decision Making
	EM 636	Project Management
Must complete two core courses to Graduate		