Electrical and Computer Engineering 5140
Electrical Energy Engineering

Elective

Course Description:
Introduction to electrical energy and power sources, distribution and consumption, economics, device, instrumentation, and systems analysis/design.

Textbook:

References:


Course Outcomes:
1. Engineering of electrical energy 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, nuclear, geothermal, oceanic including electrical generation, transmission, and distribution systems.

Topics Covered:
- Energy
- Electrical Energy
- Solar Energy
- Chemical Cells
- Electromechanical Generators
- Electrical Transmission
- Hydroelectric Energy
- Nuclear Energy
- Wind Energy
- Geothermal Energy
- Oceanic Energy
Outcome Assessments (Grades):

- Participation 15%
- Lab Experiments and Book 20%
- Homework 20%
- Quizzes 25%
- Final Exam 20%

Class Schedule:

Class Three times a week for fifty minutes.

Contribution of course to meeting the requirements of Criterion 5:

3 credit hours of Engineering Topics and contains significant engineering design content

Relationship of course to student outcomes:

a. An ability to apply knowledge of mathematics, science, and engineering.
b. An ability to design and conduct experiments, as well as to analyze and interpret data.
c. An ability to design a system, component, or process to meet desired needs.
d. An ability to function on multidisciplinary teams.
e. An ability to identify, formulate, and solve engineering problems.
g. An ability to communicate effectively.
k. An ability to sue the techniques, skills, and modern engineering tools necessary for engineering practice.

Instructor:

Doran Baker, Professor
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