MASTER OF SCIENCE IN ELECTRICAL AND COMPUTER ENGINEERING

The Master of Science in Electrical and Computer Engineering (M.S. ECE) is designed to prepare students for advanced study, research, and professional practice in the broad and interdisciplinary fields of electrical and computer engineering. The program provides a rigorous foundation in both theoretical principles and practical applications, covering core areas such as power and energy systems, electronics, microelectronics, VLSI, signal processing, machine vision, control systems, computer architecture, embedded systems, communications, and machine learning. Students have the option to pursue thesis research under the guidance of a faculty adviser. The program is typically completed in three semesters of full-time study.

The M.S.ECE program offers one optional specialization in *Machine Learning, Vision, and Control* that allows students to tailor coursework toward advanced topics while maintaining a strong foundation in core electrical and computer engineering principles. This specialization is designed to provide interested students maximum exposure towards the very fast evolving AI technologies, machine learning, and methods while particularly targeting Electrical and Computer Engineering topics such as computer vision, medical image diagnosis, power system distribution, robotics and automation.

The admission requirements for this degree follow the existing admission requirements for a master's degree in the ECE department. Students whose accredited B.S. degree is not in electrical or computer engineering may pursue the M.S.ECE, 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 242	Digital Computers and Computing	3
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 departmental examinations administered by the department.

The program of study includes a minimum of 30 credit hours of acceptable ECE graduate coursework. A minimum of 18 credit hours must be taken at the 500-level or higher. Up to six credit hours of ECE short courses may be applied to the degree. Students, with advisers' approval, select courses appropriate to their needs and interests. An M.S.ECE candidate may, with permission of a thesis adviser, include in their program a thesis of six credit hours. The thesis option is strongly recommended for students intending to pursue doctoral studies, and it requires a written thesis and an oral defense of the thesis. Thesis format and deadlines are set by the Graduate College.

Curriculum

Students arrange their program of study with their adviser's approval and typically elect to build their program to emphasize one or more areas of specialization. No formal distribution requirements are imposed.

Requirement	Credits
Minimum Credits Required	30
Maximum 400-Level ECE Credit	12
Minimum 500-Level ECE Credit	18
Maximum ECE Short Courses 700-Level Credit	6
Maximum Transfer Credit	9

Code	Title	Credit Hours
Required Courses		**(30)**
Select 30 credit hours of courses from ECE 400-799		30
Total Credit Hours		**30**