

Course:	Engineering Economy and Management – 403373 (3 Cr. – Core Course)
Catalog Data:	Major elements of feasibility studies. Principles of engineering Economy. Equivalence and compound interest formula. Single payment model. Uniform payment model. Gradient payment model. Exponential payment model. Decision criteria for single and multiple alternatives: Present worth, annual worth, future worth, and internal rate of return, benefit cost ratio, and payback methods.
Prerequisites by Course:	1103101 ,Calculus (1)
Prerequisites by Topic:	Students are assumed to have sufficient knowledge to the functions, models and derivations.
Textbook:	SULLIVAN, William G.; WICKS, Elin M.; KOELLING, C. Patrick. <i>Engineering economy</i> . Seventeenth Edition. Prentice Hall, 2019.
References:	<ol style="list-style-type: none">1. Lecture notes2. Engineering Project Management 2nd Edition by N. Smith. Blackwell Science, 2002.
Course Website:	https://elearn.iu.edu.jo/course/view.php?id=2111#section-0
Schedule & Duration:	16 week, 48 Lectures, 50 minutes (including exams)
Minimum Student Material:	Textbook, some instructor notes.
Minimum College Facilities:	Classroom whiteboard and projection display facilities.
Course Objectives:	<ol style="list-style-type: none">1. Apply the basic concepts of engineering economy as part of a decision-making process.2. Derive and use different engineering economy factors.3. Evaluate investment opportunities and compare alternatives using single and combined engineering economy factors.4. Perform breakeven analysis and sensitivity analysis under uncertainty conditions.
Course Outcomes and Relation to ABET Program Outcomes:	<ol style="list-style-type: none">1. Know the course overview and the role of engineering economic analysis (1+7).2. Compute cash flows, simple interest, equivalence, single payment compound interest (1+2+6).3. Calculate uniform series compound interest formulas (1+2+6).4. Learn other analysis techniques such as future worth analysis, benefit-cost ratio analysis, payback period, sensitivity and break-even period (1+6+7).5. Analyze multiple alternatives using the incremental rate of return analysis (1+4+7).6. Learn the application of present worth techniques based on given economic criteria (1+2+4+7).7. Calculate the equivalent amount using arithmetic and geometric gradient (1+2+4).

Course Topics:

1. Introduction to Management
2. Introduction to engineering economics
3. Cost Concepts and Design Economic
4. The Time Value of Money
5. Interest and Equivalence
6. More Interest Formulas
7. Present Worth Analysis
8. Annual Cash Flow Analysis
9. Rate of Return Analysis
10. Incremental Analysis
11. Evaluating a Single project
12. Comparison and Selection among Alternatives

Computer Usage:

Microsoft Excel.

Attendance:

Class attendance will be taken every class and the University's policies will be enforced in this regard.

Assessments:

Mid-Term, Attendance, HWs and short quizzes, and Final Exams.

Grading policy:

Mid-Term: 35%

Attendance and short quizzes: 15%

Final: 50%

Total: 100%

Instructors:

Dr. Moawiah A. Alnsour

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Office #:

Class Time and Location:

STT: (10:00-11:00 AM) Section-01

Program Outcomes (PO)

1	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2	An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3	An ability to communicate effectively with a range of audiences
4	An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5	An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6	An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Last Updated:

24 October 2022