

COURSE DESCRIPTIONS

Faculty	Engineering				
Department	Civil Engineering			NQF level	7
Course Title	Engineering Economy	Code	186105	Prerequisite	185104
Credit Hours	2	Theory	2	Practical	0
Course Leader	Dr. Faten Albtoush	email	f.albtoush @jadara.edu.jo		
Lecturers	Dr. Faten Albtoush	emails	f.albtoush @jadara.edu.jo		
Lecture time	[8:30 – 9:30] Tues & Thurs	Classroom	D302	Attendance	Fulltime
Semester	3 rd Semester	Production	10/2022	Updated	3/2024
Type of Teaching	<input type="checkbox"/> Face to Face <input checked="" type="checkbox"/> Blended <input type="checkbox"/> Online				

Short Description

This course introduces the concepts of time value of money, interest formulas, judging attractiveness of proposed investments using different methods, depreciation, inflation, increment cost and sunk cost.

Course Objectives

1. To make fundamentally strong base for decision making skills by applying the concepts of economics .
2. Educate the students on how to systematically evaluate the various cost elements of a typical manufactured product, an engineering project or service, with a view to determining the price offer .
3. Prepare engineering students to analyze profit/revenue data and carry out make economic analysis in the decision making process to justify or reject alternatives/projects.

Course Intended Learning Outcomes (CILOs)

A. Knowledge - Theoretical Understanding

- a1. Understand money, equivalence, depreciation, bonds.
- a2. Understanding of economic principles to prices and quantities in competitive supply and demand for goods and for money.

B. Knowledge - Practical Application

a3.

C. Skills - Generic Problem Solving and Analytical Skills

- b1. Analyze major principles of economic analysis for decision making.
- b2. Analyze cash flow diagrams and solve time-value questions: PW, AW, ROR, B/C, pay-back period, replacement, breakeven, depreciation, and taxes.

D. Skills - Communication, ICT, and Numeracy
E. Competence: Autonomy, Responsibility, and Context
Teaching and Learning Methods
<input checked="" type="checkbox"/> Face to Face Lectures <input type="checkbox"/> Brain Storming <input type="checkbox"/> Synchronous remote <input checked="" type="checkbox"/> Asynchronous remote <input checked="" type="checkbox"/> Using Video <input checked="" type="checkbox"/> Discussions <input type="checkbox"/> Research Project <input type="checkbox"/> Case Study <input type="checkbox"/> Field visit <input checked="" type="checkbox"/> Problem solving
Assessment Methods
<input type="checkbox"/> Formative Assessment <input checked="" type="checkbox"/> Quiz <input type="checkbox"/> Lab Exam <input checked="" type="checkbox"/> Homework <input type="checkbox"/> Project Assessment <input type="checkbox"/> Oral Presentation <input checked="" type="checkbox"/> Midterm <input checked="" type="checkbox"/> Final Exam

Course Contents					
Week	Hours	CILOs	Topics	Teaching & Learning Methods	Assessment Methods
1.	2	a1	CHAPTER 1: Introduction to Engineering Economy	Face to Face Lectures, Asynchronous remote & Using Video	Homework
2.	2	a1	CHAPTER 2: Cost Concepts and Design Economics	Face to Face Lectures, Asynchronous remote & Using Video	Homework
3.	2	a1	CHAPTER 2: Cost Concepts and Design Economics	Face to Face Lectures, Asynchronous remote & Using Video	Quiz
4.	2	a2	CHAPTER 4: The Time Value of Money	Face to Face Lectures, Asynchronous remote	Homework
5.	2	a2	CHAPTER 4: The Time Value of Money	Face to Face Lectures, Asynchronous remote	Quiz
6.	2	b1	CHAPTER 4: The Time Value of Money	Face to Face Lectures, Asynchronous remote	Homework
7.	Midterm Exam 30%				
8.	2	b1	CHAPTER 4: The Time Value of Money	Face to Face Lectures, Asynchronous remote	Homework
9.	2	b1	CHAPTER 4: The Time Value of Money	Face to Face Lectures, Asynchronous remote	Quiz
10.	2	b1	CHAPTER 5: Evaluating a Single Project	Face to Face Lectures, Asynchronous remote	Homework

11.	2	b1	CHAPTER 5: Evaluating a Single Project	Face to Face Lectures, Asynchronous remote	Homework	
12.	2	b1 & b2	CHAPTER 5: Evaluating a Single Project	Face to Face Lectures, Asynchronous remote	Quiz	
13.	2	b1 & b2	CHAPTER 6: Comparison and Selection among Alternatives	Face to Face Lectures, Asynchronous remote	Homework	
14.	2	b1 & b2	CHAPTER 6: Comparison and Selection among Alternatives	Face to Face Lectures, Asynchronous remote		
15.	2		REVISION	Face to Face Lectures, Asynchronous remote		
16.	2	Final Exam 40%				

Infrastructure	
Textbook	W. G. Sullivan, E. M. Wicks, and C. Patrick Koelling, "Engineering Economy", 16th edition, Prentice Hall, 2009.a.
References	Newman, Donald G., Eschenbach, Ted G., and Lavelle, Jerome P. (2012). Engineering Economic Analysis. New York: Oxford University Press.
Required reading	
Electronic materials	Handouts & lecture links loaded on e-learning system.
Other	Jadara e-learning system.

Course Assessment Plan						
Assessment Method		Grade	CILOs			
			a1	a2	b1	b2
First (Midterm)		30	6	6	18	
Second (if applicable)						
Final Exam		40	4	5	15	16
Coursework						
Coursework assessment methods	Assignments	30		5	5	5
	Case study					
	Discussion and interaction				5	
	Group work activities					5
	Lab tests and assignments					
	Presentations					

	Quizzes					5
Total		100	10	16	43	31

Plagiarism

Plagiarism is claiming that someone else's work is your own. The department has a strict policy regarding plagiarism and, if plagiarism is indeed discovered, this policy will be applied. Note that punishments apply also to anyone assisting another to commit plagiarism (for example by knowingly allowing someone to copy your code). Plagiarism is different from group work in which a number of individuals share ideas on how to carry out the coursework. You are strongly encouraged to work in small groups, and you will certainly not be penalized for doing so. This means that you may work together on the program. What is important is that you have a full understanding of all aspects of the completed program. In order to allow proper assessment that this is indeed the case, you must adhere strictly to the course work requirements as outlined above and detailed in the coursework problem description. These requirements are in place to encourage individual understanding, facilitate individual assessment, and deter plagiarism.