

**IEGR 350 Engineering Economy**  
**Fall 2015 Semester; 3 credits; Lecture**

**Catalog Description:**

Introduces economic analysis from an engineering and personal finance perspective involving cost concepts (i.e., total revenue, optimal demand, and maximum profit); the time value of money concept with equivalence involving present, future, and uniform series cash flows; evaluation of single and mutually exclusive alternative projects/products utilizing present worth, future worth, annual worth, internal rate of return, and payback methods; and depreciation and income tax analyses.

**Prerequisites: IEGR 204 and MATH 241. Student must pass each course with a grade of "C" or better.**

**(FALL/SPRING)**

**Objective(s):**

- 1) To provide the knowledge and skills (ability) to perform economic analyses;
- 2) To efficiently set up and solve engineering economy problems within the engineering discipline as well as personal (real life) situations.

**Instructor:** Masud Salimian, PhD

**Office Location:** MEB 218

**Office Phone:** 443-885-3135

**E-mail:** [masud.salimian@morgan.edu](mailto:masud.salimian@morgan.edu)

**URL (webpage):** <http://salimian.webersedu.com/>

**Office Hours:** Mon. 1-4 pm; Tue. 1-4 pm, others by appointment

**Textbook:** Blank, L.T., and Tarquin, A.J. (2011), *Engineering Economy*, 7th edition, McGraw-Hill.  
ISBN-13: 978-0073376301; ISBN-10: 0073376302 (available for purchase/renting online)

**Software:** Microsoft Excel (only for special cases)

**Grading System:** 10% - Literature Critiques  
25% - Quizzes/Homework  
20% - Exam 1  
20% - Exam 2 (Midterm)  
25% - Exam 3 (Final)

Scale = A: 90 and above;      B: 80-89;      C: 70-79;      F: below 70

**Course Policy:**

All students are expected to conform to all University standards of conduct in accordance with the University Catalog. All work presented on examinations and quizzes must be of your own. Any deviation from this policy will be regarded as academic dishonesty and will be pursued through appropriate University channels to the fullest extent possible. Students are **strongly recommended** to attend every class and solve the assigned homework problems. Quizzes will either be announced or given at random, and mandatory literature critiques will be assigned and collected.

## **Topics**

Topic 1      **Introduction to Engineering Economy**  
Introduce the subject of engineering economy and to discuss the critical role of engineering design and analysis as well as the basic principles of the subject.

Topic 2      **Cost Concepts and Design Economics**  
Describe some of the basic cost terminology and concepts that are used throughout the course and to illustrate how they should be used in engineering economic analysis and decision making in relation to total profit and total revenue.

## **Exam 1**

Topic 3      **Time Value of the Money**  
Describe the return to capital in the form of interest (or profit) and to illustrate how basic equivalence calculations are made with respect to the time value of money (capital) in engineering economy studies. Illustrate several basic methods for making engineering economy studies considering the time value of money and to describe briefly the underlying assumptions and interrelationships among these methods.

## **Exam 2 (Midterm)**

Topic 4      **Evaluating a Single Project**  
Develop and demonstrate the economic analysis of a single project (alternative) for an engineering project.

Topic 5      **Comparison and Selection among Alternatives**  
Develop and demonstrate the economic analysis and comparison of mutually exclusive design alternatives for an engineering project.

Topic 6      **Depreciation and Income Taxes**  
Illustrate some of the concepts and mechanics of depreciation and to describe their role in after-tax analysis.

Topic 7      **Price Changes and Exchange Rates\***  
Introduce a methodology for dealing with price changes caused by inflation and deflation, develop and illustrate the proper techniques to account for these effects, and discuss the relationship of these concepts to foreign exchange rates and the analysis of engineering projects in currencies other than the U.S. dollar.

## **Exam 3 (Final)**

(\* = if time permits)