

# **IE 341**

## **Engineering Economy**

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### **Course Description:**

This course introduces the fundamentals in the determination of the economic feasibility of engineering undertakings. Students will be equipped with a sound understanding of the principles, basic concepts and methods of engineering economy; it is intended that students develop proficiency with these methods and with the process for making rational decisions in the financial comparison of engineering alternatives. Other objectives include a student understanding of money-time relationships, equivalence, replacement analysis, public project evaluation, utility theory, inflation, depreciation, and uncertainty.

### **Topics:**

1. Introduction-Cost Concepts 3 classes
2. Money-Time Relationships and Equivalence 6 classes
3. Applications of Money-Time Relationships 3 classes
4. Comparison of Alternatives 3 classes
5. Depreciation and Income Tax Considerations 3 classes
6. Consideration of Inflation and Cost Estimating 3 classes
7. Replacement Analysis 3 classes
8. Economy Studies for Public Projects 3 classes
9. Breakeven Sensitivity and Risk Analysis 3 classes
10. Decision Models and Utility Theory 3 classes

### **Grading:**

Midterms : 46% (23% each)  
Quizzes : 24%  
Final : 30%

### **Dates:**

Midterm 1: November 6, 2009 Friday  
Midterm 2: December 18, 2009 Friday

### **Textbook:**

Sullivan, W.G., Wicks, E.M., and Luxhoj, J.T., Engineering Economy, 13<sup>th</sup> Edition, Prentice Hall 2006.

### **Complementary References:**

Blank, L.T., Tarquin, A.J., 2005. Engineering Economy, 6<sup>th</sup> Edition.  
DeGarmo, E.P., Sullivan, W.G., Bontadelli, J.A., 2002. Engineering Economy, 12<sup>th</sup> Edition.  
Bussey, L., 1978. The Economic Analysis of Industrial Projects.  
Dixit, A.K., Pindyck, R.S., 1994. Investment under Uncertainty.