Electrical and Computer Engineering 6140
Advanced Electrical Energy Engineering

Course Description:
Computer-aided design of electromechanical, solar, chemical, hydroelectric, hydrocarbon, wind, nuclear, geothermal, oceanic, transmission, and distribution systems. Priority assessment is given to efficiency, reliability, cost effectiveness, and reduced environmental impact (renewable and nonrenewable energy).

Prerequisites:
ECE 5140

Textbook:
No textbook required

Course Outcomes:
1. Engineering of electrical engineering source systems.
2. Priority assessment is given to efficiency, reliability, cost effectiveness, and reduced environmental impact based on both nonrenewable and renewable energy.
3. Analysis and design of electromechanical, solar, chemical, hydroelectric, hydrocarbon, wind, geothermal, oceanic including electrical generation, transmission, and distribution systems.

Topics Covered:
- Introduction
- Electrical Energy
- Solar Energy
- Chemical Cells
- Electromechanical Generators
- Electrical Energy Transmission
- Hydrocarbon Energy
- Hydroelectric Energy
- Nuclear Energy
- Wind Energy
- Geothermal Energy
- Oceanic Energy

Outcome Assessments (Grades):
- Team Participation 25%
- Quality of Design 25%
- Preliminary Design Review 10%
- Critical Design Review 10%
- Final Report 20%
- Lab Book 10%
Class Schedule:
   Class
   Three times a week for fifty minutes.

Prepared by:
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