GE 403

ENGINEERING ECONOMY

King Saud University · College of Engineering · Civil Engineering Dept.

1st Semester 1448 / 2026
Credit Hours: **2**

It's my pleasure to have you in the Engineering Economy class! In this course, we will discuss and learn the Systematic Economic Analysis Technique. In particular, we will learn Cost Concepts, Time Value of Money Operations, Measuring the Worth of Investments, Comparison of Alternatives, Depreciation, and Economic s

INSTRUCTOR

Name	**Dr. Mohammed Almannaa**
Office	2A70, Civil Engineering Department
E-mail	malmannaa@ksu.edu.sa
Tel	0118063197 *(WhatsApp available)*
Office Hours	Sun 11 AM–3 PM · Tue 11 AM–12 PM · Thu 8–9 AM & 10 AM–2 PM *(by appointment only)*
Website	https://fac.ksu.edu.sa/malmannaa

TEACHING ASSISTANT

Name	**Eng. Howaidi Alotaibi**
Office	2A91, Civil Engineering Department
E-mail	halshaibani@ksu.edu.sa

PREREQUISITE

None.

COURSE OBJECTIVES

By the end of this course, the student will be able to:

1. Prepare economic justifications for engineering proposals.
2. Manage personal finances and make wise investment decisions.
3. Evaluate economic justifications performed by others.
4. Be comfortable using financial language.
5. Recognize the time value of money and its operations.
6. Measure and determine depreciation and replacement.
7. Compare the economics of different projects in public and regulatory sectors.
8. Recognize the cost concepts and the cost terminology.

COURSE GRADING

The final grade for the class will be determined as follows:

Item	Grade (%)
Tutorials — weekly quiz and/or HW	**10**
Exam 1 *Monday, October 5, 2026 · Rabi' al-Akhir 24, 1448 (Week 7) · after Maghrib, 6:15 PM*	**25**
Exam 2 *Monday, November 9, 2026 · Jumada al-Ula 29, 1448 (Week 12) · after Maghrib, 5:45 PM*	**25**
Final Exam	**40**

Notes:

- Your grades will be uploaded to the LMS once they are available.
- Students with full attendance will get a bonus.

COURSE WEB PAGE

The University's LMS (lms.ksu.edu.sa) will be used to distribute class materials: previously recorded lectures, grades, lecture notes, and course announcements.

TEXTBOOK

Title of the Book	Author(s)	Publisher	Edition
Principles of Engineering Economic Analysis	White, Case & Pratt	WILEY	**5th or newer**

Notes:

1. It can be found at the university's Book Center (here).
2. Obtain the "interest tables" from the college's Copy Center, or print them from the course page on the LMS.

COURSE SYLLABUS

Week	Ch.	Topics	Problems
1–2	**1**	***Introduction to Engineering Economic Analysis:*** Principles of Engineering Economic Analysis, Economic Analysis Techniques. **Sections 1-2 → 1-4**	8, 9, 10
2–5	**2**	***Time Value of Money:*** Cash Flow Diagrams, Simple & Compound Interest, Multiple Compounding Periods, Continuous Compound Interest. **Sections 2-1 → 2-6, 2-A**	6, 8, 9, 13, 15, 16, 24, 32, 56, 90, 98, 130, 156, 164, 172
6	**3**	***Equivalence and Indifference*** **Sections 3-7, 3-9**	40, 41, 42, 43, 44, 45, 58, 60
7	**4**	***Comparison of Alternatives:*** Choosing Planning Horizons. **Sections 4-1, 4-2**	4, 5, 6
8–11	**5 – 8**	Measure of Worth ***Present Worth Analysis:*** Single / Multiple Alternatives, One-shot Investment.	CH5: 9, 10, 12, 13, 25, 27, 61, 62, 65, 66, 72, 74

Week	Ch.	Topics	Problems
		Sections 5-3, 5-4, 5-5 ***Payback Period:*** Single / Multiple Alternatives. **Section 5-6** ***Capitalized Worth:*** Single / Multiple Alternatives. **Sections 5-8, 5-9** ***Future Worth Analysis:*** Single / Multiple Alternatives, One-shot Investments. **Sections 6-2, 6-3, 6-5** ***Annual Worth Analysis:*** Single / Multiple Alternatives, Least Common Multiple of Lives. **Sections 7-2, 7-3, 7-4** ***Capital Recovery Cost.*** **Section 7-6** ***Internal Rate of Return:*** Single / Multiple Alternatives. **Sections 8-2, 8-3** ***External Rate of Return:*** Single / Multiple Alternatives. **Sections 8-4, 8-5** ***Analysing Alternatives with No Positive Cash Flow.*** **Section 8-6**	CH6: 4, 7, 9, 18, 31, 32, 36, 67, 68 CH7: 4, 5, 8, 23, 24, 25, 28, 51, 53, 60, 61, 63 CH8: 3, 5, 8, 15, 34, 51, 53, 54, 65, 68, 70
12	**9**	***Depreciation*** **Sections 9-1, 9-3, 9-4, 9-5, 9-A**	9, 10, 11, 12, 13, 14
13	**11**	***Replacement Analysis*** **Sections 11-1, 11-2, 11-2-1, 11-3, 11-3-1**	4, 5, 7
14	**14**	***Economic Analysis of Public Projects*** **Sections 14-1 → 14-8**	6, 8, 9, 13, 15
15	**16**	***Cost Terminology:*** Life-Cycle, Past/Future, Manufacturing Cost Structure, Fixed/Variable and Average/Marginal Viewpoints. **Section 16-2**	3, 4, 6, 10, 12

MID-TERM EXAM DATES

Exam 1 Mon, Oct 5, 2026 (Week 7) · 6:15 PM	**Exam 2** Mon, Nov 9, 2026 (Week 12) · 5:45 PM

ATTENDANCE POLICY

Attendance is recorded electronically in every class via **Edugate**, from the first week until the last day of the semester. Arriving late (+5 min) counts as half attendance; more than 15 minutes late is marked as **absent**.

The absence percentage (lectures and tutorials) is reported electronically to the Vice Dean as recorded. *Please do not send excuses to the instructor's email.*

EXAM ABSENCE

If you miss an exam, you must:

- Submit an accepted excuse to the instructor within **one week** of the absence date.

TUTORIALS

Please contact your TA for more details.