Wirtschafts- und Sozialwissenschaftliche Fakultät
Departement für Volkswirtschaftslehre

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Advanced Microeconomics (MA)

Fall 2022

Content

Description   Microeconomics studies the decisions of individuals and firms and their interaction in markets. This course is devoted to the basic methods of microeconomic analysis. It covers decision theory, household theory, and game theory. While decision theory deals with individual's choices, game theory analyzes situations where decision makers influence each other.

This course provides the basis for further courses in economics as well as for own work, e.g. writing a Master's thesis in the field of microeconomics.

Training Objectives   In this course students will

a) learn microeconomic methods

b) learn game-theoretic methods

c) deepen their knowledge in microeconomics

Syllabus

Part I *"Deep Micro"*

1. Introduction
2. Demand
3. Supply
4. General Equilibrium
5. Market Failure

Part II *Game Theory*

1. Static games with complete information
2. Dynamic games with complete information
3. Static Games with incomplete information
4. Dynamic games with incomplete information

Organisation

In part I *Deep Micro* the lectures are given by Berno Buechel and the exercise tutorials are held by Bénédicte Droz. In part II *Game Theory* the lectures are given by Holger Herz and the exercise tutorials are held by Francisco Gomez-Martinez.

For questions please use the Q&A forum on moodle or write an email to benedicte.droz@unifr.ch or francisco.gomezmartinez@unifr.ch.

Date	Time	Content
Thu 22.09.2022	8:15 - 9:15	Lecture I-1: Introduction
	9:30 - 11:00	Lecture I-2: Demand
Thu 29.09.2022	8:15 - 9:15	Exercises
	9:30 - 12:00	Lecture I-2: Demand
Thu 06.10.2022	8:15 - 9:15	Exercises
	9:30 - 12:00	Lecture I-3: Demand
Thu 13.10.2022	8:15 - 9:15	Exercises
	9:30 - 12:00	Lecture I-3: Supply
Thu 20.10.2022	8:15 - 9:15	Lecture I-3: Supply
	9:30 - 12:00	Lecture I-4: General Equilibrium
Thu 27.10.2022	8:15 - 9:15	Exercises
	9:30 - 12:00	Lecture I-5: Market Failure
Thu 03.11.2022	8:15 - 10:00	Exercises
	10:15 - 12:00	Lecture II-1: Static Games with Complete Information
Thu 10.11.2022	8:15 - 10:00	Lecture II-1: Static Games with Complete Information
	10:15 - 12:00	Lecture II-2: Dynamic Games with Complete Information
Thu 17.11.2022	8:15 - 10:00	Exercise: Nash Equilibrium
	10:15 - 12:00	Lecture II-2: Dynamic Games with Complete Information
Thu 24.11.2022	8:15 - 10:00	Exercise: Mixed Strategies
	10:15 - 12:00	Lecture II-3: Static Games with Incomplete Information
Thu 01.12.2022	8:15 - 10:00	Exercise: Subgame Perfection
	10:15 - 12:00	Lecture II-3: Static Games with Incomplete Information
Thu 08.12.2022		No lecture (public holiday)
Thu 15.12.2022	8:15 - 10:00	Exercise: Repeated Games
	10:15 - 12:00	Lecture II-: Dynamic Games with Incomplete Information
Thu 22.12.2022	8:15 - 10:00	Exercise: Static Games with Incomplete Information
	10:15 - 12:00	Exercise: Dynamic Games with Incomplete Information

Examination

Final Exam   This class is graded through an end of semester written exam. The exam is 120 minutes long and covers both parts equally. The exam will either be in person or online, depending on latest guideline from the University.

Supporting Materials

Lecture & Exercises   All materials required for the class are available on Moodle.
The best preparation material for the final exam is the material shared during the lecture and exercises. Students are particularly advised to independently prepare for the exercise tutorials.

Reference Books   The main textbooks for this course are:

> JEHLE G., RENY. P. (3rd ed., 2011) *Advanced Microeconomic Theory*, Financial Times/Prentice Hall.

> TADELIS, S. (2013) *Game Theory: An Introduction*, Princeton University Press.

There are many more textbooks on these topics. We can also recommend the following ones.

> GIBBONS, R. (1992) *A Primer in Game Theory*, Pearson Education.

> MAS-COLELL, A., WHINSTON, M. D., & GREEN, J. R. (1995) *Microeconomic Theory*, Oxford University Press.

> OSBORNE, M. (1994) *An Introduction to Game Theory*, MIT Press.

> OSBORNE, M., & RUBINSTEIN, A. (1994) *A Course in Game Theory*, MIT Press.

> RUBINSTEIN, A. (2006) *Lecture Notes in Microeconomic Theory*, Princeton University Press.

Prerequisites   From the Bachelor studies basic knowledge in the following topics is expected.

- Sets and mappings, e.g. functions

- Calculus, e.g. derivatives

- Optimization, e.g. Lagrange

- Choice under uncertainty, e.g. expected values

- Probability theory, e.g. Bayes' rule

Most textbooks cited above provide helpful summaries of these topics, usually in their mathematical appendices.