Course: EENG 5340  Reliability

Syllabus

Catalog Description:
Basic concepts of probability and reliability, time dependent reliability models, reliability growth predictions, strength based reliability; weakest link and fail-safe systems; Monte Carlo Methods, maintainability, availability, fault tree analysis, reliability data bases.

Prerequisites: Prerequisites, Engineering Graduate Student, Course in probability and statistics, Programming skill in high level language and/or Matlab

Credits: (3 hours lecture, 0 hours laboratory per week)


Additional Material: Access to MATLAB software

Course Coordinator: Ron J Pieper

Topics Covered: (paragraph of topics separated by semicolons)
Review of statistics and probability; Reliability models, Bath tub curve; Burn in and Accelerated testing; Failure rate; Time dependent; reliability; reliability growth; Monte Carlo Methods; Maintainability, Fault tree analysis

Evaluation Methods: (only items in dark print apply):
1. Examinations / Quizzes
2. Homework
3. Report
4. Computer Programming
5. Project
6. Presentation
7. Course Participation
8. Peer Review

Course Objectives:\n1. Program, plot and interpret discrete and continuous probability distribution functions
2. Apply mathematical knowledge of statistics and probability to calculate failure rates, and reliability

Relationship to Program Outcomes (only items in dark print apply): This course supports the following Electrical Engineering Program Outcomes, which state that our students will (only items in dark print apply):
1. Possess a breadth and depth of knowledge in electrical and computer engineering.
2. Possess and demonstrate oral and written communication skills  
3. Demonstrate the capability to perform independent learning and investigation.  

*Numbers in brackets refer to course objective(s) that address the Program Outcome.*

**Contribution to Meeting Professional Component:** (in semester hours)

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<thead>
<tr>
<th>Component</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Mathematics and Basic Sciences</td>
<td>1</td>
</tr>
<tr>
<td>Engineering Sciences and Design</td>
<td>2</td>
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<td>General Education Component</td>
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Prepared By: Ron J Pieper  
Date: August 9, 2011