

## Microeconomics I

Course title – Intitulé du cours	Microeconomics I
Level / Semester – Niveau /semestre	S1
School – Composante	Ecole d'Economie de Toulouse, M2 ETE
Teacher – Enseignant responsable	Thomas Mariotti
Other teacher(s) – Autre(s) enseignant(s)	François Salanié
Other teacher(s) – Autre(s) enseignant(s)	TA: Dario Gori
Other teacher(s) – Autre(s) enseignant(s)	
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Other teacher(s) – Autre(s) enseignant(s)	
Lecture Hours – Volume Horaire CM	36
TA Hours – Volume horaire TD	15
TP Hours – Volume horaire TP	
Course Language – Langue du cours	English
TA and/or TP Language – Langue des TD et/ou TP	English

### **Teaching staff contacts:**

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### **Course Objectives:**

This class aims at providing fundamental tools to every economist. It focuses on General Equilibrium Theory: consumer, producer, optima, equilibria, welfare theorems, risk and time, expected utility, and finally market failures.

We expect students to learn definitions, make some formal proofs, enjoy the generality of results, and discover how to use them.

### **Prerequisites:**

A bit of elementary mathematics: analysis, derivatives, simple maximization programs, convexity, and rigorous proof-making above all. Some short mathematical notes will be given to students when needed: topology, monotone comparative statics, envelope theorem, maximum theorem, convexity, optimization, fixed point theorems.

### **Practical information about the sessions:**

Be on time, be enthusiastic, participate.

### **Grading system:**

20 points overall: two homework (2 points each), one midterm (6 points), one final exam (10 points).

### **Bibliography:**

We strongly recommend that each student buy the following book:

"Microeconomic Theory", by Andreu Mas-Colell, Michael Whinston and Jerry Green

because it is the most complete, and it is universally used. But the following books are also very good investments:

- "Microeconomic Foundations I", by David Kreps (more mathematical)
- "Advanced Microeconomic Theory", by Geoffrey Jehle and Philip Reny (more modern topics)
- "Lectures on Microeconomic Theory", by Edmond Malinvaud (exists also in French) (precise and clever);
- "Theory of value", by Gérard Debreu (short, focused, historical value).

### **Session planning (24 sessions of 1.5h):**

1. Preliminaries: competition, price-taking, and partial equilibrium. Toward a theory of value, both normative and positive.

2-3. Goods, technologies, firms:

Definitions: good, production set

The firm: profit function, supply and demand functions, elasticities, duality, cost function

Typology, examples

Price-taking and aggregation

Afriat theorem for firms, the law of supply

4.. Choice, preference, utility:

Axioms, representation theorem, utility, ordinality

Typology, examples

5-6-7. The consumer's problem:

Definitions: consumption set, budget constraint, demand functions, elasticities, indirect utility

Typology, examples, the case of surplus

Afriat theorem for consumers, revealed preferences, the law of demand

Duality: expenditure minimization, Hicksian demand functions

Revenue effect, substitution effect, comparative statics, complementarity and substitution

Integrability, Slutsky equation

8-9. Welfare

Evaluation of economic changes: compensating and equivalent variations, surplus

Aggregation of demand: positive, normative

Pareto Optima

welfare functionals, Pareto weights, typology, examples

10-11-12-13. General equilibrium in exchange economies

Edgeworth box

Excess demand, Equilibrium existence and multiplicity

Welfare theorems

Application: replication and core

14-15-16. General equilibrium theory

A few general results, for which proofs are only sketched.

Application: matching with transferable utility

17. Risk and time

Contingent goods, information, learning, rational expectations, sunspots, Finance (spot, forward, options, interest rate)

18-19-20. Expected utility

Axioms, representation theorem

Utility for money, risk aversion

Risk Dominance (FOSD, SOSD)

Optimal risk-sharing, mutuality principle

21-22-23-24. Market failures

Externalities and public goods

First-best policies.