Course Specification
(Bachelor)

Course Title:	Engineering Economy
Course Code:	INE 3240
Program:	Bachelor in Industrial Engineering
Department:	Industrial Engineering
College:	College of Engineering
Institution:	King Khalid University
Version:	Version 2
Last Revision Date:	11/12/2024

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (2)					
2. Course type					
A.	☐ University	√☐ College	☐ Department	☐ Track	☐ Others
B.	√☐ Required		☐ Elective		
3. Level/year at which this course is offered: (3th year 5th Level)					
4. Course General Description:					
Methods of economic analysis in engineering, including time value of money, equivalence, economic measures of worth, selection rules for alternatives, income taxes and equipment depreciation, inflation, and uncertainty.					
5. Pre-requirements for this course (if any)**:**					
NIL					
6. Co-requisites for this course (if any)**:**					
NIL					
7. Course Main Objective(s):					
1. Describe the basic concept of engineering economics **2. Recognize the cost concept used in cost terminology and economies of scale** **3. Estimate the time value of money** **4. Compare alternatives for decision making** **5. Calculate depreciation, trading accounts and general balance schedule, income statements and feasibility study.**					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	36	100%
2	E-learning		
3	Hybrid ● Traditional classroom ● E-learning	36	100%
4	Distance learning	0	0

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	36
2.	**0**	0
3.	**Field**	0
4.	**Tutorial**	0
5.	**Others (specify)**	0
Total		36

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Understand economic decision criteria, present value, IRR, benefit/cost ratio	K1	Lectures Discussion Tutorial sheets	Quiz Assignment Mid Exam Final Exam
1.2	Manipulate cash flow to obtain equivalent values	K3	Lectures Discussion Tutorial sheets	Quiz Assignment Mid Exam Final Exam
1.3	Form alternatives and derive cost/benefit estimates, Compare alternatives with unequal economic lives	K4	Lectures Discussion Tutorial sheets	Quiz Assignment Mid Exam Final Exam
2.0	**Skills**			

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
2.1	Perform after tax cash flow, apply depreciation accounting rules M	S4	Lectures Discussion Tutorial sheets	Quiz Assignment Mid Exam Final Exam
2.2	Reflect inflation and uncertainty in analysis.	S5	Lectures Discussion Tutorial sheets	Quiz Assignment Mid Exam Final Exam
3	**Values, autonomy, and responsibility**			
3.1	Develop depreciation plan for machine data using professional ethics and professional responsibility	V3	Lectures Discussion Tutorial sheets	Quiz Assignment Mid Exam Final Exam

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to Economy	4
2.	Basics in Engineering Economy	6
3.	Breakeven Analysis	6
4.	Cash flow and equivalence	6
5.	The Time Value for Money	8
6.	Depreciation	6
Total		**36**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	E-learning based activities (On-line Quizzes, Assignments)	Every Week	25%
2.	Mid Exam- I	6TH week	15%
3.	Mid Exam- II	11th week	15%

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
4.	Group Discussions / Attendance / Participation	All week	05%
5.	Final Exam	18th week	40%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Basics of Engineering Economy, Blank, Leland T. and Tarquin, Anthony J., 3rd Ed., McGraw-Hill, 2021 **ISBN10**: 1259875989 | **ISBN13:** 9781259875984.
Supportive References	Engineering Economy, William G. Sullivan. Elin M. Wicks and James Luxhoj,17th ed., Prentice Hall, 2019, ISBN 0134870069, 9780134870069
Electronic Materials	
Other Learning Materials	https://www.youtube.com/

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	• Lecture room • Backboard facility for sharing lecture notes, • Submission of assignments and attempting Quizzes. • Details of recommended group profiles in the teacher manual
Technology equipment (projector, smart board, software)	• Every student requires access to a personal computer and the Internet. • On-site University access is provided through the University Central Library.
Other equipment (depending on the nature of the specialty)	• Present Planned Resources takes care of the subject's needs.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	**Students**	**Course Evaluation Survey (CES**

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of Students assessment	**Students**	**Blackboard feedback**
Quality of learning resources	**Students**	**Course Evaluation Survey (CES)**
The extent to which CLOs have been achieved	**Course Evaluation Committee (CEC)**	**In-Situ Evaluation**
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Reviewed by Curriculum Committee Approved by Quality Committee
REFERENCE NO.	**9-6-47**
DATE	**25/06/1447**