MASTER OF NETWORK ENGINEERING

The Master of Network Engineering (M.N.E.) is a course-only degree program that prepares students for professional practice in network engineering and information technologies. The M.N.E. is a focused professional master's degree requiring a minimum of 30 credit hours of adviser approved coursework. The program offered by the Department of Electrical and Computer Engineering (ECE) can be completed in one year of full-time study.

The admission requirements for this degree follow the existing admission requirements for master's degree in the ECE department. A person holding a B.S.E.E. or a B.S.CP.E. degree has the necessary background to undertake the M.N.E. program. A student without adequate background is required to demonstrate proficiency in the following courses:

ECE 211	Circuit Analysis I	3
ECE 213	Circuit Analysis II	4
ECE 308	Signals and Systems	3
MATH 251	Multivariate and Vector Calculus	4
MATH 252	Introduction to Differential Equations	4
MATH 474	Probability and Statistics	3

A student may demonstrate proficiency by successfully completing the courses or by demonstrating satisfactory performance in one or more special examinations administered by the department.

The M.N.E. program of study must include a minimum of 24 credit hours of ECE coursework, 12 credit hours of required core courses, 12 credit hours of M.N.E. elective courses, and six credit hours of adviser-approved elective courses. At least 18 credit hours of the courses must be at the 500-level. A maximum of six credit hours may be taken from ECE 700-level short courses.

Curriculum

Requirement	Credits
Minimum Credits Required	30
Maximum 400-Level Credit	12
Minimum 500-Level Credit	18
Maximum Short Course ECE 700-Level Credit	4
Maximum Transfer Credit	9

Code	Title		Credit Hours
Required Courses			**(15-16)**
ECE 503	5G Wireless Network: Architecture, New Radio, and Security		3
ECE 511	Analysis of Random Signals		3
ECE 513	Communication Engineering Fundamentals		3
ECE 541	Communications Networks Performance Analysis		3
or ECE 543	Computer Network Security		
Select a minimum of one course from the following:			3-4
ECE 407	Introduction to Computer Networks with Laboratory	3-4	
or ECE 408	Introduction to Computer Networks		
ECE 545	Modern Internet Technologies	3	
Network Engineering Elective Courses			**(12)**
Select a minimum of 12 credit hours of 400- and 500-level courses below, approved by the faculty adviser: [1]			12
ECE 403	Digital and Data Communication Systems	3-4	
or ECE 405	Digital and Data Communication Systems with Laboratory		
ECE 406	Wireless Communications Systems	3	
or ECE 504	Wireless Communication System Design		
ECE 437	Digital Signal Processing I	3-4	
or ECE 436	Digital Signal Processing I with Laboratory		
ECE 442	Internet of Things and Cyber Physical Systems	3	
or ECE 510	Internet of Things and Cyber Physical Systems		
ECE 443	Introduction to Computer Cyber Security	3	

or ECE 518	Computer Cyber Security	
ECE 447	Artificial Intelligence and Edge Computing	3
or ECE 501	Artificial Intelligence and Edge Computing	
ECE 448	Application Software Design	3
or ECE 528	Application Software Design	
ECE 449	Object-Oriented Programming and Machine Learning	3
or ECE 590	Object-Oriented Programming and Machine Learning	
ECE 485	Computer Organization and Design	3
or ECE 585	Computer Organization and Design	
ECE 508	Video Communications	3
ECE 514	Digital Communication Principles	3
ECE 515	Modern Digital Communications	3
ECE 516	Coding for Distributed Storage Systems	3
ECE 517	Modern Wireless Network Protocols and Standards	3
ECE 519	Coding for Reliable Communications	3
ECE 520	Information Theory and Applications	3
ECE 541	Communications Networks Performance Analysis	3
ECE 542	Design and Optimization of Computer Networks	3
ECE 544	Wireless and Mobile Networks	3
ECE 545	Modern Internet Technologies	3
ECE 546	Wireless Network Security	3
ECE 547		3
ECE 565	Computer Vision and Image Processing	3
ECE 568	Digital Speech Processing	3
ECE 569	Digital Signal Processing II	3
ECE 570	Fiber-Optic Communication Systems	3
ECE 583	High Speed Computer Arithmetic	3
ECE 584	VLSI Architecture for Signal Processing and Communication Systems	3
ECE 586	Hardware Security and Advanced Computer Architectures	3
Electives		**(3)**
Select three credit hours		3