

Economics 9452: Advanced Microeconomic Theory II

Spring 2023

Class time and location: Tuesday/Thursday 2-3:15pm, Locust Street Building E204A

Instructor: Oksana Loginova, Locust Street Building E217, loginovao@missouri.edu

Office hours: by appointment only

Course description: Microeconomic theory is a set of analytical tools designed to help us understand economic phenomena. The basic assumptions that underlie microeconomic theory are that individuals pursue well-defined objectives, take into account their knowledge of the environment and in strategic situations take into account their expectations of other individuals' behavior. This course is the continuation of Economics 9451. Topics include game theory, imperfect markets, information economics, mechanism design, and auction theory.

Textbooks: The main sources for this class are Mas-Colell, Whinston, and Jerry Green, *Microeconomic Theory*, Oxford University Press, 1995, Fudenberg and Tirole, *Game Theory*, MIT Press, 1991, and Gibbons, *Game Theory for Applied Economists*, Princeton University Press, 1992. The course will also draw on assorted papers, as listed below.

Course requirements and grading: There will be nine homework assignments, a midterm exam (Tuesday, March 14, 2-3:15pm) and a comprehensive final exam (Monday, May 8, 7:30-9:30am). All exams will be of the problem-solving type. Your grades will depend on your performance on the homework assignments (25%), the midterm exam (35%) and the final exam (40%).

Canvas site: The course information, homework assignments, extra practice materials and announcements (including any changes made regarding the class) can be found on the course Canvas site. You may also check your homework and exam scores on the course Canvas site.

Topics:

Static Games of Complete Information

- Basic Theory
 - normal-form games
 - dominant and dominated strategies
 - Nash equilibrium and its existence
- Applications: Static Oligopoly Games
 - Cournot and Bertrand competition
 - Hotelling linear and Salop circular city models [1]
 - Spokes model [2]
 - strategic complements and substitutes [3]
 - spatial competition [4], [5]

- symmetric full-information all-pay auction [6] (if time permits)

Dynamic Games of Complete Information

- Basic Theory and Applications
 - extensive-form games
 - backwards induction and subgame perfect Nash equilibrium
 - a simple model of market entry
 - a two-period introduction to bank runs [7]
 - Stackelberg duopoly model
- Repeated Games
 - finitely repeated games
 - infinitely repeated games and the Folk theorem
 - collusion between duopolists in a supergame [8]
- Principle-Agent Problem
 - hidden actions/ moral hazard

Static Games of Incomplete Information

- Basic Theory and Applications
 - Bayesian Nash equilibrium
 - mechanism design and the revelation principle
 - second-degree price discrimination
- Auction Theory
 - symmetric independent private values model [9]
 - Vickrey auction
 - first-price sealed-bid auction
- Adverse Selection
 - Lemons problem [10]
 - market for used cars

Dynamic Games of Incomplete Information

- Basic Theory and Applications
 - perfect Bayesian equilibrium
 - Spence's model of job-market signaling [11]
- Other Applications of Perfect Bayesian Equilibrium (if time permits)
 - a two-period introduction to Coasian dynamics [12]

References (not in alphabetic order)

1. Salop, Steven C., 1979, "Monopolistic Competition with Outside Goods," *Bell Journal of Economics*, 10(1), pp. 141-156

2. Chen, Yongmin, and Michael H. Riordan, 2007, "Price and Variety in the Spokes Model," *Economic Journal*, 117(522), pp. 897-921
3. Bulow, Jeremy I., John D. Geanakoplos and Paul D. Klemperer, 1985, "Multi-market Oligopoly: Strategic Substitutes and Complements," *Journal of Political Economy*, 93(3), pp. 488-511
4. Hotelling, Harold, 1929, "Stability in Competition," *Economic Journal*, 39(153), pp. 41-57
5. Eaton, B. Curtis, and Richard G. Lipsey, 1975, "The Principle of Minimum Differentiation Reconsidered: Some New Developments in the Theory of Spatial Competition," *Review of Economic Studies*, 42(1), pp. 27-49.
6. Baye, Michael R., Dan Kovenock, and Casper G. de Vries, 1996, "The All-Pay Auction with Complete Information," *Economic Theory*, 8(2), 291-305
7. Diamond, Douglas W., and Philip H. Dybvig, 1983, "Bank Runs, Deposit Insurance, and Liquidity," *Journal of Political Economy*, 91(3), pp. 401-419
8. Rotemberg, Julio J., and Garth Saloner, 1986, "A Supergame-Theoretic Model of Price Wars during Booms," *American Economic Review*, 76(3), pp. 390-407
9. Bulow, Jeremy, and John Roberts, 1989, "The Simple Economics of Optimal Auctions," *Journal of Political Economy*, 97(5), pp. 1060-1090
10. Akerlof, George A., 1970, "The Market for "Lemons": Quality Uncertainty and the Market Mechanism," *Quarterly Journal of Economics*, 84(3), pp. 488-500
11. Spence, Michael, 1973, "Job Market Signaling," *The Quarterly Journal of Economics*, 87(3), pp. 355-374
12. Coase, R. H., 1972, "Durability and Monopoly," *Journal of Law and Economics*, 15(1), pp. 143-149

Makeup exams: Students are expected to take exams at the times scheduled in the syllabus. Possible exceptions include serious illness, family emergency, or a legitimate conflict with recognized University activities. If these apply, you must contact me to request a makeup. Make these arrangements as soon as you know of the conflict – before the exam if possible.

Academic integrity: Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor.

Students with disabilities: If you anticipate barriers related to the format of requirements of this course, or if you have emergency medical information to share with me, please

let me know as soon as possible. If disability related accommodations are necessary (for example, a note taker, extended time on exams), please establish an accommodation plan with the Disability Center (<http://disabilitycenter.missouri.edu/>), S5 Memorial Union, 573-882-4696, and then notify me of your eligibility for reasonable accommodations.

Intellectual pluralism: The University community welcomes intellectual diversity and respects student rights. Students who have questions or concerns regarding the atmosphere in this class (including respect for diverse opinions) may contact the departmental chair or divisional director, the Office of Academic Integrity (<http://oai.missouri.edu/>), or the MU Equity Office (<http://equity.missouri.edu/>). All students will have the opportunity to submit an anonymous evaluation of the instructor at the end of the course.

Nondiscrimination policy The University of Missouri is an Equal Opportunity/ Affirmative Action institution and does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, age, disability, or status as a protected veteran.