

Faculty of Engineering & Technology

Engineering Economics

Information :

Course Code : MAN 381

Level : Undergraduate

Course Hours : 2.00- Hours

Department : Department of Electrical Engineering

Instructor Information :

Title	Name	Office hours
Lecturer	HOSAM MOSTAFA MAHMOUD EID HEGAZY	1
Assistant Lecturer	Ahmed Amr Kadry Ahmed Shaheen	
Teaching Assistant	Mahmoud Mohamed Khalaf Ahmed	
Teaching Assistant	Sarah Salah Sayed Hussein Aly Elsheshtawy	

Area Of Study :

- Develop the students' knowledge about the present worth, the future worth and the annual worth for a given plant.
- Acquire students with basics that enable him to draw the cash flow diagram
- Train students to apply methods of economic selection among alternatives.
- Prepare students to be able to share ideas and work in a team or a group

Description :

Introductory finance: time value of money, cash flow analysis, and Investment evaluation methods: present worth, annual worth and internal rate of return, Depreciation models and asset replacement analysis, the impact of inflation, Bonds and Breakeven analysis.

Course outcomes :

a. Knowledge and Understanding: :

1 -	Define different items and quantities used in engineering economy.
2 -	Summarize the evaluation methods of a single project.
3 -	Demonstrate understanding of the breakeven concept and its governing relations.
4 -	Explain the methods used in depreciation calculations.
5 -	Define terminologies describing and dealing with bonds.
6 -	Compare different methods used for economical selection between alternatives.
7 -	Demonstrate the governing methods of depreciation.
8 -	Describe specific steps for economical selection among offered alternatives (projects).

b. Intellectual Skills: :

1 -	Deduce the relations between economical items such as present value, future value, and annual value.
2 -	Evaluate the salvage value for an equipment for a certain period.
3 -	Calculate the book value for an equipment at the end of a certain year.
4 -	Determine the depreciation for a specific device.

5 -	Find the present value paid for a bond under specific properties.
6 -	Evaluate the breakeven value and maximum profit of a product considering the variable market conditions.
7 -	Implement correct steps to evaluate the economical critical values of a given cash flow diagram such as present worth, annual worth, and future values.

c. Professional and Practical Skills: :

1 -	Apply an economical evaluation method to select between offered alternatives.
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d. General and Transferable Skills: :

1 -	Collaborate effectively within multidisciplinary team.
2 -	Communicate effectively

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introductory Finance: time value of money	3	2	1
Cash Flow Analysis	8	6	2
Investment evaluation methods: present worth, annual worth and internal rate of return	9	6	3
Depreciation models and asset replacement analysis	6	4	2
Bonds study	4	2	2
The impact of inflation, taxation, uncertainty and risk on investment decisions	6	4	2
Annual cost comparison of both equal- life and different- life alternatives.	3	2	1
Concepts of breakeven and maximum profits	6	4	2

Teaching And Learning Methodologies :

Interactive Lecture
Small Groups Discussion
Problem-based Learning
Report

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignments	5.00		
Final Exam	40.00		
Mid- Exam I	15.00		
Mid- Exam II	15.00		
Performance	5.00		
Quizzes	10.00		
Reports	10.00		

Course Notes :

No course notes are required

Recommended books :

1. William G. Sullivan, Elin M. Wicks C. Patrick, and Koelling, "Engineering Economy- Pearson, 17th edition, 2018.
2. Leland Blank and Anthony Tarquin, " Engineering Economy- McGraw-Hill Education, 8th edition, 2018.