

## **ECE 4343: Introduction to Power Systems**

**Credit / Contact hours:** 3 / 3

**Course coordinator:** Michael Giesselmann

**Textbook(s) and/or other required material:** Glover and Sarma, *Power System Analysis and Design with Personal Computer Applications*, PWS Publishers, 1987.

**Catalog description:** Electrical power transmission and distribution systems; power generation systems, system modeling, planning, management and protection.

**Pre-requisite(s) or co-requisites:** ECE 3341.

**Designation:** Elective

**Course learning outcomes:** Upon completion of this course, students should be able to do the following:

1. Analyze electrical power distribution systems.
2. Design electrical power distribution systems.

**Student outcomes addressed:** a, c, e, and k.

### **Topics covered**

Electric power system description – 2 hours  
Transmission and distribution line modeling – 4 hours  
Symmetrical components – 5 hours  
Polyphase transformers and connections – 5 hours  
Alternator models – 2 hours  
Network representation – 2 hours  
System load flow – 6 hours  
Economic operation of systems – 4 hours  
Short circuit studies – 4 hours  
Relays – 4 hours  
Tests and reviews – 4 hours