

EC 7741.2: Graduate Microeconomic Theory
Game Theory and Information Economics

Spring 2026

Instructor: M. Utku Ünver

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Class Hours: Tu. 1:00 – 2:50 pm at McGuinn Hall 30 & Th. 1:00 – 2:50 pm at Maloney Hall 313
Office Hours: Th. 3:15 – 4:45 pm ET

TA: Bahadır Ülgey
Problem Session Hours: Wednesdays after 5:30 when homework is due or at other occasions that will be announced ahead of time at Maloney 313

Course Objectives: This is a game theory and information economics module in the Graduate Microeconomic Theory sequence. The aim of the course is to build a solid background for economics PhD students in game theory and information economics.

It is equally targeted to students who would like to do applied or theoretical work in the future in economics or other related fields. This course's exam and homework questions will often not have algorithmic, one-size-fits-all solutions.

Besides the solid conceptual background, the economic modeling and analytical solution approach that one takes in solving economics problems is an important skill you will gain from this course if you approach the course correctly: thus, the exam-taking experience and homework solving, as well as the problem solving yourself, are also an important part of the learning experience in this course, besides lectures and studying the material.

Teaching Method:

- Lectures.
- Self-study.
- Solving homework assignments and other problems.
- Problem sessions held by your TA.

Lectures:

- Students are expected to come to each class by reading the coming week's material. Print out the class slides or use a tablet smart device. The class slides are provided to reduce your note-taking burden. But lecture note-taking will be needed on those slides or additional blank paper.
- Attendance is necessary. Please communicate with me if you cannot attend class.
- Participation during the lectures is very much encouraged with questions and answers to my questions. The stupidest question is the question that is not asked.
- **Please bring name tags to the class for each and every one**, so that I can learn your names quickly (although I am very bad at calling names during class instead of saying just "yes" when somebody raises a hand, I will try my best; by the way, I am learning your name in the background).

Homework Assignments and Problem Sessions:

- Problem solving is essential for improving one's understanding of microeconomic tools and concepts. Regular homework exercises will be assigned. There will be 5 or 6 homework assignments.
- You can work in groups of at most two students for the homework assignments. Everybody should indicate how they solved the questions on their turned-in assignments and return their individual assignments.
- **Pencil-written PDF** or **LaTeX-formatted PDF** are the only two formats to be used in submitting homework assignments.
- Your TA will hold problem sessions in which he will solve examples or exercises from the homework assignments. You will turn in your homework assignments to him at the beginning of the problem session or by e-mail. He will organize the sessions.
- Solutions to the homework assignments will be provided after the exams are turned in.
- You can ask questions by e-mail, some questions cannot be answered through e-mail, and some can be. I will do my best to respond.

Study Guide:

- Read lecture notes and also chapters from the textbooks/articles, as they may have more explanation usually than lectures and they can complement what I am trying to achieve in course notes/slides. Tadelis' book is very good to read and enjoy, especially if you are a newcomer to game theory.
- Solving homework problems by yourself or with, at most, one friend is very helpful. In solving them, LLM- or AI-generated help is strongly discouraged for your success in the exam and comps.
- There will be plenty of problems from previous years' comprehensive exams and final exams available on Canvas. While studying, try solving these questions without checking the answers and without AI-generated help. Note that the difficulty level of questions has a high variance.
- I also recommend solving questions from the books mentioned, they are usually very good.

Final Exam and Grading:

- The final exam will be on Thursday, May 7, 2026, at 9:30 am-12:30 pm.
- You have to take the exam; if you fail to do so and do not provide me with a valid excuse ahead of time, your exam score will be zero.
- Use **lead pencil** and eraser while handwriting, please, in your assignments and the exam. I personally think **lead pencil**, not the ink pen, is one of the most important discoveries of humankind. You can eat "snacks" during the exam, besides soft beverages, and use an **old-fashioned** calculator.

Course Materials:

1. Course notes/slides (provided as a PDF on Canvas, will be updated periodically)
2. ***Microeconomic Theory***, Andreu Mas-Colell, Michael Whinston, and Jerry Green (MWG)
3. ***Game Theory: An Introduction***, Steven Tadelis (recommended to be bought, great book, very complementary)
4. ***A Course on Game Theory***, Martin Osborne and Ariel Rubinstein (freely available for download, game theory part mostly follows this and the above book)
5. ***Advanced Microeconomics***, Geoffrey Jehle and Philip Reny (one chapter is provided on Canvas, information economics mostly follows this chapter)
6. ***Mechanism Theory***, Matthew O. Jackson* (mechanism design follows this survey article[1] and MWG mostly)

[1] An abridged version of this appears in Optimization and Operations Research, edited by Ulrich Derigs, in the Encyclopedia of Life Support Systems, EOLSS Publishers: Oxford UK, (http://www.eolss.net), 2003.

Course Outline:

- Normal-Form Games and Solutions through Common Knowledge of Rationality
- Nash Equilibrium
- Extensive-Form Games with Perfect Information
- Repeated Games
- Normal-Form Games with Incomplete Information
- Extensive-Form Games with Imperfect Information and Signaling Theory
- Adverse Selection and Signaling & Screening Solutions
- Moral Hazard and The Principal–Agent Solution
- Mechanism Theory
- Dominant-Strategy Mechanisms
- Bayesian Mechanisms

Statement on Academic Integrity:

The pursuit of knowledge can proceed only when scholars take responsibility and receive credit for their work. Recognition of individual contributions to knowledge and of the intellectual property of others builds trust within the University and encourages the sharing of ideas that is essential to scholarship. Similarly, the educational process requires that individuals present their own ideas and insights for evaluation, critique, and eventual reformulation. Presentation of others' work as one's own is not only intellectual dishonesty, but it also undermines the educational process.

Academic integrity is violated by any dishonest act which is committed in an academic context including, but not restricted to the following:

CHEATING is the fraudulent or dishonest presentation of work. Cheating includes but is not limited to: the use or attempted use of unauthorized aids in examinations or other academic exercises submitted for evaluation; fabrication, falsification, or misrepresentation of data, results, or sources for papers or reports; copying from another student's work; actions that destroy or alter the work of another student; unauthorized cooperation in completing assignments or during an examination; the use of purchased essays, term papers, or preparatory research for such papers; submission of the same written work in more than one course without prior written approval from the instructors involved; dishonesty in requests for make-up exams, for extensions of deadlines for submitting papers, and in any other matter relating to a course; and work generated through unsanctioned and/or undocumented artificial intelligence (A.I.) assistance.

PLAGIARISM is the act of taking the words, ideas, data, illustrations, or statements of another person, program, or source, and presenting them as one's own. This includes using the assistance of artificial intelligence (A.I.) text generators to perform central requirements of an assignment (i.e. reading, synthesizing, interpreting, writing, coding, programming, etc.) without both the explicit permission of the instructor and complete attribution and citation of A.I. assisted components. Each student is responsible for learning and using

proper methods of paraphrasing, quotation, footnoting, and other forms of citation, to ensure that the original author, speaker, illustrator, or source of the material used is clearly acknowledged.

COLLUSION is defined as assistance or an attempt to assist another student in an act of academic dishonesty. Collusion is distinct from collaborative learning, which may be a valuable component of students' scholarly development. Acceptable levels of collaboration vary in different courses, and students are expected to consult with their instructor if they are uncertain whether their cooperative activities are acceptable.

Students have a responsibility to maintain high standards of academic integrity in their own work, and thereby to maintain the integrity of their degree. It is their responsibility to be familiar with, and understand, the University policy on academic integrity. Graduate and professional students should refer to their department or school for procedures for adjudicating alleged violations of academic integrity. Penalties for students found responsible for violations may depend upon the seriousness and circumstances of the violation, the degree of premeditation involved, and/or the student's previous record of violations.

For the full policy, see the University Catalog: Academic Integrity Policy. Academic integrity is a very important matter. If you have any questions about what is allowed or not allowed, please discuss the matter immediately with the instructor.

Disability Statement:

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Disability Services Office, Office of the Dean of Students, Maloney Hall, Suite 448, Phone: 617-552-3470, Email: disabsrv@bc.edu. Also see https://www.bc.edu/bc-web/offices/studentaffairs/sites/dean-of-students/student-support/disability-services.html.