410-3

Microeconomics

Instructor: Wojciech Olszewski
Department of Economics, Northwestern University
Office: Global Hub 3213, Office hours: Thu. 1:30-3:00, Ph.: (847) 491-8482
E-mail: wo@northwestern.edu
TAs: Inostroza, Nicolas (nicolasinostroza2018@u.northwestern.edu), Office hours: TBA,
and Egor Starkov (egorstarkov2018@u.northwestern.edu), Office hours: TBA

Course Presentation

The course has two parts. The first part introduces game theory (rationalizability, Nash equilibrium, correlated equilibrium, Bayes-Nash equilibrium, dynamic games of perfect and complete information, dynamic games of imperfect and incomplete information, repeated games). The second part focuses on information economics (adverse selection, signaling, screening, dominant-strategy and Bayesian mechanism design, moral hazard). Other topics will be included if time allows.

Texbooks

The textbook for this class is Mas-Collel, A., M. Whinston, and J. Green (1995), *Microeconomic Theory*, Oxford University Press. The exposition of some topics (rather few) will be closer to Fudenberg D. and J. Tirole, *Game Theory*, MIT Press, 1991. Some other topics (also few) will not be covered by the textbook, but will be covered by lecture notes or slides.

Tentative Schedule

The following is a tentative schedule. Changes may occur throughout the quarter.

Monday, April 1: Introduction to game theory (MWG 7 & 8.A-8.B)

Wednesday, April 3: Rationalizability (MWG 8.C)

Monday, April 8: Nash and correlated equilibrium (MWG 8.D, 8.F)

Wednesday, April 10: Incomplete information (MWG 8.E)

Monday, April 15: Bayes-Nash equilibrium (MWG 8.E)

Wednesday, April 17: Introduction to extensive-form games (MWG 9.A-9.B)

Monday, April 22: Dynamic games with perfect and complete information (MWG 9.A-9.B)

Wednesday, April 24: Dynamic games with imperfect and incomplete information (MWG 9.C-9.D)

Monday, April 39: Catching up with material

Wednesday, May 1: Midterm

Monday, May 6: Repeated games (MWG 12.D; see also FT 5.5)

Wednesday, May 8: Adverse selection (MWH 13A)

Monday, May 13: Signaling (MWG 13.C)

Wednesday, May 15: Screening (MWH 13.B)

Monday, May 20: Introduction to mechanism design (MWG 23.A-23.B; see also FT 7)

Wednesday, May 22: Dominant-strategy mechanism design (MWG 23.C; see also FT 7)

Wednesday, May 29: Bayesian mechanism design (MWG 23.D; see also FT 7)

Monday, June 3: Moral hazard (MWG 14.B)

Wednesday, June 5: Catching up with material

Date and Time to be announced: Final Exam

Logistics

Regular classes are held on Mon. and Wed., 9:00-10.50 AM. Slides will be posted by 7 P.M. a day before each class, on the Canvas website in the Files folder. TA Sessions are held on Fri. 9:00-10:50. Please check regularly the course website on Canvas for announcements, possible changes, and/or additions to what is described in this document.

Problem Sets

Problem sets are an important part of the course. Each problem set will be posted by Wednesday by 7 P.M., on the Canvas website for 410-3 in the "Assignments" folder. It is due on the following Tuesday by 5 P.M. It is a student's responsibility to put the problem set in the TA's mailbox (in the Main Office of the Economics Department). Turning in problem sets is required. They will be graded, and grades below 50% will be viewed as unsatisfactory. Unsatisfactory grades affect significantly the final grade. Problem sets returned late receive an unsatisfactory grade. Problem sets will be graded weekly, and discussed in the TA discussion sessions. The solutions will be posted in the "Assignments" folder on evening, after 7.00 PM. Students are encouraged to work in groups of up to 4 people. Groups should turn in a single set of answers with all names of their members on it. It is strongly recommended to work on problem sets without consulting solutions from past years or any online resources. When turning in problem sets, students are requested to staple all pages.

Examinations

There will be a 90-minute midterm on **Wednesday, May 1nd**, during the usual class hours. The midterm will cover the material in the first 9 lectures. The final exam will take place during exam week, the exact date and time will be announced later. It will be a two-hour exam, and will cover the material taught in the entire course. Roughly, about 3/4 of the questions will be on the last 9 lectures. The midterm and the final will approximately count with weights 3/7 and 4/7, respectively, towards the determination of the final grade. No make-ups for the exams will be offered. In case of an excused absence from the midterm (e.g., for medical reasons), the final will count for both exams. If an absence from a midterm is unexcused, a score of zero will be entered for that exam.