

ISEN 302 -502
ECONOMIC ANALYSIS OF ENGINEERING PROJECTS
Spring 2010

Instructor: Hyunsoo Lee Office: 340B Zachry
Office Hours: M 9:00 - 10:00 AM or by appointment
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Phone: 575-0456
Class Time: MW 8:00 – 8:50 AM (Section 502) Classroom: Zachry 203
Website: <http://ise.tamu.edu/isen302/502/>

TA: Yaping Wang Office: Zachry 302C
Office Hours: MW 4:00 – 5:0 PM (Jan 19th ~March 13th)
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TA: Chitra Balasubramaniam Office: Zachry 303M
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Course Description

Principles of economic equivalence; time value of money; analysis of single and multiple investments; comparison of alternatives and capital recovery. Prerequisite: MATH 152.
ISEN 302 will provide you with the foundation you need to perform financial analyses in both your engineering job and personal life.

Text

Basics of Engineering Economy; Leland Blank and Anthony Tarquin; McGraw-Hill, 2008;
ISBN 978-0-07-340129-4.

Note: All students must have a legal version of the textbook and bring to class each and every class session as directed.

Topics covered

Interest factors, time value of money, cash flow diagrams, nominal and effective interest, present worth, future worth, annual worth, internal rate of return, benefit/cost analysis, effects of inflations, and depreciation methods. Where applicable, spreadsheet models will be introduced to assist in problem evaluation.

Examinations and Other Graded Assignments

Two 50 minute in class exams

One two hour final exam at the university mandated time and place

Assigned homework (taken up and evaluated)

Short, unannounced reading examinations spaced throughout the semester

Grade Determination

Exam 1	20%	
Exam 2	20%	
Final Exam	30%	: May 7, Friday, 10:00-12:00, Zachry 301
Homework	20%	
Reading Exams	10%	

The university letter grade policy is followed (90% or greater: A; 80-89%:B; 70 – 79%: C; 60 – 69% D; below 60% F).

Class Policies

- *Course calendar*

Class will meet every Monday and Wednesday from 8:00 AM - 8:50 AM, except for University Holidays. We will conform to the University Academic Calendar (<http://admissions.tamu.edu/Registrar/General/Calendar.aspx>). If a class needs to be canceled for any other reason, you will be notified at least 1 week in advance.

- *Handout*

All handouts and lecture notes will be posted in the course website (<http://ise.tamu.edu/isen302/502/>)

- *Homework*

There will be a weekly homework assignment, which will be announced on Wednesday and will be due at that *start of class* (8:00 AM) the following Wednesday. Everyone must individually turn-in their homework. I do not mind if you study with a few friends. However, please ensure that final product is your own. I expect everyone to follow the Aggie Honor Code. Homework will be accepted up to 72 hours late (not including weekends or University holidays). However, 20% will be deducted for late homework regardless of delayed day. Late homework must be turned in to the teaching assistant, unless you turn it in at the start of class on Wednesday. It is your responsibility to contact the teaching assistant and make arrangements. The teaching assistant will accept your homework at his/her convenience.

- *Quizzes*

There will be unnoticed in-class quizzes. You may use a calculator on the quizzes. You must take the quiz individually. You need to show how you get the answer, write the answer clearly, and turn it in when the allowed time expires. Late quiz will not be accepted unless you give advance notice of any absences.

- *Examinations*

Exams will cover material from the textbook and lecture. Exams will be closed. No make-up examinations will be given unless a written authorized excuse is provided and prior arrangements have been made with the instructor. No disagreement on a score received on any graded material will be entertained a week after the date it was returned.

Class Attendance:

Class attendance is not optional. You are expected to attend all class lectures except for university excused absences. It is also important that you arrive on time. You are responsible for any material covered, announcements made and any homework assigned during each class period even if you have an excused absence from that class.

Academic Integrity(Aggie Honor Code)

"An Aggie does not lie, cheat, or steal or tolerate those who do." It is the responsibility of students and instructors to help maintain scholastic integrity at the university by refusing to participate in or tolerate scholastic dishonesty. (See the web site <http://www.tamu.edu/aggiehonor> for the Honor Council Rules and Procedures.)

The Americans with Disabilities Act (ADA):

ADA is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Service for Students with Disabilities in Cain Hall, Rm. B118, or call 845-1637.

Tentative Course Outline

Date	Topic	Reading
01/20	Course Organization / Introduction	1.1-1.3
01/25	Foundations of Engineering Economy	1.4-1.9
01/27	Factors: How Time and Interest Affect Money	2.1-2.2
02/01	Factors: How Time and Interest Affect Money	2.3-2.4
02/03	Factors: How Time and Interest Affect Money	2.4
02/08	Factors: How Time and Interest Affect Money	2.5
02/10	Nominal and Effective Interest Rates	3.1-3.2
02/15	Nominal and Effective Interest Rates	3.3-3.5
02/17	Nominal and Effective Interest Rates	3.6-3.7
02/22	Present Worth Analysis	4.1-4.2
02/24	Midterm Examination I	
03/01	Present Worth Analysis	4.3-4.6
03/03	Annual Worth Analysis	5.1-5.2
03/08	Annual Worth Analysis	5.3-5.4
03/10	Rate of Return Analysis	6.1-6.2
03/22	Rate of Return Analysis	6.3-6.4
03/24	Rate of Return Analysis	6.5-6.6
03/29	Rate of Return Analysis	6.7-6.8
03/31	Midterm Examination II	
04/05	Benefit/Cost Analysis and Public Sector Projects	7.1-7.2
04/07	Benefit/Cost Analysis and Public Sector Projects	7.3-7.4
04/12	Effects of Inflation	10.1-10.2
04/14	Effects of Inflation	10.3-10.5
04/19	Depreciation Methods	12.1-12.2
04/21	Depreciation Methods	12.3-12.4
04/26	Depreciation Methods	12.5-12.6
04/28	Depreciation Methods	12.6-12.7
05/03	Review	
05/05	Reading day : No class	
05/07	Final Exam. (502)	10:00 AM – 12:00 PM