

Economics 404/515 (A1) - Fall 2004
The Economics of Information
Zvika Neeman
Lectures: MWF 10:00-11:00, MCS B33

Office Hours: M 11:00 – 12:00 pm, F 2:30 pm – 4:30 pm, or by appointment;
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Course Web Page: The material for this class (syllabus, lecture notes, announcements, problem sets and solutions, additional readings) will be posted on Course Info. In order to access the course web page you can go to http://courseinfo.bu.edu/courses/04fallcasec404_a1/. You will be asked to login. Use your BU username and Kerberos password. You can also access the web page directly through Student Link (simply click the course button).

Course Overview

The course provides a one-semester introduction to the economics of information. Since the 1970s, the economics of information has become an important part of general economic theory. Its importance was recognized by the Nobel Prize Committee in 2001, when it awarded the Economics Prize to three economists who had pioneered the field. Information economics covers a wide range of subjects in which different “players” have access to different private information, which differently affects their incentives and strategic behavior.

The course provides a rigorous introduction to the foundations and “language” used in the field of information economics. Applications to different areas in economics will be emphasized, including a) games with complete and incomplete information, b) the “market for lemons” and its applications to credit-rationing, labor markets, used-cars markets, market-signaling, evolution and biology, poker, entry-deterrence, advertising, and price-discrimination, c) auctions, including English-, Dutch-, first-price-, and second-price auctions, d) auction outcomes, including revenue equivalence and the “winner’s-curse,” and e) topics in “market design.”

Prerequisites: EC201 (or EC211) Intermediate Microeconomics and a Calculus Course (one of MA121, 122, 123, 124, 127, or 129). Game Theory, EC403, is recommended, but not required.

Texts:

Class discussion will be based on lecture notes that will be made available on the course’s homepage. The following supplementary texts may also be helpful. They will all be available on reserve in the library. The second textbook is also available in the BU bookstore.

- Mas-Collel, Whinston, and Green, *Microeconomic Theory*, Oxford University Press
- Klemperer, *Auctions: Theory and Practice*, Princeton University Press
- Kreps, *A Course in Microeconomic Theory*, Princeton University Press

Problem Sets

There will be 6 problem sets during the course. Each problem set will be distributed in class and posted on the course web page, and will be due the one week later, at the beginning of class. Solutions will be posted on the course web page and will be discussed in class. You can work in teams for the problem sets (2 to 3 students per team), but each of you must turn in the problem set with his/her own name (and the names of the team members). Problem sets handed in late will not be accepted unless you have a valid medical or personal excuse.

Grades

- Problem Sets (20%)
- Midterm Exam (40%)
- Final (40%)

The grades on the problem sets are a bonus. Each of the best 5 out of the 6 problem set counts for 4% of the final grade. Missing problem sets receive the grade of 0. If the average cumulative grade for the problem sets is lower than the average of the midterm and final, then it is replaced by the average of the midterm and final. Thus, the final grade of a student who did not submit any of the problem sets is given by the average of the midterm and final.

Exams

Midterm Exam (60 minutes): **Wednesday, October 20** ⇒ IN CLASS

Final Exam (120 minutes): **Monday, December 20th** ⇒ 9:00 am – 11:00 am (room TBA by the Registrar)

The midterm exam will be based on the material covered in class prior to the exam. The final exam will be based on material covered in class throughout the course.

IMPORTANT:

- It is your responsibility to plan your travel around exams dates. In particular, the date of the final exam is determined by the Registrar and cannot be changed for any reason.
- All exams are required. If you miss an exam without an acceptable excuse, you will receive a grade of zero. The only exceptions will be for a verified family emergency or for an illness or injury that is confirmed by the University Medical Clinic or other doctor. If you miss an exam for a legitimate reason you will be given the choice of taking a makeup or having your remaining grades re-weighted appropriately.

Academic Conduct

It is your responsibility to know and understand the provisions of the CAS Academic Conduct Code (copies are available in room CAS 105). Cases of suspected academic misconduct will be referred to the Dean's Office, and will receive a zero grade for the exam.

Class Attendance and Requirements

Class attendance is required. Failure to attend classes without medical or reasonable excuses, such as religious holidays, will have a negative effect on your final grade.

Teaching Assistant: Keisuke Nakao

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COURSE OUTLINE

Part 1: Introduction (1st week)

Part 2: Adverse Selection (1st -3rd weeks)

- I. The Market for Lemons

Recommended reading for parts 4-6: MGH ch. 12; Kreps ch.17.

Part 3: Signaling (3rd -4th weeks)

- II. Market Signaling: Applications to Education and Labor Markets

Part 4: Screening (5th -6th weeks)

- III. Insurance Markets
- IV. Optimal Price Discrimination

Part 5: Moral Hazard (7th week)

- V. The Design of Incentive Schemes

Recommended reading: MGH ch. 13; Kreps ch.16.

Part 6: Games with Complete Information (8th -9th weeks)

- VI. Expected Utility Theory
- VII. Strategic form Games
- VIII. Dominant Strategies
- IX. Pure-Strategy Nash Equilibrium
- X. (General) Nash Equilibrium

Recommended reading: MGH ch. 7; Kreps ch.11-12.

Part 7: Games with Incomplete Information (10th -11th weeks)

- XI. Bayesian Games
- XII. Bayes-Nash Equilibrium

Recommended reading: MGH ch. 8; Kreps ch.13.

Part 8: Auctions (12th -15th weeks)

- XIII. English-, Dutch-, first-price-, and second-price Auctions
- XIV. Revenue Equivalence of Private-Value Auctions
- XV. Common Value Auctions
- XVI. The “Winner’s-Curse”
- XVII. Double-Auctions

Disclaimer

Schedules and topics are subject to change. The midterm and final examination dates ARE NOT.