

Summarized Course Description

Course number: ISE 305	Course name: Engineering Economy
Language: English	Pre-requisites: Junior Level
Credit hours: 3 (3+ 0 + 0)	Course level: Level 7

Course Description

وصف المقرر :

Introduction to concepts of economic decision-making from a cash flow viewpoint. It includes present worth analysis, cash flow equivalence, rates of return, replacement analysis, benefit-cost analysis, depreciation and taxes, and projects break-even point, selection, and sensitivity analysis.

Course objectives

أهداف المقرر :

- Develop students' awareness of the concepts of cash flow approach, time value of money, product/project costing and rate of return.
- Introduce students to the process of integrating engineering proposals with economic analysis in order to select among several viable alternative projects.
- Understand and appreciate the models and measures used in decision making in the area of engineering economics.

Course Outcomes

مخرجات التعليم:

Upon completing the course, the student should be able to:

1. Evaluate the economic feasibility of investments related to engineering projects.
2. Assess the impact of depreciation, taxation and other economic factors on projects' feasibility.
3. Conduct sensitivity analysis on key compounding parameters.
4. Develop policies for assets replacement.
5. Assess alternative financing modes.
6. Make financially prudent decisions in everyday life (car/home loans or investments).

Textbook and references

الكتاب المقرر والمراجع المساندة:

Book	Authors	Publisher	Publication year
Fundamentals of Engineering Economics, 3 rd Ed.	Park, Chan S.	Prentice Hall	2013
Engineering Economy and the Decision-making Process	Joseph C. Hartman	Pearson/Prentice Hall	2007
Engineering Economy	Leland Blank and Anthony Tarquin	McGraw-Hill	2012

Weekly breakdown of course topics

Week	Topic
1-4	Engineering economic decisions Cash Flows, Time Value of money & money management
5-6	Present and Future worth, annual equivalence analysis and Payback Period
7-8	Rate of return analysis
9	Bond Problems
10-11	Comparison of alternatives & replacement decisions
12-13	Depreciation
14	Corporate income tax Inflation and its impact on project cash flows
15	Economic analysis in the public sector (Benefit-Cost Analysis) Project break-even and sensitivity analysis