

SYLLABUS

ISE 307 - ENGINEERING ECONOMIC ANALYSIS

Instructor: Dr. Aiman El-Maleh

Office Location: Building 22 Room 407-5; Phone 860 – 2218; E-mail: aimane@kfupm.edu.sa

Office Hours: UMTW 12:20 – 1:00 pm OR by an appointment.

Text: Park, Chan S., **Fundamentals of Engineering Economics**, 3rdEd., Prentice Hall (2013)

Objectives:

- This course is about making decisions. The purpose of this course is to develop tools and properly analyze and solve the economic problems that are commonly faced by engineers.
- Through using the basic principles, concepts, and methodology of engineering economics also addresses the practical concerns of engineers.
- To satisfy the very practical needs of the engineer toward making informed financial decisions when acting as a team member or project manager for engineering projects.
- To incorporate all critical decision-making tools needed for precise presentation of the effect of the time value of money on engineering decision making.
- The tools include **present worth analysis, annual cash flow, rate of return, incremental analysis, future worth analysis, and payback period**. The course also covers such topics as **depreciation, replacement analysis, inflation, and deflation**.

- Learning Outcomes**
1. Evaluate the economic feasibility of investments related to engineering projects. (b, e, k)
 2. Assess the impact of depreciation, taxation and other economic factors on projects' feasibility. (a)
 3. Conduct sensitivity analysis on key compounding parameters. (a, k)
 4. Develop policies for assets replacement. (a)
 5. Assess alternative financing modes. (a)
 6. Make financially prudent decisions in everyday life (car/home loans or investments). (e, h)

Topics of the course:

Chapter 1	Engineering Economic Decisions	(Ch1~1 Lecture)
Chapter 2	Time Value of Money	(Ch2~4 Lectures)
Chapter 3	<u>Understanding Money Management</u>	<u>(Ch3~2 Lectures) -----EXAM I</u>
Chapter 4	Equivalence Calculations under Inflation	(Ch4~2 Lectures)
Chapter 5	Present-Worth Analysis	(Ch5~3 Lectures)
Chapter 6	Annual Equivalence Analysis	(Ch6~3 Lectures)
Chapter 7	<u>Rate of Return Analysis</u>	<u>(Ch7~2 Lectures) ----- EXAM II</u>
Chapter 9	Depreciation and Income Taxes	(Ch9~3 Lectures)
Chapter 11	Handling Project Uncertainty (Sections 11.1 &11.2)	(Ch11~3 Lectures)
Chapter 12	Replacement Decisions (Sections 12.1 - 12.3)	(Ch12~4 Lectures) ----- FINAL
Quizzes + Review		3 Lectures

Attendance:

- Attendance is compulsory. Justified absences should be discussed with the instructor preferably before the fact.
- KFUPM rules will be strictly applied that is more than 20% of the excused and unexcused scheduled lecture absences will be treated as DN grade.
- In the case of missing any exam or quiz, there will be no make-up for it.

Grading:

Discussions	(4%)
Quizzes	(16%)
Major Exam I	(25 %) Sunday, July 8, 2018 @ 7:45 PM
Major Exam II	(25 %) Sunday, July 29, 2018 @ 7:45 PM
Final Exam	(30 %) Wednesday, August 15, 2018 @ 12:30 PM (By the Registrar)
Total	(100 %)