

Engineering Economic Analysis

General Information:

Course ID#: IE1040

Credit hours: 3

Time: W 13:50 – 16:25

Office hours: T 13:00 – 16:00, F 13:00 – 16:00 and by appointment

Office location: N404

Email: lizyunli@scai-ji.cn

TA: Siyu Leng

Course Website on blackboard: <https://pibb.scu.edu.cn/>

Course QQ: See code picture on the last page

Course Description:

This course offers comprehensive coverage of financial and economic decision making for engineers, topics discussed including cost estimation, time value of money, interest rate calculations, economic equivalence concepts, comparison of alternative investments, evaluating replacement alternatives, depreciation, the impact of taxes on engineering economic decisions, inflation, and dealing with uncertainty.

Course Prerequisites:

IE junior status or instructor's permission.

Excel: It is assumed that all students in the course have at least a basic understanding of how to use Excel for spreadsheets.

Course Objectives:

- To provide an understanding of why economic analysis is a core competency for any engineer in a decision-making role.
- To teach the fundamental concepts and techniques used in engineering economic analysis.
- To provide an understanding of the use of economic analysis in contemporary problems.
- To familiarize students with the use of spreadsheets for economic analysis.

Applicable ABET Outcomes:

- (a) An ability to apply knowledge of mathematics, science and engineering
- (e) An ability to identify, formulate and solve engineering problems
- (f) An understanding of professional and ethical responsibility
- (h) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context.
- (j) A knowledge of contemporary issues.

Required Texts:

Newnan, Donald G; Eschenbach, Ted G; and Lavelle, Jerome P; Engineering Economic Analysis, 13th Edition, Oxford University Press, 2017.

Course Website:

We'll use blackboard to make announcements, distribute lecture notes, homework problems, etc. Make sure to check the course page on blackboard frequently to stay updated.

Course QQ group

We'll also have a course QQ group managed by the TA, Siyu Leng. That'll be another place where we may make announcements, or you could ask questions and have discussions. Instead of holding office hours in a physical location, the TA will be available to answer course-related questions through QQ.

*****Course materials are for your personal usage only, do not post online or share with people outside of the class. *****

Course Requirements:

- We'll do a lot of hand-on problem solving in class. We have 30 computers in the lab, students need to share the lab computers or bring your own computer to class.
- We'll have studio work and quizzes where your attendance and participation are important. No makeup quiz or studio work will be given. If you have a legitimate reason to miss a class, make sure to email me and cc your class counselor beforehand.
- Check blackboard for lecture notes, homework/studio questions, announcements and other handouts.
- Be focused and actively participate in class discussion and studio work.
- Review after class, work on practice problems, raise questions if any
- Be on time, and keep your cell phones off during class time
- **Uphold Academic Honesty:** cheating in a quiz or an assignment will result in a 0 for it. Cheating in an exam will result in an F for the course.

Code of Academic Conduct:

Uphold Academic Honesty: cheating in an assignment/presentation will result in a 0 for it. Cheating in an exam will result in an F for the course.

Exams:

One Midterm and one Final, noncumulative. The exams will be on lab computers, semi-open book.

Homework

Practice questions will be assigned for each chapter and we'll usually do studio work on them in class when time allows. For what we can't finish in class, you're expected to finish working on them before next week's class. Homework will not be collected, instead we'll use studio work and/or quizzes to make sure that you have done your homework and mastered the materials in time.

Studio work:

We'll do studio work in class. Being in class doing the studio work will earn you up to 16 points toward your final score.

Illustration of Solutions to class during Studio work:

During the studio work, students will be randomly assigned to come up to the podium and use the desk computer to illustrate how to solve a problem to the class. After illustration, the student should be available to help other students in class if anyone still need help about that question. Make sure to bring a U-drive to class so you don't need to re-do the work on the teacher's computer. Each student will have multiple chances to do illustrations in class, your effort will earn up to 8% toward your final score.

Pop Quizzes:

We'll do pop quizzes in class. These are treated similarly as studio work, but usually cover questions from multiple chapters, and each has more weight in grading.

Grading:

- Attendance and Participation in Studio work: 16%
- Illustration of Solutions to class during Studio work: 8%
- Pop Quizzes: 10%
- Midterm Exam: 33%
- Final Exam: 33%

Grading Conversion Table

Level	Letter Grade	Reported Numerical Score	Grade Points
Superior Performance	A	90 - 100	4.0
	A-	85 - 89	3.7
Meritorious Performance	B+	80 - 84	3.3
	B	76 - 79	3.0
	B-	73 - 75	2.7
Adequate Performance	C+	70 - 72	2.3
	C	66 - 69	2.0
	C-	63 - 65	1.7
Minimal Performance	D+	61 - 62	1.3
	D	60	1.0
Insufficient Performance (Failure)	F	< 60	0.0

Tentative Course Schedule:

Week One (9/2)

Chapter 1 Making Economic Decisions

Chapter 2 Estimating Engineering Costs and Benefits

Week Two (9/9)

Chapter 2 Estimating Engineering Costs and Benefits

Week Three (9/16)

Chapter 3 Interest and Equivalence

Week Four (9/23)

Chapter 4 Equivalence for Repeated Cash Flows

Week Five (9/30)

Chapter 5 Present Worth Analysis

Week Six (10/7) (Time may change due to National Day Holiday)

Chapter 6 Annual Cash Flow Analysis

Week Seven (10/14)

Chapter 7 Rate of Return Analysis

Week Eight (10/21)

Chapter 8 Choosing the Best Alternative

Week Nine (or Week 10) (Exam time to be announced)

Chapter 9 Other Analysis Techniques

Week Ten (11/4)

Midterm Exam 11/4 14:00 – 16:00

Week Eleven (11/11)

Chapter 10 Uncertainty in Future Events

Week Twelve (11/18)

Chapter 11 Depreciation and Capital Allowances

Week Thirteen (11/25)

Chapter 12 Taxes

Week Fourteen (12/2)

Chapter 13 Replacement Analysis

Week Fifteen (12/9)

Chapter 14 Inflation and Price Change

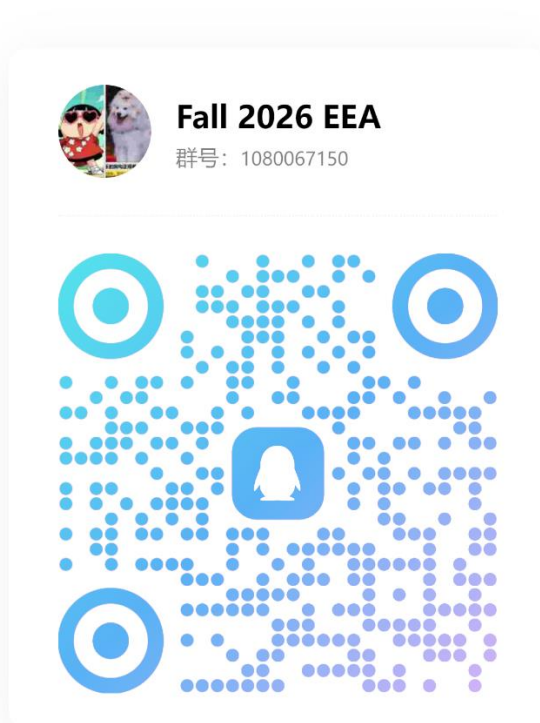
Week Sixteen (12/16)

Chapter 17 Accounting and Engineering Economy

Week Seventeen (12/23)
Review and Catchup

Week Eighteen (12/30)
Final Exam 12/30 14:00 – 16:00

Course QQ Group



扫一扫二维码，入群聊



SCU Academic Calendar

四川大学

2026—2027 学年（秋季学期）校历

周 次		星 期							月份	备 注
		日	一	二	三	四	五	六		
						27	28	29	8 月	1. 8 月 27-28 日为在校 生报到时间。
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