

École Polytechnique Fédérale de Lausanne
College of Management of Technology

SYLLABUS
(Version: 08/09/23)

MGT 621 – Microeconomics

Autumn 2023

September 11/13/15/20/22/25: 1 pm – 5 pm

October 2: 1 pm – 4 pm

Room ODY -1.0021*¹

Instructor

Professor Thomas A. Weber
Operations, Economics and Strategy
EPFL – CDM – ODY 3.01
Phone: +41 21 693 0141
Fax: +41 21 693 0020
Email: thomas.weber@epfl.ch
WWW: <http://econspace.net>

Administrative Assistance

Ms. Ilona Ball
EPFL – CDM – ODY 3.16
Phone: +41 (0)21 693 00 39
Email: ilona.ball@epfl.ch

Course Website

<http://econspace.net/MGT-621.html> [login: 621student; password: TBA in class]

Summary. This course presents a first introduction to microeconomic theory and its applications. It lays the foundation for more advanced courses. The main *objectives* of the course are:

- to provide a calculus-based introduction to models for the rational behavior of individual units of an economy and their interactions;
- to give students an appreciation of how economic models can be used to develop an understanding of real-life phenomena;
- to enable students to address a simple microeconomic problem by structuring it as a formal model, the analysis of which yields useful predictions and insights.

Topics to be covered include the theory of choice, the theory of the firm, partial and general equilibrium, market failure, regulation, and welfare economics.

¹ On September 20: ODY -1.0019.2

Reading. The material in this course is largely contained in the following book. The references therein point to additional literature on the subject.

[PR] PINDYCK, R.S., RUBINFELD, D.L. (2012). *Microeconomics (8th Edition)*, Pearson/Prentice Hall.

This course is taught at a level that is slightly above [PR] in terms of the mathematical tools used. However, PR is an excellent introductory text written by two outstanding economists. I had the pleasure using an earlier version of this book in the first economics graduate course that I took at MIT a while back.

In addition, I recommend that you take a look at the following survey paper on pricing: WEBER, T.A. (2012) “Price Theory in Economics,” in: Özer, Ö., Phillips, R. (Eds.) *Oxford Handbook of Pricing Management*, Oxford University Press, pp. 281—339. A pre-publication version of this chapter is available at <http://ssrn.com/abstract=1270297>

Assessment. Students need to complete a number of homework assignments (problem sets). There will be a final exam as well as a team project.

The final examination covers the whole of the course. The course grade is computed as follows:

$$\text{Grade} = 0.2 (\text{Problem Sets}) + 0.4 (\text{Exam}) + 0.4 (\text{Project}).$$

For all *problem sets* I strongly encourage cooperation. Since some of the analysis can be demanding in terms of the new intuition required, discussing the problems with others is very important. Solutions need to be written up and handed in individually.

Course Website. Go to <http://econspace.net/MGT-621.html> and log in using the username and password provided in class.

Problem Sets. Homework will be assigned about every other class in the form of a problem set. Homework is due at the beginning of class on its due date. **No late homework will be accepted and there is no makeup homework!** Graded homework assignments will be returned in class.

Exams. There will be a *final exam* on October 3, in class. The exam is open-book. **There is no makeup exam!** If you have a justified scheduling conflict, you will have to make an arrangement with the teaching staff by September 23 in class. Any requests made after that day (other than documented emergencies) may or may not be granted.

Class Participation. Your presence and participation in class are essential for gaining mastery of the material.

Project. The project is an integral part of the course and complements the course material. Each student should submit a report of at most 10 pages (excluding the references). For this, provide one newspaper clipping and a write-up of how one could apply some of the concepts in the course to this real-world situation. Please develop a

small model (with computations) that you add to explain exactly how you would apply the concepts (you can make up numbers if necessary to illustrate what you mean). This question will be graded personally by the instructor. Evaluation criteria are the following:

1. Relevance and originality
2. Clarity of expression
3. Quality of synthesizing the concepts (for the chosen application)
4. Academic rigor

A one-page proposal for the project is due in Session 6, with the instructor's feedback to be provided in Session 7 (exam session). The final version of the project is due 4 weeks after the end of the course, on Monday, October 30, before 5 pm, by email to the instructor.

Honor Code.² The Honor Code is the EPFL's statement on academic integrity. It articulates the school's expectations of students and faculty in establishing and maintaining the highest standards in academic work:³

“EPFL has the mission of generating, sharing and utilizing knowledge. It encourages the development of a critical mind and the spirit of innovation within a climate of collaboration, respect and mutual confidence amongst all its members. It respects an ethical charter which, based on concerns shared by all cultures, is in keeping with the international character of EPFL.

In my capacity as a student of EPFL, I actively undertake to:

- *Adhere to the principles of the EPFL ethical charter;*
- *Acknowledge and respect the regulations governing school life;*
- *Respect the EPFL community as a whole and the work accomplished, in particular by favouring constructive dialogue amongst members;*
- *Strive for quality and integrity in my own work, refusing any cheating or plagiarism;*
- *Contribute to the efficiency of teaching and knowledge acquisition by way of a positive attitude;*
- *Respect the institution's infrastructure and its environment;*
- *Use resources provided by EPFL, particularly IT facilities, in an appropriate manner.*

Through my actions and commitment to this Honor Code, I contribute to the impact and reputation of EPFL and thus to respect and value associated with its diplomas.”

Specifically, adhering to the EPFL Honor Code implies that all work in exams and quizzes must be done individually. For homework, students may consult with the teaching assistant and with other students, but must write up solutions independently based on their own understanding. All references and sources (e.g., in the course project)

² For more information, see [here](#) (under 2.3.1, in French)

³ http://polylex.epfl.ch/files/content/sites/polylex/files/recueil_pdf/ENG/2.3.1_ch_code_honor_en.pdf

must be clearly identified and properly referenced. Lastly, *if you work with other students on a problem set, you must acknowledge their names on the front page of your submission.*

Topics. Following is a tentative schedule of topics for this semester.

Tentative Schedule

1. Theory of Choice

- Introduction to Individual Decision Making
- Preferences and Utility Representation
- Consumer Choice
- Demand Theory
- Choice under Uncertainty

PR: Chapters 3 – 5

2. Theory of the Firm

- Production Sets
- Profit Maximization and Cost Minimization
- Market Power

PR: Chapters 6 – 8

3. Markets

- Competitive
- Monopoly
- Oligopoly
- General Equilibrium

PR: Chapters 1 – 2; 9 – 13; 16

4. Market Failure

- Asymmetric Information
- Externalities and Public Goods

PR: Chapters 17 – 18

FINAL EXAM (Monday, October 2, from 1 to 4 pm): Covers all parts of the course.

Background Reading. Although we use PR as our main reference, I recommend a couple of other useful books for occasional background reading if you would like to flesh out the material using complementary texts. *These books are completely optional. You might want to refer to this list after the course has finished, as you become interested in studying specific aspects of economic analysis in greater detail.*

O. General Microeconomics

MAS-COLELL, A., WHINSTON, M.D., GREEN, J.R. (1995). *Microeconomic Theory*, Oxford University Press, Oxford, UK. [Standard reference in economics doctoral programs; encyclopedic in approach and coverage; you should purchase it, if you become more interested in economics.]

KREPS, D.M. (1990). *A Course in Microeconomic Theory*, Princeton University Press, Princeton, NJ. [Good chatty text, which you may want to use as a complement to V and MWG.]

VARIAN, H.R. (1992). *Microeconomic Analysis*, Norton, New York, NY. [Excellent introductory text which contains a small number of practice problems with solutions.]

I. Theory of Choice

INGERSOLL, J.E. (1987). *Theory of Financial Decision Making*, Rowman & Littlefield, Savage, MD. [Classic treatment of financial decision making, including the portfolio problem, and intertemporal choice in finance. Definitely a text that is beyond the scope of MS&E 241, but may serve as a useful reference for those of you interested in finance. It is a standard reference for introductory courses in finance PhD programs.]

KREPS, D.M. (1988). *Notes on the Theory of Choice*, Westview Press, Boulder, CO. [Rigorous introduction to the representation of preferences, which has been derived from notes for a course taught at the Stanford GSB.]

II. Theory of the Firm

CHAMBERS, R.G. (1988). *Applied Production Analysis: A Dual Approach*, Cambridge University Press, Cambridge, UK. [Contains a very detailed discussion of production and cost functions, including the important case of multi-output technologies.]

CHAMBERS, R.G., QUIGGIN, J. (2000). *Uncertainty, Production, Choice, and Agency*, Cambridge University Press, Cambridge, UK. [This text examines the effects of uncertainty on a firm's production choices. I would recommend it only if you happen to have a special interest in this topic.]

III. Partial and General Equilibrium, Market Structure

DEBREU, G. (1959). *Theory of Value*, Yale University Press, New Haven, CT. [One of the very best books you can ever lay your hands on. A classic!]

MAGILL, M., QUINZII, M. (1996). *Theory of Incomplete Markets*, MIT Press, Cambridge, MA. [This book establishes the connection between general equilibrium theory and financial markets. Consider it as a reference, which is beyond this class.]

MCKENZIE, L.W. (2002). *Classical General Equilibrium Theory*, MIT Press, Cambridge, MA. [Rigorous summary of the main results. Covers a lot of material we do not even touch. A reference by a leader in the field.]

SALANIÉ, B. (2000). *Microeconomics of Market Failures*, MIT Press, Cambridge, MA. [Here you find material on why markets can fail. There is not much time for this during our course, but having a look at this helps you better appreciate the assumptions under which markets exist and are efficient.]

SCHERER, F.M. (1996). *Industry Structure, Strategy, and Public Policy*, Harper Collins, New York, NY. [This book contains nine case studies of different industries. The discussion is excellent. There is no theory, though. I recommend this book to see how economic reasoning can be connected to the real world.]

IV. Welfare Economics

ARROW, K.J. (1963). *Social Choice and Individual Values*, Yale University Press, New Haven, CT. [Classic introduction to social choice theory by the founder of the field.]

ARROW, K.J., SEN, A.K., SUZUMURA, K. (EDS.) (2002). *Handbook of Social Choice and Welfare, Vol. 1*, Elsevier, Amsterdam, NL. [Reference book. Contains many excellent chapters on various aspects of social choice. Very good to get started on research.]

KAPLOW, L., SHAVELL, S. (2002). *Fairness versus Welfare*, Harvard University Press, Cambridge, MA. [In this nontechnical book, which does not contain a single formula, you find an interesting discussion of fairness and welfare as it relates to institutions and in particular to aspects of legal systems. Steven Shavell is a leading thinker in the area of “law and economics.”]

MOULIN, H.J. (2003). *Fair Division and Collective Welfare*, MIT Press, Cambridge, MA. [Excellent recent introduction to notions of fairness at the undergraduate level. Nice read.]

SEN, A. (1973/1997). *On Economic Inequality*, Clarendon Press, Oxford, UK. [This is a classic book by a winner of the 1998 Nobel Memorial Prize in Economics. The augmented 1997 edition (with James Foster) contains a very accessible introduction to notions of economic inequality.]

V. Regulation

VISCUSI, K., VERNON, J.M., HARRINGTON, J.E. (2000). *Economics of Regulation and Antitrust*, MIT Press, Cambridge, MA. [Comprehensive textbook on regulation often used in undergraduate economics programs. Contains virtually no formulas.]