

Power Engineering Certification to MEng-ECE Path

Power Engineering Certificate Requirements

MEng in Electrical and Computer Engineering Requirements (12 credits)

All students must take the following four core courses:

1. **ECE 5510** Power System Analysis
2. **ECE 5520** Advanced Power Electronics
3. **ECE 5530** Modeling and Control of Electric Drives
4. **ECE 5540** Electrical System Protection and Switchgear

MEng in Electrical Engineering Requirements

MEng Core Courses (12 credits)

1. **ENGR 5311** Professional Communication and Information Management
2. **ENGR 5312** Engineering Project Planning and Management
3. **ENGR 5314** Advanced Engineering Mathematics
4. **ENGR 5315** Capstone Project

Electrical and Computer Engineering Concentration

Concentration Core Courses (6 credits; any 2 of the following courses)

Power Engineering

1. **ECE 5512** Power Distribution
2. **ECE 5550** Microgrids
3. **ECE 5552** Communication Systems for Distribution Grids
4. **ECE 5554** Distribution Management Systems
5. **ECE 5542** Asset Management and Condition Monitoring of Modern Power Systems
6. **ECE 5544** Electrical Insulation System
7. **ECE 6095** EM Transients in Power Systems
8. **ECE 6095** Multi-disciplinary Optimization Techniques for System Design
9. **ECE 6095** Renewable Energy Power Conversion

Communications and Systems

10. **ECE 5101** Introduction to System Theory
11. **ECE 5121** Multivariable Digital & Robust Control Systems
12. **ECE 5201** Electromagnetic Wave Propagation
13. **ECE 6102** Optimal & Model Predictive Control
14. **ECE 6104** Information Control & Games
15. **ECE 6108** Linear Programming & Network Flows
16. **ECE 6111** Applied Probability and Stochastic Processes
17. **ECE 6122** Digital Signal Processing
18. **ECE 6437** Computation Methods in Optimization
19. **ECE 6439** Estimation and Filtering Theory

"A student who has completed the power engineering certificate program will need to submit an official application to the MEng program. Admission will be based on the nominal requirements for the MEng application plus the GPA, for the courses taken during the certificate program, being 3.0 or above. Once admitted, the student will need to take two additional core courses, most likely from the power engineering area. Also, the students will need to take the MEng program core courses in order to graduate."

