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ET 734 Economics of Business Activities
Course Syllabus - Spring Term 2017

Instructor: Paul Indeglia, Ph.D., P.E
Phone: (603) 438-5741 from 8:00 am to 5:00 pm
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Class Time: Wednesday 9:00 am to 12:00 pm
Location: Pandora Building (UNHM) P102

Office Hours: Wednesday and Friday 1:00 pm to 3:00 pm (or by appointment)
Location: Pandora Building (UNHM) P437

Textbook: Contemporary Engineering Economics, Chan S. Park, Sixth Edition (ISBN13: 9780134105598)

Credits: 4.00

1. Course Overview

Elementary financial accounting; compound interest and time value of money; sources of capital; cost estimating; depreciation; risk and insurance and personal finance will be covered.

2. Course Description

During the course of your career you will be called upon to make, or help make, economic business decisions in your job and your personal life, which can, and will have a major impact. Even if you do not see the total value of this course now, you will in the coming weeks and thereafter. This course will teach you the basic concepts and the mechanics of:

- Accounting
- Financial statements

- Financial analysis
- The time value of money
- Breakeven analysis
- Replacement analysis
- Taxes
- Economics of quality

We will apply these concepts to analytical problem solving and various business cases. It is highly recommended that you have a financial calculator to perform the various types of calculations.

A number of the case studies that we will analyze will require "what if" analysis; the changing of certain variables, and then reevaluating the outcome. Using a spreadsheet template makes this relatively easy to do, so you should be familiar with Microsoft Excel.

Homework will be passed in at the beginning of class one week after the lecture and graded on a scale from 0 to 10. Late homework will not be accepted. This policy is only abated with a doctor's note or advanced consent of the instructor.

Missed exams and quizzes may not be made-up or rescheduled. If you cannot attend class it is imperative that you send me a message prior to the start of class. This policy is only abated with a doctor's note or advanced consent of the instructor.

You are expected to come to class prepared, **with your text book,** completed assignments and with any questions related to the course material. Be prepared to participate and answer questions. The more interactive the participation, the more beneficial the course will be. Adjustments to the course syllabus may be necessary. If so, you will be given sufficient notice.

I encourage you to ask questions. I am a considerate, fair, and an interactive instructor. My availability will be by phone, e-mail, and before or after class by appointment. I encourage you to use these resources.

3. Assignments and relevant course information:

All course information will be posted on MyCourses.unh.edu.

4. TAC of ABET Student Outcomes Criteria #3

"a. an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities."

The final exam grade will be used to evaluate the student's achievement of meeting the outcomes outlined in (a.) above, since it encompasses the broadly defined activities. An average grade of 75% or better is necessary to meet this outcome requirement.

5. Grading

Your semester course grade will be based on the following (and applied at the stated percentages):

Quizzes	15%
Mid-Term	25%
Final Exam	30%
Class Participation	10%
Homework	20%

Numerical grades will be posted on MyCourses.unh.edu for each assignment. Due to limitations in the software being used, I have found that the grade calculated within MyCourses.unh.edu does not fully reflect your grade for the class. Using the above figures, you should be able to calculate your overall grade and it is recommended you do so regularly.

To avoid any unexpected outcomes, the following guide should be used to understand how your numerical grade is translated into a letter grade. Please note that there is no rounding.

93 – 100 A	80 – >83 B-	67 – >70 D+
90 – >93 A-	77 – >80 C+	63 – >67 D
87 – >90 B+	73 – >77 C	60 – >63 D-
83 – >87 B	70 – >73 C-	0 – >60 F

6. Academic Honesty

In the preparation and presentation of any assigned work-including examinations, tests, quizzes, term papers, reports, themes and other written or oral exercises-every student shall conform to a strict standard of academic honesty. Any attempt to deceive a faculty member or to help another student to do so will be considered a violation of this standard. In all assignments, students must acknowledge the words and/or ideas of others taken from print or electronic media, whether a direct quotation or a paraphrase; any omission of this is dishonest. Cheating on examinations or tests consists of knowingly giving, receiving or using-or attempting to give, receive or use-unauthorized assistance during an examination or test. A faculty member may record a grade of "zero" for any assignment on which a student has plagiarized or cheated. For repeat offenses within a single course, the faculty member may record a grade of "F" for the course. Violations of this policy in multiple courses may result in dismissal from the College.

7. Students with Disabilities

Any student who feels s/he may need an accommodation based on the impact of a disability should contact the UNHM Disability Services Coordinator to discuss your specific needs. Please contact Jenessa Zuerk at Jenessa.Zurek@unh.edu to coordinate reasonable accommodations for students with documented disabilities.

8. Course Outline

Week	Date	Lecture Topic	Readings
1	**1/25**	**Ch 1: Engineering Economic Decisions** Role of Engineers in Business; Large-scale Engineering Projects; Strategic Engineering Economic Decisions; Fundamental Principles of Engineering Economics **Ch 2: Accounting and Financial Decision Making** Financial Status for Businesses; Using Ratios to Make Business Decisions	**Chapters 1-3**
2	**2/1**	**Ch 3: Interest Rate and Economic Equivalence** Cost of Money; Economic Equivalence; Formulae for Equivalence Calculations	**Chapter 4**
3	**2/13**	**Ch 4: Understanding Money and Its Management** Nominal and Effective; Effective; Continuous Compounding; Changing Interest Rates; Debt Management; Investing in Financial Assets	**Chapters 5**
4	**2/15**	**Ch 5: Present-Worth Analysis** Project Cash Flows; Initial Project Screening Method; Discounted Cash Flow Analysis; Variations of Present-Worth Analysis; Comparing Mutually Exclusive Alternatives	**Chapter 6**
5	**2/22**	**Ch 6: Annual Equivalent-Worth Analysis** Criterion; Capital Costs versus Operating Costs; Applying Annual-Worth Analysis; Life-Cycle Cost Analysis; Design Economics	**Chapter 7**

Week	Date	Lecture Topic	Readings
6	**3/1**	**Ch 7: Rate of Return Analysis** Rate of Return; Methods for Finding the Rate of Return; Internal-Rate-of-Return Criterion; Mutually Exclusive Alternatives	**Chapter 8**
7	**3/8**	**Mid-Term Exam**	
8	**3/15**	**Spring Recess**	
9	**3/22**	**Ch 8: Cost Concepts Relevant to Decision Making** General Cost Terms; Classifying Costs for Financial Statements; Cost Classification for Predicting Cost Behavior; Future Costs for Business Decisions; Estimating Profit from Operation	**Chapter 9**
10	**3/29**	**Ch 9: Depreciation and Corporate Taxes** Asset Depreciation; Factors Inherent in Asset Depreciation; Book Depreciation Methods; Tax Depreciation Methods; Depletion; Repair or Improvements Made to Depreciable Assets; Corporate Taxes; Tax Treatment of Gains or Losses on Depreciable Assets; Income Tax Rate to Be Used in Economic Analysis; The Need for Cash Flow in Engineering Economics	**Chapter 10**
11	**4/5**	**Ch 10: Developing Project Cash Flows** Cost-Benefit Estimation for Engineering Projects; Incremental Cash Flows; Developing Cash Flow Statements; Generalized Cash-Flow Statements; Generalized Cash-Flow Approach	**Chapter 11**
12	**4/12**	**Ch 11: Inflation and Its Impact on Project Cash Flows** Meaning and Measure of Inflation; Equivalence Calculations under Inflation; Effects of Inflation on Project Cash Flows; Rate-of-Return Analysis under Inflation	**Chapter 12**
13	**4/19**	**Ch 12: Project Risk and Uncertainty** Methods of Describing Project Risk; Probability Concepts for Investment Decisions; Probability Distribution of NPW; Risk Simulations; Decision Trees and Sequential Investment Decisions	**Chpt 13 & 14**

Week	Date	Lecture Topic	Readings
14	**4/26**	**Ch 13: Real-Options Analysis** Risk Management: Financial Options; Options Strategies; Option Pricing; Real-Options Analysis; Simple Real-Option Models; Estimating Volatility at the Project Level **Ch 14: Replacement Decisions** Replacement Analysis Fundamentals; Economic Service Life; Replacement Analysis when the Required Service is Long; Replacement Analysis with Tax Considerations	**Chapter 15**
15	**5/3**	**Ch 15: Capital Budgeting Decisions** Methods of Financing; Cost of Capital; Choice of Minimum Attractive Rate of Return; Capital Budgeting	
16	**5/10**	**Final Exam**	