

MECH 431 – Engineering Economics

Winter 2015 – Term 2

Instructor

Mark Hollett

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Teaching Assistants

Morgan Hibbert

Hoda Talebian: Tuesday, 2-3pm. Rusty Hut 119 (Knock loudly or send email to set appt)

Teaching Assistants will each be available to assist with practice problems and assignments.

Lectures

Woodward IRC Hall 6, Mondays, Wednesdays and Fridays, 12:00-1:00 p.m.

Textbook

Engineering Economic Analysis (3rd Canadian Edition). Newnan, Whittaker, Eschenbach, and Lavelle. Oxford University Press, 2014. ISBN: 978-0-19-544754-5

Online Resources

UBC Connect

All instructional materials will be distributed through UBC Connect, including (but not limited to)

- Lecture notes and reading assignments
- Additional reading material
- Course related announcements
- Practice problems and solutions
- Assignments and solutions

Piazza

The online discussion and question forum will be Piazza. Sign up using your UBC e-mail address at piazza.com/ubc.ca/winterterm22015/mech431

The expectation for this class is discussions will be student led and answered. All questions related to course material shall be directed through Piazza. **THE INSTRUCTOR AND TAs WILL NOT ANSWER COURSE QUESTIONS BY EMAIL.** They will only answer questions regarding apparent errors in the course material, and only via Piazza. You are expected to answer each other's questions. Help your classmates out.

Evaluation

Assignments (5):	10%
Midterm 1:	30%
Midterm 2:	30%
Final Project:	25%
Participation:	5%

Learning Outcomes

By the end of this course, you should be able to:

- Explain the fundamental concepts of engineering economics
- Estimate capital costs, operating costs, and total production costs
- Distinguish and apply various techniques for economic assessment, alternatives evaluation, and decision making
- Incorporate risk and uncertainty into your economic analyses

Schedule (approximate, subject to change)

Week	Dates	Topics (subject to change)	Chapters
1	January 4-8	Introduction, Costs and Cost Estimation	1 & 2
2	January 11-15	Time Value of Money, Cash Flow and Techniques	3 & 4
3	January 18-22	Present Worth Analysis, Annual Cash Flow Analysis	5 & 6
4	January 25-29	Rate of Return Analysis	7
5	February 1-5	Incremental Analysis, Sensitivity Analysis	8 & 9
6	February 8-12	No class on Monday (Family Day) Risk Analysis, Depreciation	10 & 11
7	February 15-19	Midterm Break	N/A
8	February 22-26	Taxation, Replacement Decisions	12 & 13
9	February 29- March 4	Inflation, Price Change	14
10	March 7-11	Capital Structure, Cost of Capital	15
11	March 14-18	Accounting and Engineering Economy	17
12	March 21-25	Warranty, Spare Parts and Inventory Analysis	N/A
13	March 28- April 1	Building a Business Case/Plan Project Management	N/A
14	April 4-8	To Be Determined	N/A
	Monday, April 18	Final Project Due by 6:00 p.m.	N/A

General Expectations

- You are expected to do the work.
- Respectful behavior is expected at all times. This applies to students, TAs and the instructor.
- The Good Chaps Rule is in effect.
- Phones and other devices must be on silent during the lectures
- Deadlines: assignment and project deadlines are hard dates.
 - o Assignments not received by the due date shall be graded zero.
 - o Final Project:
 - up to 24 hours late – 10% off the received mark
 - 24 to 96 hours late – 30% off the received mark
 - Over 96 hours late – 50% off the received mark
- If unable to attend a midterm or submit an assignment due to major illness or family emergency, contact the instructor – alternative arrangement may be possible (documentation may be required). Given the length of time available for the final project, no exceptions will be made for it. Early submission of the final project is encouraged.