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## Advanced Microeconomics

The aim of this course is to give students a solid foundation of formal microeconomic modeling. For this reason we will focus on standard microeconomic topics starting from consumer and producer theory, general equilibrium analysis. We will also cover in details choice under uncertainty. Recall that other important microeconomic topics are covered in my separate lectures: general equilibrium (233460-0089), industrial organization (230250-0089), game theory (222940-0089) or welfare economics (233190).

Formally we will follow **lectures, problems and notation** from **QEM program** taught a.o. in Barcelona, Paris, Venice and LLN. Some new stuff will be posted consecutively. **All that can be found on our webpage**. This material is essential to prepare for a December exam (coordinated with Paris).

A standard textbook at this level is Mas-Colell, Whinston, and Green (1995) and two alternative are Kreps (2012) and Jehle and Reny (2011). Additionally you may follow selected chapters from Rubinstein (2006). The course aims to be formal hence students are expected to be at least not afraid of basic mathematical tools including: calculus, (smooth) constrained optimization, convex analysis or linear algebra. Knowledge of mathematical appendix of Mas-Colell, Whinston, and Green (1995) should suffice.

Final result is composed from Your: common (Paris) exam (40%) in December, homework (30%) and midterm (Warsaw) exam (30%). Acceptance for QEM is based on ranking lists based on the above criteria.

1. **Preferences and consumer choice**. Consumption set, preferences, budget sets. Axioms of revealed preferences and law of demand.
   **Readings:** Mas-Colell, Whinston, and Green (1995) 1-2.

2. **Classical demand theory 1**. Existence of utility. Utility maximization.
   **Readings:** Mas-Colell, Whinston, and Green (1995) 3.

3. **Classical demand theory 2**. Expenditure minimization.
   **Readings:** Mas-Colell, Whinston, and Green (1995) 3.

4. **Aggregate demand**. Aggregate demand and weak axiom. Existence of representative consumer.
   **Readings:** Mas-Colell, Whinston, and Green (1995) 4.

5. **Expected utility**. von Neumann-Morgenstern Expected Utility
   **Readings:** Mas-Colell, Whinston, and Green (1995) chapter 6A-B

6. **Risk and uncertainty**. Measuring risk
   **Readings:** Mas-Colell, Whinston, and Green (1995) chapter 6C-D

7. **Production theory 1**. Production set. Profit maximization
   **Readings:** Mas-Colell, Whinston, and Green (1995) 5.

8. **Production theory 2**. Cost minimization. Aggregation.
   **Readings:** Mas-Colell, Whinston, and Green (1995) 5.

9. **General equilibrium 1**. Examples, exchange economy (Edgeworth diagram) i production (Robinson island). Assumptions on preferences and technology. Definition of feasible and Pareto optimal allocation. Intuitive definition of Walrasian equilibrium. Existence of equilibrium an Arrow's example.
   **Readings:** Mas-Colell, Whinston, and Green (1995): 15, Bewley (2007): 2

10. **General equilibrium 2**. Defining economy and its equilibrium. Welfare theorems. Equilibrium with transfers. Equilibrium vs. quasi-equilibrium. First and second welfare theorems. Proofs.
    **Readings:** Mas-Colell, Whinston, and Green (1995): 16

11. **General equilibrium 3**. Existence of equilibrium. Debreu-Gale-Kuhn-Nikaido lemma and its weak version. Proof.

**Final exam**, Dec,

Both **exams** are based on topics and problems discussed during the course and posted on the web pages of the instructors. The **homework** list will be posted consecutively on the web. It is your responsibility to get it from there. Homework is due in class on the due date. Remember that homework is the most valuable part of the course. Always write correct English with complete sentences. You may talk about the problems with other students, but you must write up your own solutions in your own words.

We welcome questions at any time. Please don't hesitate to ask us during class if there is something that you don't understand or that you want to discuss. (The only exception is a question about the grading of your homework or exam paper. Please ask these questions before or after class, or in office hours.) You may also ask questions in office hours, or any other time that you catch us in my office. You may also ask questions by email.

While studying you may find useful to use various scientific paper browsers like e.g.: `econpapers.repec.org`, `ideas.repec.org` and `scholar.google.com`; article databases, e.g. `www.jstor.org`, `www.sciencedirect.com` and `www.nber.org`.

We invite all interested in economic theory to participate in **Warsaw Economic Seminar** (`sites.google.com/site/warsaweconseminars/`).

# References

BEWLEY, T. F. (2007): *General Equilibrium, Overlapping Generations Models, and Optimal Growth Theory*. Harvard University press.

JEHLE, G. A., AND P. J. RENY (2011): *Advanced Microeconomic Theory*. Prentice Hall.

KREPS, D. M. (2012): *Microeconomic Foundations I: Choice and Competitive Markets*. Princeton University Press.

MAS-COLELL, A., M. D. WHINSTON, AND J. R. GREEN (1995): *Microeconomic theory*. Oxford University Press.

RUBINSTEIN, A. (2006): *Lecture Notes in Microeconomic Theory: The Economic Agent*. Princeton.