

# MASTER OF ELECTRICITY MARKETS

Restructuring of electricity delivery brings major changes to the electric power industry. Electricity is traded as a commodity in financial markets which affect the way electric power grids are controlled and operated. Today's electrical engineers are compelled to understand both the technical and business sides of such changes in order to address the needs of the electric power industry.

The Department of Electrical and Computer Engineering and the Stuart School of Business have teamed up to offer a master's degree in electricity markets. Combining courses from graduate programs in electrical engineering and in finance, the Master of Electricity Markets degree program provides graduate-level education in electricity suitable for electric power engineers. A background in finance is not required.

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 this 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 311	Engineering Electronics	4
ECE 319	Fundamentals of Power Engineering	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 ECE Short Courses 700-Level Credit	4
Maximum Transfer Credit	9

Code	Title	Credit Hours
<b>Required Core Courses</b>		<b>(15-16)</b>
Select a minimum of five courses from the following:		15-16
ECE 417	Power Distribution Engineering	3
ECE 418 or ECE 419	Power System Analysis Power Systems Analysis with Laboratory	3-4
ECE 420	Analytical Methods for Power System Economics and Cybersecurity	3
ECE 537	Optimal Feedback Control	3
ECE 553	Power System Planning	3
ECE 555	Power Market Operations	3
ECE 556	Power Market Economics and Security	3
ECE 557	Fault-Tolerant Power Systems	3
ECE 558	Power System Reliability	3
ECE 561	Deregulated Power Systems	3
ECE 562	Power System Transaction Management	3
ECE 563	Artificial Intelligence in Smart Grid	3
ECE 564	Control and Operation of Electric Power Systems	3
ECE 579	Operations and Planning and Distributed Power Grid	3
ECE 580	Elements of Sustainable Energy	3
ECE 581	Elements of Smart Grid	3
ECE 582	Microgrid Design and Operation	3

<b>Finance Courses</b>			<b>(6)</b>
Select a minimum of two courses from the following:			6
MSF 502	Statistical Analysis in Financial Markets <sup>1</sup>	3	
MSF 503	Financial Modeling <sup>1</sup>	3	
MSF 504	Valuation and Portfolio Management	3	
MSF 505	Futures, Options, and OTC Derivatives	3	
MSF 524	Models for Derivatives	3	
MSF 526		3	
MSF 534	Corporate Finance	3	
MSF 554	Market Risk Management	3	
MSF 584		3	
<b>General Electives</b>			<b>(9)</b>
Select nine credit hours of electives from ECE 400-799			9
<b>Total Credit Hours</b>			<b>30-31</b>

<sup>1</sup> A student can take MSF 502 or MSF 503, but only one can be counted toward the degree program.