

# CERTIFICATE IN POWER ENGINEERING

This program provides power engineers with a solid foundation in the design and analysis of large-scale power systems and state-of-the-art power conversion systems, including power systems control, power electronics, motor drives, design of fault-tolerant systems, power markets, and fundamentals of power system operation and planning.

## Curriculum

Code	Title	Credit Hours
<b>Required Courses</b>		<b>(3-4)</b>
Select a minimum of one course from the following:		3-4
ECE 411	Power Electronics	4
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
<b>Elective Courses</b>		<b>(9)</b>
Select a minimum of three courses from the following:		9
ECE 411	Power Electronics	4
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 512	Hybrid Electric Vehicle Drives	3
ECE 523	Fundamentals of Semiconductor Devices	3
ECE 533	Robust Control	3
ECE 537	Next Generation Smart Grid	3
ECE 538	Renewable Energies	3
ECE 539	Computer Aided Design of Electric Machines	3
ECE 540	Reliability Theory and System Implementation	3
ECE 548	Energy Harvesting	3
ECE 549	Motion Control Systems Dynamics	3
ECE 550	Power Electronic Dynamics and Control	3
ECE 551	Advanced Power Electronics	3
ECE 552	Adjustable Speed Drives	3
ECE 553	Power System Planning	3
ECE 554	Power System Relaying	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 559	High Voltage Power Transmission	3
ECE 560	Power Systems Dynamics and Stability	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