IE 1040 – Engineering Economic Analysis

Fall 2025

Course Syllabus

(Version: Sep 9, Subject to change)

Instructor

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Office: SCUPI Building N403
Office Hours: Wednesday, 12:30 to 15:20

Teaching Assistant

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Lectures

Wednesdays, 08:15 to 11:00, SCUPI Building S204

Course Description

This course considers the broad question of how to make good economic decisions in an engineering context. Money is used as a representation of any set of resources that may come into play in engineering a system. We will discuss the basics of decision-making from an economic point of view, learn a number of terms and common formulae, and practice several types of calculations used in engineering economic analysis.

Course Prerequisites

IE junior status or instructor's permission.

Course Objectives

1. An ability to apply knowledge of mathematics, science, and engineering.
2. An ability to identify, formulate and solve engineering problems.
3. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
4. A knowledge of contemporary issues.

Applicable ABET Outcomes

Upon successful completion of this course, students should be able to:

1. describe the economic concepts of supply, demand, and production
2. conduct simple cost-benefit analysis and break-even analysis
3. describe return on investment and the time value of money
4. have the skills necessary to manage money
5. understand and apply the accounting for risk as applied to the engineering process

Textbook

Newman, Eschenbach, and Lavelle, Engineering Economic Analysis, 13th Edition, Oxford University Press, 2017, ISBN-13: 978-0190296902.

Grading

Attendance, Participation in Classroom Discussions/Exercises: 10%
Assignments: 20%
Project: 20%
Mid-term Examination: 20%
Final Examination: 30%

Score	Letter Grade
90.00-100.00	A
85.00-89.99	A-
80.00-84.99	B+
76.00-79.99	B
73.00-75.99	B-
70.00-72.99	C+
66.00-69.99	C
63.00-65.99	C-
61.00-62.99	D+
60.00-60.99	D
0.00-59.99	F

Exams

The exams are CLOSED BOOK, CLOSED NOTES, and CLOSED COMPUTER.

Assignments and Quizzes

Homework will be assigned weekly and needed to be finished before the next class. Homework solutions must be submitted to the Blackboard system.

Group Project

Group project will be described in separate handouts as they are assigned.

Participation

Regular attendance as well as active classroom participation is expected. Any required student absences should be reported to the instructor in advance via email or if not possible in advance, shortly thereafter.

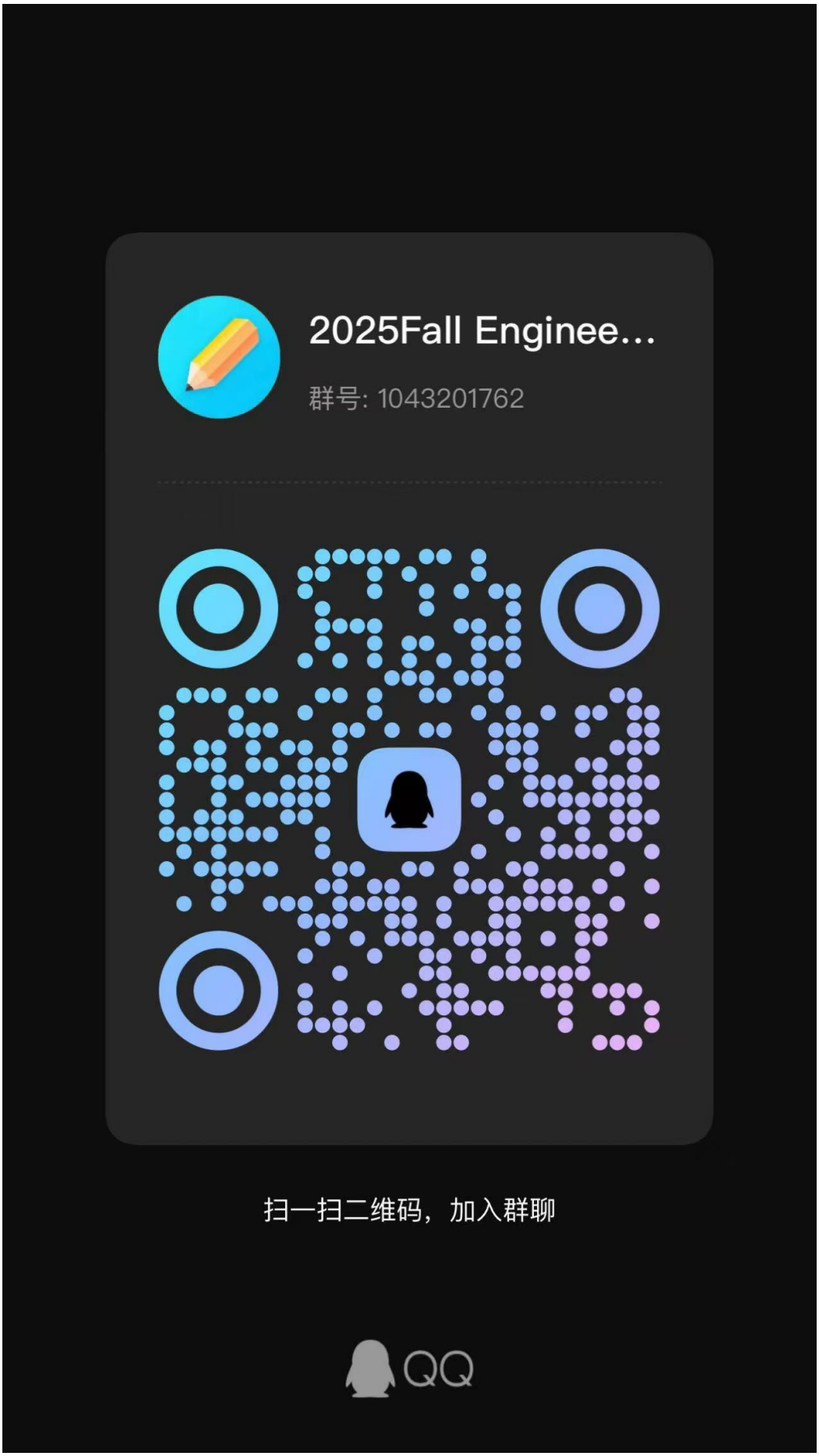
Avoiding Plagiarism

1. Unacknowledged direct copying from the work of another person, or the close paraphrasing of somebody else's work, is called plagiarism and is a serious offence, equated with cheating in examinations. This applies to copying both from other students' work and from published sources such as books, reports or journal articles.

2. Paraphrasing, when the original statement is still identifiable and has no acknowledgement, is plagiarism. A close paraphrase of another person's work must have an acknowledgement to the source. It is not acceptable for you to put together unacknowledged passages from the same or from different sources linking these together with a few words or sentences of your own and changing a few words from the original text: this is regarded as over-dependence on other sources, which is a form of plagiarism.

Tentative Course Schedule

Lecture	Dates	Topics	Chapter
1	Sep 10	Introduction and Economic Decisions	1
2	Sep17	Costs and Benefits	2
3	Sep 24	Interests and Equivalence	3
4	Sep 28	Equivalence for Repeated Cash Flows	4
5	Oct 15	Present Worth Analysis	5
6	Oct 22	Annual Cash Flow Analysis	6
	Oct 29	Mid-term Exam	
7	Nov5	Rate of Return Analysis	7
8	Nov 12	Choosing the Best Alternative / Project Proposal Review	8
9	Nov 19	Other Analysis Techniques	9
10	Nov 26	Uncertainty in Future Events	10
11	Dec 3	Depreciation	11
12	Dec 10	Replacement Analysis,	12
13	Dec 17	Inflation and Price Change	13
14	Dec 24	Group Presentation / Project Report Submission	14
15	Dec 31	Final Exam	


2025Fall Enginee...
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