Syllabus
Engineering Economy Course

Course No.:	12340412
Semester:	Summer, 2023/2024
Instructor:	Dr. Jamil Hamadneh
Instructor's email:	Jamil.hamadneh@ptuk.edu.ps
Class time:	Class 1: Sunday, Monday and Tuesday, 10:00 AM – 12:00 PM Class 2: Sunday, Monday and Tuesday. 12:00 PM – 02:00 PM
Classroom:	Class 1: H215 Class 2: H017
Textbooks:	Engineering Economy, 7th edition. Leland Blank, P. E., Anthony Tarquin, P. E.
Other References:	Lecture notes
Course objectives:	• Define engineering economics and describe its role in decision making. • Understand and identify the steps in an engineering economy study. • Identify areas in which economic decisions can present questionable ethics. • Perform calculations for interest rates and rates of return. • Identify and use engineering economic terminology and symbols. • Understand cash flows and how to graphically represent them. • Calculate simple and compound interest amounts for one or more time periods. • State the meaning and role of Minimum Attractive Rate of Return (MARR) and opportunity costs. • Derive and use the engineering economy factors to account for the time value of money. • Make computations for interest rates and cash flows that are on a time basis other than a year. • Utilize different present worth techniques to evaluate and select alternatives. • Utilize different annual worth techniques to evaluate and select alternatives. • Understand the meaning of rate of return and perform an ROR evaluation of a single project. • Select the best alternative on the basis of incremental rate of return analysis. • Understand public sector projects and select the best alternative on the basis of incremental benefit /cost analysis.
Exams:	Midterm exam: 35% by the end of **5th** week Quizzes and homework: 20%, Final exam: 45% by the end of **8th** week

Course outline
Chapter 1: Foundations of Engineering Economy
Basic Concepts and Definitions, Examples and Additional Concepts, Cash Flow Diagram
Chapter 2: Factors: How Time and Interest Affect Money
Single Cash Flow, Uniform Series, Arithmetic Gradian Series, Geometric Gradient Series
Chapter 4: Combining Factors
Chapter 5: Present Worth Analysis
Chapter 6: Annual Worth Analysis
Chapter 7: Rate of Return Analysis: One Project
Chapter 8: Rate of Return Analysis: Multiple Alternatives
Chapter 9: Benefit /Cost Analysis and Public Sector Economics

Chapter 10: Multiple Attribute Analysis