NE 364 – Engineering Economy

CREDIT HOURS
3 Hours

CONTACT HOURS (Hours/week)
Lecture: 2; Tutorial: 2

COURSE COORDINATOR
Dr Bassem Roushdy

TEXT BOOK:
William G Sullivan, Elin M Wicks, & James Luxhoj, "Engineering Economy", latest edition.

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:
54 Credit Hours

RELATION OF COURSE TO PROGRAM:
Required

COURSE INSTRUCTION OUTCOMES:
The student gains knowledge on basic cost concepts and economic environment and is familiar with principles of money time relations, 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 REQUIREMSNTS OF CRITERION 5:

Professional Component Content			
Math and Basic Sciences	**Engineering Topics**	**General Education**	**Engineering Design**
		✓	

RELATIONSHIP OF COURSE TO STUDENT OUTCOMES:

Student Outcomes		Course Outcomes
a.	An ability to apply knowledge of mathematics, science, and engineering.	✓
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 economic, 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.	✓
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 societal context	
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.	✓
k.	An ability to use the techniques, skills, and modern engineering tools necessary for electrical engineering practice.	