

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING WITH A CONCENTRATION

Power and Energy Systems

Students pursuing a Bachelor of Science in Electrical Engineering degree may choose to add a concentration in Power and Energy Systems. The plan of study for the BSEE with a concentration in Power and Energy Systems is similar to the BSEE plan of study with two primary exceptions:

- All BSEE students are required to complete Technical Elective courses. Students pursuing the BSEE with a concentration in Power and Energy Systems are required to enroll in approved Power and Energy Technical Elective courses. **See Course List (below).**
- During the senior year, Power and Energy Systems Concentration students must complete an intensive, two-semester, energy-related, senior design project.

Furthermore, students in the Concentration are strongly encouraged to take the Fundamentals of Engineering exam prior to graduation. If you are interested in declaring the Power and Energy Systems Concentration, please complete the attached application and see Mrs. Jerena McNeil-Griffin, EPIC 2242.

How to Enroll in the Power and Energy Systems Concentration

Students pursuing the Bachelor of Science in Electrical Engineering Degree (B.S.E.E) may apply to the Power and Energy Concentration in Electrical Engineering after successfully completing their sophomore year with a GPA of at least 3.0. In order to be admitted into the concentration, students must have completed Physics II (PHYS 2102), Calculus I, II, and III (Math 1241, 1242, and 2241), Matrices and Linear Algebra (MATH 2164), and Network Theory II (ECGR 2112). Application for the concentration takes place during the semester that the student is enrolled in ECGR 3142, Electromagnetic Devices.

Course List

Students must enroll in the following prerequisite courses:

- ECGR 3142: Electromagnetic Devices
- ECGR 3112: System Analysis II

Students must enroll in the following Power and Energy courses in order to earn the concentration:

- ECGR 4141: Power System Analysis I

Concentration Technical Elective Courses (6 hours) - Select two of the following

- ECGR 4104: Computational Methods in Power Systems
- ECGR 4113: Modeling and Analysis of Dynamic Systems
- ECGR 4123: Analog and digital Communication
- ECGR 4142: Power System Analysis II
- ECGR 4143: Electrical Machinery
- ECGR 4144: Power Electronics I
- ECGR 4151: Solar Cell Fundamentals and Technology
- ECGR 4171: Introduction to Energy Systems
- ECGR 4172: Energy Markets
- ECGR 4190: Power Generation Operation and Control
- ECGR 4191: Dynamic and Transient Analysis of Power System

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Application

The application process consists of completing the top portion of this form along with a *Change of Major Form*. Both forms will need to be completed with and submitted to Mrs. Jerena McNeil-Griffin, located in EPIC 2242. Upon review of the application by the Undergraduate Coordinator, students wishing to enroll in the concentration will receive an email from the department regarding the status of their application. Application for the concentration takes place during the semester that the student is enrolled in ECGR 3142, Electromagnetic Devices.

Student's Name (print)

Student's ID#

Overall GPA

Major GPA

Course Name	Semester Completed	Grade
PHYS 2102		
ECGR 2112		
MATH 1241		
MATH 1242		
MATH 2241		
MATH 2164		

I have completed a *Change of Major Form* to have the concentration added to my UNC Charlotte transcript.

Student's Signature

Date