Syllabus for ESI 5236, Reliability Engineering

1. Course Description (3 semester hours) – Mathematical models and methods of reliability engineering.
2. Pre-requisites: Probability: STA 4321 or equivalent
3. Course Objectives: Understanding of basic principles, rather than “cook book” use of tables or handbooks. Application to system requirements, design, manufacturing, and testing, with real-world examples
4. Instructor: David E. Jeffcoat
   a. Office: Room 140, UF REEF, Shalimar, FL
   b. Phone: 850-833-9355 Ext 225
   c. E-mail address: djeffcoat@ufl.edu
   d. Class Web site: EDGE e-learning site for ESI 5236
   e. Office hours: Monday – Thursday, 9:30 – 11:00 a.m.
5. Teaching Assistant: Sadie Thomas
6. Meeting Times: Mondays, 12:30 – 2:30, and Wednesdays, 12:30 – 1:30 central time
7. Meeting Location: UF REEF, Shalimar, FL
8. Material and Supply Fees: None
10. Course Outline (planned topics)
    • Discrete random variables
      o Binomial distribution
      o Poisson distribution
      o Acceptance testing
    • Continuous random variables
      o Normal distribution
      o Exponential distribution
      o Weibull distribution
    • Reliability and rates of failure
      o Constant failure rate model
      o Time-dependent failure rates
    • Redundancy
      o Active parallel systems
      o High- and low-level redundancy
    • Maintained systems
      o Ideal and imperfect preventive maintenance
      o Availability
      o Maintainability
    • Data and distributions
      o Goodness-of-fit
    • Failure Interactions
      o Markov analysis
11. Attendance and Expectations: Attendance is not required. Any student who can attend any taping session is welcome. There is no penalty for absence or tardiness.

12. Grades are based on assignments, quizzes and final exam.

13. Grading Scale: 90-100 A, 85-89 B+, 80-84 B. Instructor reserves the right to scale grades, but scale will be no more rigorous than shown.

“In order to graduate, graduate students must have an overall GPA and an upper-division GPA of 3.0 or better (B or better). Note: a B- average is equivalent to a GPA of 2.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit:

http://gradschool.ufl.edu/catalog/current-catalog/catalog-general-regulations.html#grades

14. Make-up Exam Policy: Exams may be made-up in extreme circumstances. Please contact instructor.

15. Honesty Policy – All students admitted to the University of Florida have signed a statement of academic honesty committing to honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

16. Accommodation for Students with Disabilities – Students Requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

17. UF Counseling Services – Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:
   · UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
   · Career Resource Center, Reitz Union, 392-1601, career and job search services.

18. Software Use – All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.