Standard Course Syllabus
Department of Electrical and Computer Engineering (ECE)

776.03 Reliability Engineering Applications

ABET Classification

EE Program of Study
This course IS NOT an EE core course.
This course CAN be used as an EE technical elective.
This class counts toward area of concentration in Power

CpE Program of Study
This course IS NOT a CpE core course.
12 hours of CpE technical electives must be on a prescribed list.
This course IS NOT on that list.

Catalog Description
Study and design of a complete reliability program for a selected engineering system.

Level Credits Class Meeting Pattern (For example, "3 cl." means 3, 48-min classes per week.)
UG 1 1 cl.

Course Prerequisites
Prereq or concur: 776.02 or Ind Eng 776.02 or Mech Eng 776.02 or permission of instructor.

Quarters of Offering
Wi Qtr.

General Info, Cross-listings, Exclusions, etc.

Cross-listed with:

General Info:

Exclusion:

Courses that require this as a direct prerequisite:

Prereq by topic: Differential equations, linear algebra, physics, general reliability engineering knowledge

Learning Outcomes (with ABET Criterion 3 Student Outcomes for Undergraduate Courses)
1. Students will apply the knowledge of mathematics and engineering, especially in the areas of probability and statistics. (Criterion 3(a))
2. Students will be able to interpret data by the use of statistics. (Criterion 3(b))
3. Students will be able to design a system, component or process, and apply simultaneously reliability criteria. (Criterion 3(c))
4. Students will be able to work and write reports and term papers together as team members. (Criterion 3(d))
5. Students will develop an ability to recognize, formulate and solve reliability problems. (Criterion 3(e))
6. Students will be able to understand professional responsibility through data collection procedures. (Criterion 3(f))
7. Students will be able to understand professional and ethical responsibility due to the review of reliability issues, and public relations and contemporary issues associated with them. (Criterion 3(f))
8. Students will be able to communicate more efficiently. (Criterion 3(g))
9. Students will be able to understand the impact of engineering solutions in a global and societal context, through plant visits and the review of industry practice. (Criterion 3(h))
10. Students will be able to use the techniques, skills, and modern engineering tools necessary for engineering practice, through the use of library, Internet, computer programs, and work processors. (Criterion 3(k))

Text(s) and Other Course Materials Author(s) Publisher
No text

References (supplemental reading)
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1996.

Topics and (# of Lectures)
Sets, probability (2)
Probability, distributions (2)
Distributions (2)
Combinatorial reliability (4)
Markov processes (4)
Case studies (6)

Representative Lab Assignments

Grading Plan
Project 100%

Relationship to ABET Criterion 3 Student Outcomes (a-k)
See Learning Objective listed above.

Relationship to Additional ABET Student Outcomes
CpE (m), (n)
EE (m), (n)

Course Supervisor: Aldemir, T (ME)
Date of Approval of Standard Syllabus by Area: 2/03
Most Recent Course Evaluation: Su08
Most Recent Area Review: Sp09