GAU, Faculty of Engineering

Course Unit Title	Engineering Economy
Course Unit Code	ENG304
Type of Course Unit	Compulsory, All engineering students
Level of Course Unit	3rd Year BSc
National Credits	3
Number of ECTS Credits Allocated	5 ECTS
Theoretical (hour/week)	3
Practice (hour/week)	-
Laboratory (hour/week)	-
Year of Study	3
Semester when the course unit is delivered	6
Mode of Delivery	Face to Face
Language of Instruction	English
Prerequisities and co-requisities	-
Recommended Optional Programme Components	-

Objectives of the Course:

- Present and Future Value of Money
- Compound Interest Formulas
- Present Worth Methods and Rate of Return Analysis
- Evaluation of Alternative Investment Projects

Learning Outcomes

When this course has been completed the student should be able to		Assesment.
1	Explain the difference between Simple and Compound Interest	1
2	Derive the formulas for the Compound Interest Calculations	1
3	Use the Basic Concepts Of Engineering Economy	1
4	Solve Engineering Economy Problems	1,2
5	Evaluate the Alternative Investment Projects	1,2

Assesment Methods: 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5 Lab. Work

Course's Contribution to Program

		CL
1	Ability to understand and apply knowledge of mathematics, science, and engineering	4
2	Ability to design and conduct experiments as well as to analyze and interpret data	1
3	Ability to work in multidisciplinary teams while exhibiting professional responsibility and ethical conduct	1
4	Ability to apply systems thinking in problem solving and system design	2
5	Knowledge of contemporary issues while continuing to engage in lifelong learning	3
6	Ability to use the techniques, skills and modern engineering tools necessary for engineering practice	4
7	Ability to express their ideas and findings, in written and oral form	3
8	Ability to design and integrate systems, components or processes to meet desired needs within realistic constraints	1
9	Ability to approach engineering problems and effects of their possible solutions within a well structured, ethically responsible and professional manner	4

CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate 4: High, 5:Very High)

Course Contents

Week			Exams
1	Chapter 1	Foundations of Engineering Economy	
2	Chapter 2	Single-Payment Factors and Uniform-Series Present worth Factor	
3		Uniform Series Compound Amount Factor and Sinking Fund Factor	
4		Arithmetic Gradient Factors	
5		Geometric Gradient Factors	
6	Chapter 3	Combining Factors	Quiz1
7	Chapter 4	Nominal and Effective Interest Rates, Effective Annual Interest Rates	
8			Midterm
9		Effective Interest Rates for any Time Period and Continuous Comp.	
10	Chapter 5	Present Worth Analysis of Equal-Life Alternatives	HW
11		Present Worth Analysis of Different-Life Alternatives,Capitalized Cost	
12	Chapter 7	Rate of Return Analysis – Single Alternative	
13	Chapter 8	Rate of Return Analysis- Multiple alternatives	HW
14		"	Quiz2
15			Final

Recommended Sources

Textbook: Engineering Economy, Leland Blank and Anthony Tarquin, McGraw-Hill Company, (6th Edition 2008) (Other editions are also useful)

Supplementary Material (s): 2) Engineering Economic Principles, H.M.Steiner, Mc Graw Hill Company,1992

Assessment

Attendance	5%	
Assignment	10%	
Midterm Exam (Written)	30%	
Quiz (Written)	15%	
Final Exam (Written)	40%	
Total	100%	

ECTS Allocated Based on the Student Workload

Activities	Number	Duration (hour)	Total Workload(hour)
Course duration in class (including the Exam week)	15	3	45
Labs and Tutorials	-	-	-
Assignments	2	8	16
Project/Presentation/Report Writing	-	-	-
E-learning Activities	-	-	-
Quizzes	2	8	16
Midterm Examination	1	15	15
Final Examination	1	16	16
Self Study	14	3	42
Total Workload			150
Total Workload/30 (h)			5
ECTS Credit of the Course			5