DESCRIPTION
This combined statistics and economics course is designed for students seeking an introduction to the two disciplines: 1) engineering economic analyses and 2) statistical techniques in engineering disciplines. Each text of the separate disciplines provides students with real-life scenarios for furthering their understanding of the concepts presented. In economics, focus will be on the importance of making the economic case of engineering projects and products to decision makers. In statistics, special emphasis will be on techniques most often used in engineering practice.

PART I. ENGINEERING ECONOMICS


OBJECTIVES:

- Language of finance and communication to decision makers
- Evaluation of engineering work on economic basis
- Use of microcomputer and Excel’s financial analysis function
- Use of factors table in economic analysis

TOPICS (First Half Semester)

1. Engineering Economic Analysis
2. Time Value of Money
3. Borrowing, Lending, and Investing
4. Planning Horizon and Minimum Attractive Rate of Return
5. Present Worth Analysis
6. Annual Worth Analysis
7. Rate of Return Analysis
8. Depreciation Methods
9. After-Tax Economic Analysis
10. Replacement Analysis

PART II. STATISTICS


OBJECTIVES:

- Appreciation and use of descriptive and analytical tools for variability
- Understanding of statistical methods
- Applications in engineering problem solving

TOPICS (Second Half Semester):

1. Statistics in Engineering
2. Data Summary and Presentation
3. Random Variables and Probability Distributions
4. Decision Making for a Single Sample
5. Decision Making for Two Samples
6. Building Empirical Models
7. Design of Engineering Experiments

GRADING:

Course grades will be determined by two exams (30% each), assignments (30%), and class participation (10%). Midterm to be announced; final May 5, 2011, 8-10 am.

CLASS POLICIES:

1. Surfing the web during class is considered negative participation.
2. Late exercises will not be accepted after the due date.
3. Make-up exams will be given only if written documentation of the extenuating circumstances regarding the absence is provided and the instructor is notified prior to missing the test.
4. The instructor may amend this syllabus and will announce changes in class.
5. In addition, please observe: http://www.coe.utah.edu/SemesterGuidelines.pdf