

INSY 3600: Engineering Economy

3 Credit Hours

Instructor: Eliana M. Pena Tibaduiza

Course Textbook: Fundamentals of Engineering Economics, 4th Edition by Chan S. Park, Prentice Hall.

Course Content:

- Description- Principles required in engineering economic studies
- Prerequisite- None
- Class is Required

Course Goals:

- Objectives: A high degree of competence in making quantitative evaluation of engineering proposals in terms of worth and cost should be achieved. The student should develop an understanding of the economic factors associated with the engineering design process and an awareness of the economic problems confronting an industrial enterprise or other organization. Relevant finance and accounting concepts are covered.
- Specific Outcomes: While this course relates to several of the department's stated ABET outcomes, the three outcomes for which assessments are taken are: e) an ability to identify, formulate, and solve engineering problems; h) the broad education necessary to understand the impact of engineering solutions in a global and societal context, and j) a knowledge of contemporary issues. In meeting these specific issues the students are challenged with a series of engineering examples using mathematical calculations and required to evaluate the economic impact (e). To introduce the global impact on engineering the students are required to understand the impact on currency market fluctuations on economic studies (h). Finally in introducing "contemporary issues" students are instructed in financial issues facing the corporate environment and are given instruction in understanding financial markets (stock, bonds, and currency) – (j)

Topics to be Covered:

Time Value of Money

Interests and Loans

Present Worth

Annual Equivalence

Rate of Return

Cost Analysis Benefit

Depreciation and Taxes

Project Cash Flow Analysis

Sensitivity Analysis

Cost of Capital

Financial Statements

Financial Ratios