MASTER OF VLSI AND MICROELECTRONICS

The purpose of this degree program is to prepare students for leading edge positions in industry in the areas of VLSI and microelectronics. The professional Master of VLSI and Microelectronics is a course-only degree program that prepares students for professional practice.

The admission requirements for this degree follow the existing admission requirements for other professional master's degrees in the ECE department. Students whose accredited B.S. degree is not in electrical engineering may pursue the professional master's degree, provided that they have an adequate background and can demonstrate proficiency in the material contained in undergraduate courses equivalent to Illinois Institute of Technology's:

ECE 211 & ECE 213	Circuit Analysis I and Circuit Analysis II	7
ECE 218	Digital Systems	4
ECE 307	Electrodynamics	4
ECE 308	Signals and Systems	3
ECE 311	Engineering Electronics	4
MATH 251	Multivariate and Vector Calculus	4
MATH 252	Introduction to Differential Equations	4

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

Curriculum

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

Code	Title	Credit Hours	
Core Courses			**(16)**
ECE 425	Anlys Dsgn Intgrtd Circuits		3
ECE 429	Intro to VLSI Design		4
ECE 523	Fund of Semiconductor Devices		3
ECE 525	RF Integrated Circuit Design		3
ECE 529	Advncd VLSI Systems Dsgn		3
Computer Engineering			**(3)**
Select a minimum of one course from the following:			3
ECE 443	Intro Computer Cyber Security	3	
or ECE 518	Computer Cyber Security		
ECE 485	Computer Organization & Design	3	
or ECE 585	Computer Org and Design		
ECE 530	High Performnc VLSI/IC Systems	3	
ECE 542	Dsgn Optmztn Compt Ntwrks	3	
ECE 545	Modern Internet Tech	3	
ECE 583	High Speed Compt Arithmetic	3	
ECE 584	VLSI Archs Sgnl Prcs Commnctns	3	
ECE 586	Hardwr Security & Adv Comp Arc	3	
ECE 587	Hardware Software Codesign	3	
ECE 588	CAD Techniques VLSI Dsgn	3	
ECE 589	CAD of Analog IC	3	
Electronics			**(3)**
Select a minimum of one course from the following:			3
ECE 401	Communication Electronics	3	

ECE 425	Anlys Dsgn Intgrtd Circuits	3
ECE 503	5G Wireless Network	3
ECE 521	Quantum Electronics	3
ECE 524	Adv Electronic Circuit Design	3
ECE 525	RF Integrated Circuit Design	3
ECE 526	Active Filter Design	3
ECE 527	Perform Anlys RF Intgrtd Crcts	3
ECE 551	Advanced Power Electronics	3
ECE 570	Fiber Optic Communication Syst	3
ECE 571	Nanodevices Technology	3
ECE 575	Electron Devices	3
ECE 578	Microwave Theory	3
General Electives		**(8)**
Select eight credit hours of electives from ECE 400-799 [1]		8
Total Credit Hours		**30**

[1] With adviser approval, the student may take up to two ECE courses in other areas of electrical and computer engineering, such as signal processing, communications, power and control.