

BE 2326 – Economics for Engineers & Scientists – Syllabus

CRN: 22470 - Spring 20

TR 13:30-14:50: UGLC 220

Course Description

This course explores models for considering financial, risk, and benefit aspects within engineering projects leading to more robust decision making. There is a stronger focus on the financial aspects of projects since often engineering activity is aimed at attaining specified ends using available or purchased resources within a limited amount of time. Often being an effective engineer means proposing solutions for a problem and selecting the best among various alternatives. Because cost is such an important component in decision-making, various techniques for comparing alternatives on an economic basis are presented. Other topics include depreciation, inflation considerations, cost estimating, and sensitivity analysis. After completing the course, a student should be able to identify the alternative that should be selected from two or more mutually exclusive alternatives on the basis of economic considerations.

Textbook Information

Basics of Engineering Economy Edition; 2nd Edition. Author: Blank, Publisher: McGraw-Hill, 2014
ISBN: 9780073376356

Instructor Information

Instructor:	Nathaniel V. Robinson
Office:	Kelly Hall 209** ** likely to change
Office Hours:	Tues. 11AM - 12PM or by appointment
Email:	nvrobinson@utep.edu
Phone:	915-747-5745

Organization and Method of Instruction

The delivery will be in-person lecture, open discussion, problem sessions, stone tables, and project activities. The website below was created by the author of the book and consists of (1) condensed explanatory written materials with solved problems (2) PowerPoint presentations, (3) multiple choice practice tests (with answers) (4) old exam questions and answers from the book's author, and (5) student generated multiple-choice questions and answers. You may use this Website to practice problems, review tutorials, etc. if desired and to improve your learning experience:

<http://engineering.utep.edu/enge/ie3326.htm>

USERNAME: ILUVIT

Password: 2EZ4ME

McGraw-Hill web Site Address :

http://highered.mcgraw-hill.com/sites/0073376302/student_view0/index.html

Content to Exam Projection (subject to change):

- Exam 1:** Foundations of Engineering Economy; Interest, Banks, Base Rates & The Fed; Factors: How Time and Interest Affect Money - Factors in Calculation; Gradients; Present Worth Analysis
- Exam 2:** Exam 1 + Material and Annual Worth Analysis; Nominal and Effective Interest Rates; Profit, Externalities & Margins
- Exam 3:** Exam 2 + Material and Rate of Return Analysis; Breakeven, Sensitivity, and Payback Analysis; Benefit/Cost Analysis and Public Sector Projects; Replacement and Retention Decisions

Exam 4: Exam 3 + Material and Effects of Inflation; Cost Estimation Techniques; Depreciation Methods & Tax Impact; Alternative Evaluation Considering Multiple Attributes and Risk

Final: Exam 4 + Accounting Reports and Business Ratios

Project: Using Spreadsheets and Microsoft Excel to solve project based problems on content above

Class and Test Schedule

Overall grade will be comprised of 4 exams + final exam. Class schedule with tentative dates for exams will be posted on Blackboard.

Performance Evaluation

Grades and communication will be conducted using Blackboard. Students that email me their favorite picture of Art Blakey before the second week of term will receive a hint to the first problem of the first exam. The course grade will be derived from the student's four exams and final in accordance with the ranges shown in Table 1 below:

Overall Average	Letter Grade
≥ 90	A
89 - 80	B
79 - 70	C
69 - 60	D
< 60	F

Policy on Academic Integrity

In all matters of intellectual pursuit, UTEP faculty and students must strive to achieve excellence based on the quality of work produced by the individual. In the classroom and in all other academic activities, students are expected to uphold the highest standards of academic integrity. Any form of scholastic dishonesty is an affront to the pursuit of knowledge and jeopardizes the quality of the degree awarded to all graduates of UTEP. It is imperative that the members of this academic community understand the regulations pertaining to academic integrity and that all faculty insist on adherence to those standards.

Students are expected to be above reproach in all scholastic activities. Students who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure of the course and dismissal from the university. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or part to another person, taking an examination for another person, any act designed to give unfair advantage to any student or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the Handbook of Operating Procedures, and are available in the Office of the Dean of Students, and the homepage of the Dean of Students at www.utep.edu may result in sanctions ranging from probation, to a failing grade on the work in question, to a failing grade in the course, to suspension or dismissal, among others.

Statement on Disability

If you feel you have a disability that requires accommodation, contact the Disabled Student Services Office at 747-5148, go to the Union East Building, Room 106, or email dss@utep.edu.

Student Conduct

Students should participate in class discussions and activities, as well as ask questions if they arise. Students are expected to arrive to class on time, remain in class until the class is dismissed, and to refrain from private conversations and outside reading materials during class. Failure to appear and take an exam is the liability of the student and make up exams will only be given due to medical leave, emergency or approved absence prior to the exam. Please turn off cell phones and pagers during class.