UCLA FALL 2022

ENG 110 - INTRODUCTION TO TECHNOLOGY MANAGEMENT AND ECONOMICS

LECTURES: MW - 12:00-1:50pm FRANZ 1260   **THIS IS AN IN-PERSON CLASS!!!**

Mel: melike9@ucla.edu | office hours: Wed 2-3pm online via zoom
Aditya Navghare: adi121297@g.ucla.edu | office hours: TBD
Francis del Campo Melchor: francisdcm@g.ucla.edu | office hours: TBD
Shima Sarabi: sarabi@ucla.edu | office hours: TBD

Course Objective

Introduce the fundamental principles of economics as they apply to technology management

Texts

Gregory Mankiw, Principles of Economics, 8th Edition
ISBN:1305585127

D.G. Newnan, J.P. Lavelle, T. Eschenbach, Engineering Economic Analysis, 10th Edition or later
ISBN:0195394631

Grading

HW - 10%
Group Paper - 10%
Online Poll Questions - 15%
Current Event Posts - 10%
Final - 30%
Midterm - 25%
Letter grade will be assigned according to the following scale:
85 and above A
80-85 A-
75-80 -B+ …etc.

week 1

◇Introduction to microeconomics of product markets ◇ Factors of production ◇ Cost structure of a typical production process ◇ Fixed, variable, total, average, marginal costs, profit maximization under perfect competition.

Reading: GM-Ch.13

TO DO

Form a group if you would like to work on HWs with your classmates. You may change your group anytime throughout the quarter or work on your own. You can use this sheet to sign up for a HW group. Post your online current event forum comment.

week 2

◇ Supply derivation ◇ Supply and demand interaction ◇ Economies of scale ◇ Short and long term shut-down rules ◇ Market Structures ◇ Profit maximization under monopoly ◇ How to become and stay as a monopoly

Reading: GM-Ch.14, 15

TO DO

Submit HW 1. Post your online current event forum comment.

week 3

◇ Natural monopoly ◇ Cartel ◇ Monopolistic Competition ◇ Strategies to further increase profit ◇ Consumer Surplus ◇ Price discrimination, bundling, freemium model, network externalities

Grading Details

Homework:

Online submission (PDF) only. You will work on your homework with your classmates (up to 4 students). Only one of you should submit the homework with all group member names appearing clearly on the document submitted.

Online Quiz Questions:

Each lecture, 2 to 3 quiz questions will be asked based on that day's lecture. Polls will close before the live session ends. _Lowest 4 polls will be dropped_ before calculating the average.

Exams:

Midterm: TBD.
Final: Dec 6, 8:00-11:00am,
Closed notes, books, and www. You will be able to use a formula sheet (both sides of a regular sheet) as well as a simple calculator.

Group Project:

Saturday, Dec 10, 11pm, submission online. See the class webpage for details.

Current Event Posts:

Each week, one or more current event articles will be posted on bruinlearn. You are expected to post a brief comment on the Discussion Forum that will be provided for each week. Forum will be closed each week at 11pm on Sunday. You will get 100% per week for comments adhering to the rules outlined at the forums. No Partial credit for late submission!!! UPDATE: THE LOWEST SCORE WILL BE DROPPED!

◇ Introduction to time value of money ◇ Equivalence of cash flows ◇ Effective rate ◇ Oligopoly ◇ Complement and Substitute Commodities

Reading: GM-Ch.16, 17

TO DO

Submit HW 2. Post your online current event forum comment.

week 4

◇ Annuities and perpetuities ◇ Profit maximization with time value of money taken into account ◇ Net Present Value ◇ Project Evaluation when lives are unequal ◇ Equivalent Uniform Annual Worth (EUAW)

TO DO

Submit HW 3. Post your online current event forum comment.

Reading: NLE-Ch. 3, 4, 5,6

week 5

◇ Equivalent Uniform Annual Worth (EUAW) - continued

◇ Midterm(?)

TO DO

Submit HW 4. Post your online current event forum comment.

Reading: NLE-Ch. 5, 6

week 6

◇ Net Present Value and Internal Rate of Return

TO DO

No Homework due this week. Post your online current event forum comment. Make sure you have a team in place for the group project.

You can use this sheet to sign up for a project group.

Reading: NLE-Ch. 7

week 7

◇ Internal Rate of Return(IRR) continued ◇ Incremental IRR ◇ Graphical representation of IRR

TO DO

Submit HW 5. Post your online current event forum comment. Start to meet with your team to organize and allocate the workload for the group project.

Reading: NLE-Ch. 8

week 8

◇ Selection of a discount rate ◇ Uncertainty and Decision Trees

Reading: NLE-Ch. 10,15

TO DO

Submit HW 6. Post your online current event forum comment.

week 9

◇ Introduction to macroeconomics for engineers ◇ Gross Domestic Product and Consumer Price Index ◇ Inflation and its effects on project evaluation.

Reading: GM-Ch.23, 24, 33, 34

TO DO

Submit HW 7. Post your online current event forum comment.

week 10

◇ Fiscal Policy and Monetary Policy and their importance vis-a-vis project evaluation.

TO DO

Submit HW 8. Post your online current event forum comment.

Reading: GM-Ch.29, 30