

Syllabus
Economics of Information Technology
資訊經濟
Fall 2006

Meeting time: T Section 01:30-04:30 PM / TH Section 06:30-09:30 PM

Meeting room: MB 312

Instructor: Prof. Yung-Ming Li

Office Hours: Tuesday 10:00 ~12:00 or by appointment

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Course Overview

Economics of Information Systems has gained considerable momentum recently as evidenced by both large number of related papers published in leading journals and faculty composition in leading business schools. This course introduces economics methods to study the role of information and networks technologies in the emerging digital/Internet economy. The course covers modeling methods (such as game theory and industrial organization), economics issues (such as information asymmetry, network externality, incentive mechanism design, and product differentiation, cooperation and competition), and applications (such as digital media pricing, network pricing, online reputation and trust mechanism, P2P networks, online community, and electronic market). This course offers an exposition of how research problems are formulated and refined to a working definition, and how the actual research is conducted and reported.

Utilizing the economics methods, the course aims to help students transit from a consumer of research to an active researcher and a contributor of insight. We will achieve the course objectives through lectures, individual reading and presentation of papers, class discussions, and development of a term project. By the end of the semester, each graduate student is expected to have a broad understanding of the methodologies, themes, and research questions that identify the core identity of economics of the information and networks research field.

Course Outlines

- Introduction to Economics of Information Technology
- Game-theoretic Modeling
- Information Asymmetry
- Incentive Mechanism (Contract) Design
- Competition and Cooperation
- Digital/Information Goods
- Networks/Internet Pricing
- Reputation and Trust Mechanisms
- Applications (Electronic Commerce, Online Community, Peer-to-Peer Networks, DRM technologies, etc.)

Reference Book(s)

- Shapiro, C. and Varian, 1999, Information Rules. Harvard Business School Press.
- Gibbons, R., 1993. Game Theory for Applied Economists. Princeton University Press.
- Shy, Oz. 1996. Industrial Organization: Theory and Applications. MIT Press.

Reading

We will select the general articles from leading IT-Business Magazines such as *Business Week*, *Economist*, *Business 2.0*, and research papers from top journals, such as *Management Science*, *Information System Research*, *Decision Support Systems*, *IEEE TKDE*, *IEEE/ACM Trans. on Networking* and *International Journal of Electronic Commerce*. The scope of the papers will include the areas of digital media, online community, electronic market, and new Internet applications.

Class Participation

All students are expected to be ready to discuss the assigned articles on the class meeting day.

The following are some suggestions for reading and discussing the articles:

- Be familiar with the assigned readings and be able to identify the questions.
- Evaluate the paper's approach to the research question.
- Highlight theoretical modeling issues related to the paper.
- Suggest a research question that would extend the work.

Homework

The purpose of assigning homework is to let students practice and familiarize the methodologies we discuss in the class. All students are expected to solve the problems by himself, however, the solutions of the homework can be submitted individually or by a group.

Term Project

At the end of the class, students (individually or by a group) are required to turn in a term project. The following are some suggestions for the term project:

- Select an interesting, timely, and promising IT related topic.
- Emphasize the importance of the chosen topic (technology and business opportunities).
- Utilize the discussed methodologies to model the economic behaviors and derive managerial implications.

Grading

- Homework (20%)
- Participation (20%)
- Presentation (30%)
- Term Project (30%)