

MASTER OF TELECOMMUNICATIONS AND SOFTWARE ENGINEERING

Collaborative program with the Department of Computer Science

The Master of Telecommunications and Software Engineering (M.T.S.E.) is a course-only degree program that prepares students for professional practice in telecommunications and information technologies. The program is offered by the Department of Electrical and Computer Engineering (ECE) and can be completed in one year of full-time study. The M.T.S.E. is a professional master's degree requiring a minimum of 30 credit hours of adviser-approved coursework.

Admission requirements for this degree follow the existing admission requirements for master's degrees in the ECE

Curriculum

Master of Telecommunications and Software Engineering, Computer Engineering Concentration

Requirement	Credits
Minimum Credits Required	30
Maximum 400-Level Credit	12
Minimum 500-Level Credit	18
Minimum ECE Coursework	15
Minimum CS Coursework	12
Maximum ECE Short Courses	4
Maximum Transfer Credit	9

department. A person holding a B.S.E.E., a B.S.C.P.E., or a B.S.C.S. degree has the necessary broad background to undertake the M.T.S.E. program. A student without adequate background in specific areas is required to demonstrate proficiency in prerequisite courses; an abbreviated course list is given below.

Specific proficiency courses will be detailed for each student at the time of admission to the M.T.S.E. program. 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.

Code	Title	Credit Hours
Core Courses		(15)
ECE 510 or ECE 503	IoT and Cyber Physical Systems 5G Wireless Network	3
ECE 513 or ECE 504	Commctn Engrg Fundamentals Wireless Comm Systm Design	3
CS 586 or CS 587	Software Systems Arch Software Project Management	3
ECE 541 or ECE 543	Perform Eval Compt Ntwrk Computer Network Security	3
ECE 545 or ECE 408	Advanced Computer Networks Intro to Computer Ntwks	3
Software Engineering		(3)
Select a minimum of one course from the following:		3
CS 521	Object-Oriented Analysis/Dsgn	3
CS 537	Software Metric	3
CS 589	Software Testing and Anlys	3
ECE 448 or ECE 528	Application Software Design Application Software Design	3
ECE 449 or ECE 590	Obj-Oriented Prog & Machine Le Object-Oriented Program & ML	3
Telecommunication Systems		(3-4)
Select a minimum of one course from the following:		3-4
CS 555	Anlytc Mdls Simul Comp Syst	3
ECE 407 or ECE 408	Intro Comp Ntwks with Lab Intro to Computer Ntwks	4

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ECE 443 or ECE 518	Intro Computer Cyber Security Computer Cyber Security	3
ECE 510	IoT and Cyber Physical Systems	3
ECE 517	Wireless Ntwrk Protocols/Stand	3
ECE 542	Dsgn Optmztn Compt Ntwrks	3
ECE 543	Computer Network Security	3
ECE 544	Wireless and Mobile Networks	3
ECE 545	Advanced Computer Networks	3
ECE 546	Wireless Network Security	3
ECE 547	Wireless Ntwrks Perf Analysis	3
Communications		(3)
Select a minimum of one course from the following:		3
ECE 503	5G Wireless Network	3
ECE 504 or ECE 406	Wireless Comm System Design Wireless Communications System	3
ECE 508	Video Processing & Comm	3
ECE 513	Commctn Engrg Fundamentals	3
ECE 514	Digital Commctn Principles	3
ECE 515	Modern Digital Communications	3
ECE 519	Coding Reliable Communications	3
ECE 520	Info Theory and Applications	3
Elective Courses		(6)
Select the remaining credit hours of coursework from the courses listed above or other courses approved by the faculty adviser ¹		6

¹ Students without a background in communications or software engineering would be best prepared by including: CS 450, CS 455, CS 487, ECE 403, ECE 405, ECE 406.

Other recommended courses include:

Code	Title	Credit Hours
CS 588	Advnd Software Engrg Dev	3
ECE 436	Digital Signal Pcsgr w/Lab	4
ECE 437	Digital Signal Processing I	3
ECE 511	Analysis Random Signals	3
ECE 516	Coding Distributed Storage Sys	3
ECE 520	Info Theory and Applications	3
ECE 565	Compt Vision Image Processing	3
ECE 568	Digital Speech Processing	3
ECE 569	Digital Signal Processing II	3
ECE 584	VLSI Archs Sgnl Prcs Commnctns	3