IM 7011: Information Economics

Overview and preliminaries
Lecture 1.1: Overview

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Welcome!

- This is **Information Economics**, NOT **Information Economy**.
  - This is not a course talking about how to design and sell information goods, information systems, social networks, and high-tech products.
- This is an economics course focusing on the issue of information. This is **economics of information**.
- In different business environments:
  - How people behave with different information?
  - What is the value of information?
  - What information to acquire?
  - Is knowing more always better?
- In this course, we focus on **information asymmetry**.

Information asymmetry

- ▶ The world is full of asymmetric information:
  - ▶ A consumer does not know a retailer's procurement cost.
  - ▶ A consumer does not know a product's quality.
  - ▶ A retailer does not know a consumer's valuation.
  - ▶ An instructor does not know how hard a student works.
- ▶ As information asymmetry results in inefficiency, we want to:
  - ▶ Analyze its impact. If possible, quantify it.
  - ▶ Decide whether it introduces driving forces for some phenomena.
  - ▶ Find a way to deal with it if it cannot be eliminated.
- ▶ This field is definitely fascinating. However:
  - ▶ We need to have some "**weapons**" to explore the world!

Before you enroll...

- Prerequisites:
  - Calculus.
  - Convex optimization.
  - Probability.
  - Game theory.
- Language: **"All" English**.
  - All materials are in English.
  - Students should try their best to speak English in class. But when it really helps, one may speck Chinese.
  - The instructor will speak Chinese in office hour unless a student prefers English.
  - The instructor will speak Chinese in lectures when it helps.

The instructor

- Ling-Chieh Kung.
  - Second-year assistant professor.
  - Office: Room 413, Management Building II.
  - Office hour: **9:10am-11:10am, Thursday** or by appointment.
  - E-mail: lckung@ntu.edu.tw.
- There is no teaching assistant for this course.

Related information

- ▶ Classroom: Room 204, Management Building II.
- ▶ Lecture time: 9:10am-12:10pm, Monday.
- ▶ Main references:
  - ▶ *Contract Theory* by P. Bolton and M. Dewatripont.
  - ▶ Around ten academic papers.
- ▶ References:
  - ▶ *Game Theory for Applied Economists* by R. Gibbons.
  - ▶ *The Theory of Incentives: The Principal-agent Model* by J.-J. Laffont and D. Martimort.
  - ▶ *Information Rules: A Strategic Guide to the Network Economy* by C. Shapiro and H. Varian.
  - ▶ *Auction Theory* by V. Krishna.

"Flipped classroom"

- Lectures in **videos**, then discussions in classes.
- Before each Monday, the instructor uploads a video of lectures.
  - Ideally, the video will be no longer than one and a half hour.
  - Students must watch the video by themselves before that Monday.
- During the lecture, we do three things:
  - Discussing the lecture materials (0.5 to 1 hour).
  - Solving **class problems** (1 to 2 hours).
  - Further discussions (0.5 to 1 hour).
- After the lecture, students also need to do homework.

Teams

- Students form **teams** to do class problems and homework.
- Each team has **three** students.
  - Unless a special approval is obtained.
- Students may change teammates from homework to homework.
- Once some students form a team for one homework, they will be **in the same team** for class problems until the submission of the next homework.
- All students get the same grades for each homework and class problem.

Homework and class problems

- Homework:
  - Homework will be assigned roughly once per two weeks.
  - For each homework, each team needs to submit only one paper.
  - Please put a **hard copy** of your work into my **mailbox** on the first floor of the Management Building II by the due time.
  - No submission in class. No late submission.
  - The lowest one homework grade will be dropped (i.e., you may skip one homework if you want).
- Class problems:
  - For each problem assigned by the instructor in class, students discuss in teams for around 10 minutes.
  - At least **one team** then demonstrate their answer to the class (in **English**) to get grades for class problems.
  - Sometimes teams may volunteer; sometimes the instructor determines who to answer.

Class participation and office hour

- Class participation:
  - We do not require one to attend all the lectures.
  - However, those who participate in class discussions get rewarded.
  - Class problems also count for grades.
  - Missing a class makes it impossible for you and less possible for your teammates to get this part of grades.
- Office hour:
  - Come to discuss any question (or just chat) with me!
  - If the regular time does not work for you, just send me an e-mail.
  - My "open-door" policy.

Projects and exams

- Project:
    - Please form a new team of at most n students, where the value of n will be determined according to the class size.
    - Each team will write a research proposal for a self-selected topic, make a 30-minute presentation, and submit a report.
    - All team members must be in class for the team to present.
- Two exams:
    - In-class and open whatever you have (including all kinds of electronic devices).
    - No discussion is allowed. Cheating will result in severe penalty.
    - The final exam is comprehensive.

Grading

- ▶ Homework: 20%.
- ▶ Projects: 20%.
- ▶ Class problems: 15%.
- ▶ Class participation: 5%.
- ▶ Two Exams: 40%:
  - ▶ Plan 1: midterm 20% and final 20%.
  - ▶ Plan 2: midterm 15% and final 25%.
- ▶ The final letter grades will be given according to the following conversion rule:

Letter	Range	Letter	Range	Letter	Range
A+	$[90, 100]$	B+	$[77, 80)$	C+	$[67, 70)$
A	$[85, 90)$	B	$[73, 77)$	C	$[63, 67)$
A−	$[80, 85)$	B−	$[70, 73)$	C−	$[60, 63)$

Important dates and tentative plan

- Important dates:
  - Week 5 (2013/10/7): No class because the instructor is in a conference.
  - Week 9 (2013/11/4): Midterm exam.
  - Weeks 16 and 17 (2013/12/23 and 30): Project presentation.
  - Week 18 (2014/1/6): Final exam.
- Tentative plan:
  - Review of optimization and game theory.
  - Contracting without information asymmetry.
  - Hidden information: screening (Ch. 2 of Contract Theory).
  - Hidden information: signaling (Ch. 3 of Contract Theory).
  - Hidden action: moral hazard (Ch. 4 of Contract Theory).
  - Advanced topics (Ch. 6 and 7 of Contract Theory).

Online resources

- ► CEIBA.
  - ► Viewing your grades.
  - ► Receiving announcements.
- ► http://www.ntu.edu.tw/~lckung/courses/IEFa13/.
  - ► Downloading course materials.
- ► The bulletin board "NTUIM-lckung" on PTT.
  - ► Discussions.
- ► YouTube:
  - ► Watching lecture videos.