Universität Regensburg

Advanced Microeconomics

Dr. Aleksandr Alekseev (lecturer)
Florian Greindl (tutor)

Math Boot Camp

Time (lecture):	15.10 9:00–12:00, 16.10 9:00–12:00, 17.10 10:15–11:45, 28.10 16:15–17:45
Place (lecture):	H26 or Zoom
Time (tutorial):	15.10 14:00–16:00, 16.10 14:00–16:00, 17.10 14:00–16:00
Place (tutorial):	H26

Regular Classes

Time (lecture):	Thursdays 9:00–12:00
Place (lecture):	H26 or Zoom
Time (tutorial):	Mondays 8:00–10:00 and 16:00-18:00
Place (tutorial):	H26
Email:	aleksandr.alekseev@ur.de florian.greindl@wiwi.uni-regensburg.de
Office hours:	RWL 5.18 by appointment

Content

The course gives a rigorous introduction to the fundamental concepts and models of microeconomic theory. It consists of two parts.

The first part on Mathematical Methods of Microeconomics is part of the two-week math boot camp at the beginning of the semester that is jointly taught by the instructors of the three compulsory courses in "Methods in Economics". This part introduces students to mathematical methods that are essential for the analysis of microeconomic models, and we will review a number of central concepts. Students are expected to present solutions to exercises in class.

The second part of the course introduces students to central concepts of game theory, incentives and contract theory, and behavioral economics. These tools play a major role in modern microeconomics. Again, students will be expected

to present solutions to exercises in class.

Learning Objectives

At the end of the course students have the knowledge and analytical skills necessary to follow specialized courses in microeconomics and to do independent research in microeconomics. To achieve this, students must prepare for the class by working through the textbooks and additional readings and to solve the assigned problem sets.

Assessment

The assessment consists of three parts:

1. 10 percent: Presentation of solutions to problem sets in class.
2. 15 percent: Midterm exam (45 minutes, mid-December, the precise date will be announced in due course) during lecture hours. All the material covered till the midterm exam will be relevant. There is no option to repeat the midterm exam.
3. 75 percent: Final exam (90 minutes) at the end of the winter term. All the material covered till the final exam will be relevant.

Details on the exams

All the exams, will (i) be closed book, (ii) be in English, where you, however, will be allowed to answer in either English or German, and (iii) contain some questions relating to the first part of the course on Mathematical Methods in Microeconomics.

Outline

Mathematical Methods of Microeconomics

1. Elements of Logic and Methods of Proof
2. Set Theory and Some Existence Results
3. Calculus
4. Optimization

Key Reference: Jehle/Reny (2011) (Mathematical Appendix), Sydsaeeter et al. (2005)

Game Theory

1. Static Games with Complete Information
2. Extensive Games with Complete Information
3. Static Games with Incomplete Information
4. Extensive Games with Incomplete Information

Key Reference: Tadelis (2013)

Incentives and Contracts

1. Incomplete Information (Adverse Selection)
2. Hidden Action (Moral Hazard)
3. Incomplete Contracts and the Hold-Up Problem

Key Reference: Laffont/Martimort (2009)

Behavioral Economics

1. Basic Experimental Settings and Robust Evidence
2. Some Basic Behavioral Theories

Key Reference: Holt (2019)

Some Suggested Readings

General Textbooks on Advanced Microeconomics

Jehle, A. J. and P. J. Reny (2011) *Advanced Microeconomic Theory*, Prentice Hall.

Kreps, D. M. (1990) *A Course in Microeconomic Theory*, Princeton University Press

MasColell, A., M. D. Whinston and J. R. Green (1995) *Microeconomic Theory*, Oxford University Press

Textbooks on Mathematics for Economists

Sydsaeter, K., P. Hammond, A. Seierstrad, and A. Strom (2008) *Further Mathematics for Economic Analysis*, Pearson.

Simon, C. P. and L. Blume (1994) *Mathematics for Economists*, Norton & Company, New York.

Sydsaeter, K., P. Hammond, A. Strom, and A. Carvajal (2022) *Essential Mathematics for Economic Analysis*, Pearson.

Jehle, A. J. and P. J. Reny (2011) *Advanced Microeconomic Theory*, Prentice Hall. (Mathematical Appendix)

MasColell, A., M. D. Whinston and J. R. Green (1995) *Microeconomic Theory*, Oxford University Press, New York (Mathematical Appendix).

Textbooks on Game Theory

Fudenberg, D. and J. Tirole (1991) *Game Theory*, MIT Press

Osborne, M. J. (2004) *An Introduction to Game Theory*, Oxford University Press

Osborne, M. J. and A. Rubinstein (1994) *A Course in Game Theory*, MIT Press

Tadelis, S. (2013) *Game Theory: Introduction*, Princeton University Press

Textbooks on Incentives and Contract Theory

Bolton, P. and M. Dewatripont (2005) *Contract Theory.* MIT Press

Laffont, J. J. and D. Martimort (2009) *The Theory of Incentives: The Principal-Agent Problem*, Princeton University Press

Salanie, B. (1997) *The Economics of Contracts.* MIT Press

Schweizer, U. (1999) *Vertragstheorie.*, Mohr Siebeck

Books on Behavioral Economics

Holt, C. A. (2019) *Markets, Games, and Strategic Behavior: An Introduction to Experimental Economics*, Princeton University Press; 2nd Edition.

Moffat, P. (2015) *Experimetrics: Econometrics for Experimental Economics*, Red Globe Press; 1st Edition.

Camerer, C. F. (2003) *Behavioral Game Theory*, Princeton University Press.

Plott, C. R., and V. L. Smith (2008) *The Handbook of Experimental Economics Results*, North Holland Press.

Roth, A. E., and J. H. Kagel (1997) *The Handbook of Experimental Economics*, Princeton University Press.

Course Policies

1. This course syllabus provides a general plan for the course, deviations may be necessary

2. Your constructive assessment of this course plays an indispensable role in shaping education in the University. Upon completing this course, please take time to fill out the course evaluation

3. If you have read the syllabus up to this point, send me an email with "Advanced Microeconomics" in the subject line and "Syllabus" in the body

4. Students are expected to behave properly in class so as not to interfere with the learning environment of others in the classroom. This includes showing up for class on time, not leaving early (or at least being quiet if either of those do happen), not talking to neighbors in class, not using cell phones during class, etc. All cell phones and other noise-making devices must be turned off during exams. Students not adhering to these guidelines may be asked to leave the class and may be subject to an administrative withdrawal (depending on the severity of the infraction).