MASTER OF COMPUTER ENGINEERING IN INTERNET OF THINGS

The objective of IoT is to enhance both device-to-device interactions, as well as device-to-human interactions via the Internet. IoT systems facilitate controlling and monitoring devices from anywhere by integrating sensors, actuators, local processing and storage devices, wireless networks, Internet, and cloud computing. IoT engineers also need to understand the Cyber Security and Big Data challenges for IoT applications. Learning every major aspect of these technologies is necessary to be a successful engineer in the field of Internet of Things. Students will be trained to master several key topics in the field of computer networking, embedded systems, system architectural design issues, communication and information systems, smart grids and cybersecurity.

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

Code	Title	Credit Hours
Core Courses		**(18-24)**
Select a minimum of 6 courses from the following:		18-24
ECE 408	Introduction to Computer Networks	3
ECE 501	Artificial Intelligence and Edge Computing	3
ECE 503	5G Wireless Network: Architecture, New Radio, and Security	3
ECE 504	Wireless Communication System Design	3
ECE 510	Internet of Things and Cyber Physical Systems	3
ECE 518	Computer Cyber Security	3
ECE 528	Application Software Design	3
ECE 543	Computer Network Security	3
ECE 545	Modern Internet Technologies	3
ECE 573	Cloud Computing and Cloud Native Systems	3
ECE 590	Object-Oriented Programming and Machine Learning	3
ECE 597	Special Problems (Internet of Things)	3
Network Engineering Elective		**(3-6)**
Select minimum 1 course from the following:		3-6
ECE 408	Introduction to Computer Networks	3
ECE 503	5G Wireless Network: Architecture, New Radio, and Security	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 543	Computer Network Security	3
ECE 544	Wireless and Mobile Networks	3
ECE 545	Modern Internet Technologies	3
ECE 546	Wireless Network Security	3
Computer Engineering Elective		**(3-6)**
Select minimum 1 course from the following:		3-6
ECE 441	Smart and Connected Embedded System Design	4
ECE 528	Application Software Design	3
ECE 572	Secure Machine Learning Design and Applications	3
ECE 573	Cloud Computing and Cloud Native Systems	3
ECE 574	Data Science for Engineers	3
ECE 585	Computer Organization and Design	3
ECE 586	Hardware Security and Advanced Computer Architectures	3
ECE 587	Hardware/Software Codesign	3
ECE 590	Object-Oriented Programming and Machine Learning	3
Signal and Image Processing Elective		**(3-6)**
Select minimum 1 course from the following:		3-6
ECE 437	Digital Signal Processing I	3
ECE 481	Image Processing	3
ECE 508	Video Communications	3
ECE 511	Analysis of Random Signals	3
ECE 565	Computer Vision and Image Processing	3
ECE 566	Machine and Deep Learning	3
ECE 567	Statistical Signal Processing	3
ECE 569	Digital Signal Processing II	3
Power Engineering Elective		**(3)**
Option to select one (1) course from the following:		3
ECE 505	Applied Optimization for Engineers	3
ECE 512	Hybrid Electric Vehicle Drives	3
ECE 535	Discrete Time Systems	3
ECE 537	Next Generation Smart Grid	3
ECE 548	Energy Harvesting	3
ECE 549	Motion Control Systems Dynamics	3
ECE 550	Power Electronic Dynamics and Control	3
ECE 553	Power System Planning	3
ECE 563	Artificial Intelligence in Smart Grid	3
ECE 581	Elements of Smart Grid	3

ECE 582	Microgrid Design and Operation	3	
Total Credit Hours			**30-45**