



TOBB ETU / FALL 2022
ECON 601 MICROECONOMICS I / PART 1

Instructor : İsmail Sağlam (joint with Ayça Özdoğan Atabay, who teaches Part 2)
Office : 245
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Class Room : 306
Class Hours : Thursday 10:30-13:20
Office Hours: Monday 14:00-15:00 (or by appointment)

Course Objective

The aim of this course is to introduce PhD students to various fields in microeconomics. The course consists of two parts: Part 1 is taught by I. Sağlam and Part 2 by A. Ozdogan Atabay.

Course Grading

Part 1 : 50%
Part 2 : 50%

In Part 1 of the course, there will be one exam (40%) and homework assignments (10%).

Topics in Part 1

- Cooperative Bargaining (Weeks 1-2):
Axiomatization of the Nash, Kalai-Smorodinsky, and Egalitarian Bargaining Rules
- Mechanism Design (Weeks 3-4):
King Solomon's Problem and Maskin's Theorem for Nash Implementation
- Matching Theory (Weeks 5-6):
Marriage Problem, Student Placement, and Housing Exchange

Reading List for Part 1

Abdulkadiroğlu A, Sönmez T (1999) House Allocation with Existing Tenants. *Journal of Economic Theory*, 88(2), 233-260.

Balinski M, Sönmez T (1999) A Tale of Two Mechanisms: Student Placement. *Journal of Economic Theory*, 84(1), 73-94.

Kalai E, Smorodinsky M (1975) Other Solutions to Nash's Bargaining Problem. *Econometrica*, 43(3), 513-518.

Nash J (1950) The Bargaining Problem. *Econometrica*, 18, 155-62.

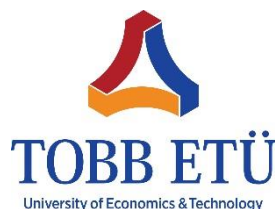
Repullo R (1987) A Simple Proof of Maskin's Theorem on Nash Implementation. *Social Choice and Welfare*, 4, 39-41.

Roth AE, Sotomayor MAO (1992) *Two-Sided Matching: A Study in Game-Theoretic Modeling and Analysis (Econometric Society Monographs, Series Number 18)*, Cambridge University Press; Reprint edition.

Thomson W (2009) *Bargaining and the Theory of Cooperative Games: John Nash and Beyond*. University of Rochester.

Class Rules

1. **Attendance:** Students are required to attend to at least 70% of classes in order to get a letter grade other than U.
2. **Disruptive Behaviors:** Disruptive behaviors are not permitted. Students with repetitive and disruptive behavior may be removed from class.
3. **Plagiarism, Cheating and Collusion:** Students are expected to refrain from any form of plagiarism, cheating and collusion. Cheating, plagiarism, and collusion are serious offenses resulting in a grade penalty and disciplinary action.
4. **Exams:** The exams will cover all material that is taught during the class or assigned to students.
5. **Make-up Exams:** A make-up will be given under the conditions accepted by the Institute. Make-up exams will not be easier than the regular exam. There will be no make-up of homeworks or make-up exams.
6. **Grade Changes:** A grade change will be made only in the unlikely case of an error of fact.



FALL 2022
Department of Economics
TOBB University of Economics and Technology
ECON 601: MICROECONOMICS (2nd PART)

INSTRUCTOR: Ayça Ozdogan Atabay	TIME: 10:30-13.20 Thursdays
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This course will jointly be given by Ayca Ozdogan Atabay and Ismail Sağlam. The best way to contact me is through email. Emails will be returned within 24 hours except over the weekends. Important information such as the announcements about homework assignments and tests will be sent to students' university email accounts, as well as posted on **Piazza** at <https://piazza.com>. It is **YOUR responsibility** to check your *emails*, *Piazza*, and *ortam* platforms at least once a week.

COURSE DESCRIPTION/CONTENT

In making decisions, one cannot ignore the actions of others in most of the situations. The fact remains that most real-world decisions are not made in isolation, but involve *strategic interaction* with others. Moreover, we frequently see that these interactions involve informational or observational asymmetries among the participants. In this part, we will cover some topics in game theory and mechanism design that address to these asymmetries and discuss the related seminal papers. We will do three of the five topics listed in the tentative plan.

PREREQUISITES

It will be assumed that the students have completed an upper level (first-year-graduate) introductory course in Game Theory. Also, the students are expected to be familiar with mathematical notation and formal reasoning involving basic real analysis and probability theory as we are going to read and write some proofs of selected theorems throughout this mini-course. Main tool is constrained optimization.

TEXTBOOK

There is no required textbook for this part of the course. The following constitute a partial list of suggested books. The list of papers involving the ones that we will be discussing in the lecture (indicated by **) and the ones that students are expected to pick from to write a referee report can be found below.

- Inés Macho-Stadler and J. David Pérez-Castrillo, *An Introduction to the Economics of Information: Incentives and Contracts*, Oxford University Press, 2001
- Bernard Salanié, *The Economics of Contracts: A Primer*, 2nd ed., MIT Press, 2005
- Andreu Mas-Collel, Michael D. Whinston and Jerry Green, *Microeconomic Theory* (Oxford University Press, 1995).
- Patrick Bolton and Matthias Dewatripont, *Contract Theory* (MIT Press, 2005)
- Tadelis, *Game Theory: An Introduction*, Princeton University Press, 2013.
- Mailath G. J. and L. Samuelson, *Repeated Games and Reputations: Long-Run Relationships*, Oxford University Press, 2006.
- Mailath G. J. and L. Samuelson, *Handbook of Game Theory with Applications, Volume 4 Chapter 4 (Reputations in Repeated Games)*, Elsevier, 2015.

GRADING POLICY (for the 2nd part)

This part will make 50% of the course. There will be several homework assignments, one announced quiz and one midterm exam to evaluate your performance in the course. The weights in this part:

Homework (30 %)

There will be 3-4 homework assignments. Students are encouraged to work together; however, each student must hand in her or his own homework citing the references s/he uses and the names of the class mates s/he works with. The lowest homework assignment score will be dropped from the average.

Referee report (35 %)

The student is expected to write a referee report for one of the papers in the reading list. The report should not exceed five double-spaced pages and should have at least the following components:

- Main question asked by the paper (Why is it important? How does it relate to the literature?)
- The method used to answer the question
- Theory: Brief description of the model
- Summary of the findings
- Limitations and possibilities for further research

Final (35 %)

The final covers all material studied in this part. The make-up will be granted only in case of a valid and documented reason. Absence without any valid documentation will result in a grade of zero from that exam. In case of an illness, you are required to bring a formal doctor's note from a hospital. Students who want to take a make-up exam need to inform me by email as early as possible.

The Final Exam of the course will test only the materials covered in the 2nd part of the course. However, the Retake (Bütünleme) Exam will be cumulative (all the subjects discussed both in the 1st and 2nd half).

NOTES

- Students are responsible for material covered in both the lecture and the supporting material assigned in related books. Everything discussed in class is part of the course and will appear on exams.
- Attendance is essential. If you miss more than 30% of the lectures, you fail complying with the rules of YÖK.

- Please use technology “responsibly” while you are in the lecture. This means TURNING OFF your cell-phones and any other devices. The instructor thanks you in advance.

NOTES ON ACADEMIC HONESTY AND STUDENT CONDUCT

All the work submitted must be that of student. You are encouraged to work with others in understanding the concepts and problems. However, each student must hand in their own homework assignment and all the sources of information and references used including a classmate (except for the textbook, lecture and recitation notes) must be **cited**. Identical answers will receive a score of zero. If the academic dishonesty occurs on a final or midterm, a grade of F will be received. Cheating and plagiarism will be penalized according to the disciplinary rules of the university and YÖK.

TENTATIVE COURSE PLAN

I. Adverse Selection and Screening **

Hart, O. D. (1983), “Optimal Labour Contracts under Asymmetric Information: An Introduction,” *Review of Economic Studies*, 50, 3-35.

** Mirrlees, J. A. (1971). "An Exploration in the Theory of Optimum Income Taxation," *The Review of Economic Studies*, 38, 175-208.

Stiglitz, J. E. (1977), “Monopoly, Non-Linear Pricing and Imperfect Information: The Insurance Market,” *Review of Economic Studies*, 44, 407-430.

Stiglitz, J. and A. Weiss (1981), “Credit Rationing in Markets with Imperfect Information,” *American Economic Review*, 71, 393-410.

II. Moral Hazard **

** Grossman, S. and O. Hart (1983), “An Analysis of the Principal-Agent Problem,” *Econometrica*, 51, 7-45.

** Holmstrom, B. (1979), “Moral Hazard and Observability,” *Bell Journal of Economics*, 10,74-91.

Holmstrom, B. (1982), “Moral Hazard in Teams,” *Bell Journal of Economics*, 13, 324-340.

Holmstrom, B. and P. Milgrom (1991), “Multitask Principal Agent Analyses: Incentive Contracts, Asset Ownership and Job Design,” *Journal of Law, Economics, and Organizations*, 7, 24-52.

Shapiro, C. and J. Stiglitz (1984), “Equilibrium Unemployment as a Worker Discipline Device,” *American Economic Review*, 74, 433-44.

III. Cheap Talk Games

** Crawford, V.P. and Sobel, J. (1982). “Strategic Information Transmission,” *Econometrica*, 50(6): 1431-1451.

Crawford, V.P. (2003). “Lying for Strategic Advantage: Rational and Boundedly Rational Misrepresentation of Intentions,” *The American Economic Review*, 93(1): 133-149.

Farrell, J. (1993). “Meaning and Credibility in Cheap Talk Games,” *Games and Economic Behavior*, 5(4): 514–531.

Farrell, J. and Gibbons, R. (1989). "Cheap Talk with Two Audiences," *The American Economic Review*, 79(5): 1214-1223.

Kartik, N. (2009). "Strategic Communication with Lying Costs," *Review of Economic Studies*, 76: 1359-1395.

Kartik, N., Ottaviani, M., and Squintani, F. (2007). "Credulity, Lies and Costly Talk," *Journal of Economic Theory*, 134: 93-116

Ottaviani, M. and Squintani, F. (2006). "Naive Audience and Communication Bias," *International Journal of Game Theory*, 35: 129-150.

Goltsman, M. and Pavlov, G. (2011). "How to talk to multiple audiences," *Games and Economic Behavior*, 72 (2011) 100–122.

IV. Repeated games and reputation

Harsanyi, J. C., "Games of Incomplete Information Played by Bayesian Players, Parts I-III," *Management Science*, 14(3), (1967-68), pp. 159–182.

Milgrom, P. and J. Roberts, "Predation, reputation, and entry deterrence," *Journal of Economic Theory*, 27 (1982), pp. 280-312.

** Kreps, D.M. and R. Wilson, "Reputation and imperfect information," *Journal of Economic Theory*, 27 (1982), pp. 253-279.

** Fudenberg, D., and D. K. Levine, "Reputation and Equilibrium Selection in Games with a Patient Player," *Econometrica*, 57(4), 1989, pp. 759–778.

Barro, R.J and Gordon D.B., "Rules, discretion and reputation in a model of monetary policy", *Journal of Monetary Economics*, Volume 12, Issue 1, 1983, pp. 101-121.

Barro, R.J., "Reputation in a model of monetary policy with incomplete information," *Journal of Monetary Economics*, 17, 1986, pp. 3-20.

Backus D. and J. Driffill, "Inflation and Reputation," *The American Economic Review*, Vol.75, No. 3, 1985, pp. 530-538.

Sobel, J., "A theory of credibility," *Review of Economic Studies*, 52, 1985, pp. 557-573.

Phelan, C., "Public trust and government betrayal," *Journal of Economic Theory*, 130, 2006, pp. 27-43.

Lu, Y. K., "Optimal policy with credibility concerns," *Journal of Economic Theory*, Volume 148, Issue 5, 2013, pp. 2007-2032.

Lu, Y.K., King, R.G. and E. Pasten, "Optimal reputation building in the New Keynesian model," *Journal of Monetary Economics*, Volume 84, December 2016, Pages 233-249.

Mathisa, J., McAndrews J. and J-C Rochet, "Rating the raters: Are reputation concerns powerful enough to discipline rating agencies?," *Journal of Monetary Economics*, 56, 2009, 657–674

V. Global Games

** Morris S. and H.S. Shin, "Global Games: Theory and Applications" in *Advances in Economics and Econometrics*, 8th World Congress of the Econometric Society, ed. by M. Dewatripont, L. Hansen, and S. Turnovsky. Cambridge, U.K.: Cambridge University Press, 56–114. [712,719,723,741,745]

** Carlsson, H. and E. van Damme (1993a), "Global Games and Equilibrium Selection," *Econometrica*, 61, 989–1018.

** Carlsson, H. and E. van Damme (1993b), "Equilibrium Selection in Stag Hunt Games," in *Frontiers of Game Theory*, (ed. by K. Binmore, A. Kirman, and A. Tani), Cambridge, MA: MIT Press.

** ROLDAN, P. (2014): "Global Games in Macroeconomics," working paper.

ANGELETOS, G.-M., AND I. WERNING (2006): "Crises and Prices: Information Aggregation, Multiplicity and Volatility," *American Economic Review*, 96, 1721–1737. [715,719]

CHAMLEY, C. (1999): "Coordinating Regime Switches," *Quarterly Journal of Economics*, 114, 869–905.

CHAMLEY, C. (2003): "Dynamic Speculative Attacks," *American Economic Review*, 93, 603–621.

MORRIS, S., AND H. S. SHIN (1998): "Unique Equilibrium in a Model of Self-Fulfilling Currency Attacks," *American Economic Review*, 88, 587–597.

EDMOND, C. (2013): "Information Manipulation, Coordination, and Regime Change," *Review of Economic Studies*, 80, 1422–1458.

ANGELETOS, G.-M., HELLWIG, C. and PAVAN, A. (2006), "Signaling in a Global Game: Coordination and Policy Traps," *Journal of Political Economy*, 114, 452–484.

HELLWIG, C. (2002), "Public Information, Private Information, and the Multiplicity of Equilibria in Coordination Games," *Journal of Economic Theory*, 107, 191–222.

HELLWIG, C., MUKHERJI, A. and TSYVINSKI, A. (2006), "Self-Fulfilling Currency Crises: The Role of Interest Rates," *American Economic Review*, 96, 1769–1787.