EEO470: Renewable Distributed Generation and Storage

2013-2014 Catalog Description:

This course introduces a specific type of electric power system, the microgrid. With ongoing deregulation of the electrical utility industry and emergence of more renewable smaller generation sources advancement into the electrical power industry will be met by microgrids. Topics will include a historical global perspective of electrical systems, individual enabling technologies that comprise a microgrid will be presented. The class involves a design of a microgrid that incorporates and considers economic, environmental, sustainable, manufacturable, ethical, health and safety, social and political constraints.

Goals:
The student will be able to propose and discuss ways engineers are contributing or might contribute to the solution of a specified regional, national, and global problem.

Objectives:
1. The student will be able to examine a description of a problematic technology-related situation and identify ways that engineers might contribute to a solution.
2. The student will be able to model a prototype of a design and demonstrate that it meets performance specifications.
3. The student will be able to find relevant sources of information about a specified topic in the library and on the world wide web.
4. The student will be able to generate an oral presentation using electronic tools to disseminate their work.

PROGRAM OUTCOMES AND ASSESSMENT

On the following "3 a-k" list, please check those topics which are covered within the course:

- (a) ability to apply knowledge of math, engineering, and science 10%
- (b1) ability to design and conduct experiments 0%
- (b2) ability to analyze and interpret data 10%
- (c) ability to design system, component or process to meet needs 10%
- (d) ability to function on multi-disciplinary teams 10%
- (e) ability to identify, formulate, and solve engineering problems 10%
- (f) understanding of professional and ethical responsibility 10%
- (g) ability to communicate effectively 10%
- (h) broad education 5%
- (i) recognition of need an ability to engage in life-long learning 10%
- (j) knowledge of contemporary issues 5%
- (k) ability to use techniques, skills, and tools in engineering practice 10%
- Any other outcomes and assessments?