

NE364- Engineering Economy

CREDIT HOURS

3 Hours

CONTACT HOURS (Hours/week)

Lecture: 2; Tutorial: 2;

TEXT BOOK

William G Sullivan, Elin M Wicks, & James Luxhoj, "Engineering Economy", 13th Edition, 2006.

COURSE DESCRIPTION

A study of basic concepts emphasizing analysis of aggregate economy. Examination of the processes of price determination and calculation of optimum demand for maximum profit. Basic principles of money-time relationship. Methods of investment assessment and fundamental techniques of comparison of investment opportunities. Theories of depreciation of physical facilities and study of cost recovery systems.

PREREQUISITE:

None

RELATION OF COURSE TO PROGRAM

Required

COURSE INSTRUCTION OUTCOMES

The student will be able to:

- Introduce basic cost concepts and economic environment.
- Be familiarized with the principles of money time relations and basics of investments opportunities assessment and evaluation.

TOPICS COVERED

- Introduction and overview.
- Cost concepts and the economic environment.
- Principles of money – time relations, the concept of economic equivalence.
- Cash flow diagrams: Interest formulas and uniform series.
- Cash flow diagrams: Uniform gradient series and geometric sequence.
- Nominal and effective interest rates, continuous compounding and continuous cash flows.
- Applications of engineering economy: Methods of investment assessment.
- Comparing alternatives: Useful life is equal to the study period.
- Comparing alternatives: Useful life is shorter than the study period.
- Comparing alternatives: Useful life is longer than the study period.

- The imputed market value technique.
- Depreciation: Historical Methods.
- Depreciation: Cost recovery systems.

CONTRIBUTION OF COURSE TO MEET THE REQUIREMENTS OF CRITERION 5:

Professional component Content			
Math and Basic Sciences	Engineering Topics	General Education	Other
		✓	

RELATIONSHIP OF COURSE TO STUDENT OUTCOMES:

Student Outcomes		Course aspects
A	An ability to apply knowledge of mathematics, science, and engineering	a ₁ a ₂
B	An ability to design and conduct experiments, analyze and interpret data.	
C	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economics, environmental, social, political, ethical, health, and safety, manufacturability, and sustainability	
D	An ability to function on multi-disciplinary teams.	
E	An ability to identify, formulate, and solve engineering problems	e ₁ e ₂ e ₃
F	An understanding of professional and ethical responsibility	
G	An ability to communicate effectively	
H	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and social content	h ₁ h ₂ h ₃ h ₄
I	A recognition of the need for, and an ability to engage in life-long learning.	
J	A knowledge of contemporary issues within and outside the electrical engineering profession.	j ₁ j ₂
k	An ability to use the techniques, skills, and modern engineering tools necessary for electrical engineering practice.	