

# Advanced Microeconomics (MA)

Fall 2023

## 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 held by Berno Buechel and the exercise tutorials are given by Bénédicte Droz. In part II *Game Theory* the lectures are held by Holger Herz and the exercise tutorials are given by Francisco Gomez-Martinez. The room is PER 21, G230.

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

<b>Date</b>	<b>Time</b>	<b>Content</b>
Thu 21.09.2023	8:15 - 9:15	Lecture I-1: Introduction
	9:30 - 12:00	Lecture I-2: Demand
Thu 28.09.2023	8:15 - 9:15	Exercises
	9:30 - 12:00	Lecture I-2: Demand
Thu 05.10.2023	8:15 - 9:15	Exercises
	9:30 - 12:00	Lecture I-2: Demand
Thu 12.10.2023	8:15 - 9:15	Exercises
	9:30 - 12:00	Lecture I-3: Supply
Thu 19.10.2023	8:15 - 9:15	Exercises
	9:30 - 12:00	Lecture I-3: Supply
Thu 26.10.2023	8:15 - 9:15	Exercises
	9:30 - 12:00	Lecture I-4: General Equilibrium
Thu 02.11.2023	8:15 - 10:00	Exercises
	10:15 - 12:00	Lecture I-5: Market Failure
Thu 09.11.2023	8:15 - 10:00	Lecture II-1: Static Games with Complete Information
	10:15 - 12:00	Lecture II-1: Static Games with Complete Information
Thu 16.11.2023	8:15 - 10:00	Lecture II-2: Dynamic Games with Complete Information
	10:15 - 12:00	Exercise: Nash Equilibrium
Thu 23.11.2023	8:15 - 10:00	Lecture II-2: Dynamic Games with Complete Information
	10:15 - 12:00	Exercise: Mixed Strategies
Thu 30.11.2023	8:15 - 10:00	Lecture II-3: Static Games with Incomplete Information
	10:15 - 12:00	Exercise: Subgame Perfection
Thu 07.12.2023	8:15 - 10:00	Lecture II-4: Dynamic Games with Incomplete Information
	10:15 - 12:00	Exercise: Repeated Games
Thu 14.12.2023	8:15 - 10:00	Lecture II-4: Dynamic Games with Incomplete Information
	10:15 - 12:00	Exercise: Static Games with Incomplete Information
Thu 21.12.2023	8:15 - 10:00	Exercise: Dynamic Games with Incomplete Information
	10:15 - 12:00	Exercise: Questions and Exam Preparation

## 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. (2023) *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.