

EC 411/511 (CRN 12860/12877): Advanced Micro Theory, Fall 2013  
Mon, Weds @ 10:00am - 11:50am, 30 Pacific

# ADVANCED MICROECONOMIC THEORY

**Peter J. Lambert**

Office: 532 PLC Phone: 346-4670

Email: [plambert@uoregon.edu](mailto:plambert@uoregon.edu) Website: <http://www.uoregon.edu/~plambert>

Office hours: Tue & Thur 10am - 11:30 am or by appointment

## Office Hours

I will do my best to be available during my stated office hours, but you are also welcome to stop by at other times (if I am in), or request an appointment. Whenever you have a question, I will try to help.

## Prerequisites

Students *must* have a full year of a regular or honors calculus sequence, MATH 251-253 or MATH 261-263 in the case of students already at the U of O. The course, which is an *advanced* microeconomics course, typically attracts a small and dedicated group of properly qualified persons. From the outset, the mathematics is very demanding: not least, a swift introduction to the calculus of functions of several variables, including partial differentiation, is given in the first week, and the going will be tough if you have not studied this topic before (e.g. in MATH 281). If you are uneasy about your mathematical background, please come and see me to discuss ways forward. It will also be hugely advantageous, for obvious reasons, to have taken a previous micro course such as *EC 311: Intermediate Microeconomics*.

## Required Text & Lecture Materials

The course text is any one of these three:

Nicholson, W. (2005). *Microeconomic Theory*, 9<sup>th</sup> edn. Thomson South-Western

Nicholson, W. and Snyder, S. (2008). *Microeconomic Theory*, 10<sup>th</sup> edn. Thomson S-W

Nicholson, W. and Snyder, S. (2011). *Microeconomic Theory*, 11<sup>th</sup> edn. Thomson S-W

henceforth referred to as **N**, **NS1** and **NS2** respectively (and collectively as **N/NS**). The newer editions have some marginal improvements, and are organized slightly differently, but they are all basically the same as far as we shall be concerned, and perfectly OK for this course; you could surely save money by acquiring **N** or **NS1** second-hand, rather than buying the prohibitively expensive **NS2** brand new. [The UO Book Store has been advised of your likely interest in **N/NS1**; internet sites such as Amazon, AbeBooks, Alibris are also places to look]. Material from parts 1-5 will be covered. This textbook is your main written resource for the course. The detailed outline overleaf describes the approximate lecture content, week by week, and indicates the location in **N/NS** of the following week's material. This should help you to prepare yourself: I shall assume that students have read the assigned chapter sections before I present material in class. There are also *Study Guides* for **N** and **NS1**, with practice exercises and solutions – check Amazon, for example. Lectures will be given using overhead projection materials I have designed, and images of these will be made available in PDF form for you to print and use as a classroom resource. These overheads deliver a lot of basic information in a compressed form - you could annotate your downloaded copies as we go along if you wish – but you will definitely need to work with **N/NS** as well as with these PDF pages.

## Preparation & Homeworks

This course is a *very* demanding introduction to advanced microeconomics. It is extremely important to prepare for *every* class in order to keep up with the fast pace that will be set. It is strongly recommended that sample exercises from **N/NS** be attempted *prior* to class. Exercises, including some from **N/NS**,

will be set as homeworks. There will be six homework assignments, spread across weeks 2 to 9. Homeworks that are handed in *on time* will be graded in a random fashion. I won't be accepting late homework without a compelling reason, as it disrupts other activities for either me or my GTF to have to mark things out of sequence: late homework will *not* be graded and will receive a score of 0. You may help each other with homework issues, but the work you submit must be your own, obviously.

### Grades

The marks for all set work will be on the scale 0-100%. I will be looking for, and rewarding, evidence of the following qualities when assigning final grades on the basis of each person's run of marks:

---

A <sup>+</sup> /A	Excellent. Outstanding individual effort showing sustained high-order insight and rigorous, original analysis. Well-organized and presented.
B <sup>+</sup> /A <sup>-</sup>	Good. Evidence of sustained, independent, high-level thought. Confident, critical analysis of the relevant issues and clear understanding of their implications, but with some lapses. Well-presented, clearly organized and effective.
B	Competent work. Signs of organization, thought and insight, but with lapses in argument.
C <sup>+</sup>	Narrowly conceived, uncritical, lacking focus, weakly argued or of doubtful relevance. Poorly organized.
C	Evidence of some effort but lacking a sound understanding of the subject. Inadequate research and thinking. Extensive irrelevance. A number of factual and interpretative errors.
D	Failure to understand the question, or to identify and resolve the issues it poses. Trivial or perfunctory work showing no effort, thought, reading or competence. Many errors of fact and interpretation

---

To the extent that the distribution of these qualities among students is fairly constant year by year, whereas the percentage marks awarded in quizzes and examinations contain a subjective element (*e.g.* they may vary by instructor), you might interpret the grade-assignment process as “curving” – but the descriptors are intended to impress upon you that there are absolute requirements as well as relative ones.

### Assessment details

The course will be assessed by means of the 6 homeworks, 2 quizzes and a final. The **homeworks** will count for a nominal **10%** of the total assessed value and the **quizzes** will be worth **40%** of the total, with 18% coming from the lower quiz score and 22% from the higher. The **final exam** will count for the remaining **50%**. In order to succeed in the course, your problem-solving skills will be rigorously tested, in both Quizzes and in the Final; it is essential to do *all* of the homeworks, not merely for the 10% of the total assessed value which they will generate but also for *practice!* Homework records may be further used to help determine course grades when total points are near the border of two letter grades. If a quiz is missed, a written petition explaining and documenting the reason must be submitted within a week of the missed quiz. If approved, the weight of the missed quiz (18%) will be added to the weight on the final exam score. The alternative is to have 0 points for the missed quiz. Requests for re-grades must be submitted in writing within a week of when the graded material was available for collection, and must include an argument of why you feel your answer was correct. Students taking this course as P/NP must earn a “C-” overall to receive a pass. For EC 511 students, certain problems in the homeworks, quizzes and/or final exam which may be optional for undergraduates will be compulsory. 511 students are expected to master material which goes beyond the basic course content, and to demonstrate notable analytical rigor in their written work.

### **Schedule of assessments**

Quiz 1, week 4: Wednesday 23<sup>rd</sup> October 2013

Topics: choice, demand, comparative statics, relationships among goods

Quiz 2, week 8: Wednesday November 20<sup>th</sup> 2013

Topics: production, costs, profit maximization, perfect competition, simple monopoly model

Final exam: this comprises questions covering the whole of the course and has been unavoidably scheduled for 10:15am – 12:15pm on Monday 9<sup>th</sup> December 2013.

### **Academic Integrity**

In the quizzes, you may refer to lecture notes and to your copy of **N/NS**, but no other form of assistance or source of information (including communication with other students) will be permitted. The final examination will be closed-book. Foreign students may use approved English-language dictionaries in the final exam. Any violations of academic integrity involving a quiz or exam will result in a failing grade for the course. In addition, a complaint will be filed with the University's Hearing Board.

### **Students with Special Needs**

If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with me soon. Please request that the Counsellor for Students with Disabilities send a letter verifying your disability.

### **Detailed Course Outline**

The purpose of the course is to analyze first the behavior of consumers and firms, then the interaction of consumers and firms in different types of markets. By the end of the term you will have received a solid grounding in the relevant theory, and you should be able to solve a wide range of related economic problems. At base, the aim is to give you a clear understanding of the nature and scope of formal microeconomic analysis as an applicable scientific tool. The course is taught by means of 2 weekly one-hour 50 minute lecture presentations (two of these will be used for quizzes). Below is an *indication* of the schedule of topics, week by week (the actual rate of delivery may vary, depending how we get along):

*To be read ahead of the first week's lectures:* **N/NS , chapters 1 & 2**

#### **WEEK 1: Economic Models and Optimization**

For you to read about: positive & normative analysis, value & price, partial & general equilibrium, uncertainty, imperfect information. In class: calculus review, elasticities, chain rule, 1<sup>st</sup> & 2<sup>nd</sup> order conditions, partial derivatives, implicit function theorem, envelope theorem, constraints, Lagrangian approach, duality, inequality constraints, Kuhn-Tucker conditions, quasi-concavity.

**To be read before Week 2's lectures: N/NS , chapters 3 & 4**

#### **WEEK 2: Preferences, Utilities and Choice**

Axioms of rational choice. Utility. Marginal rate of substitution, marginal utility. Substitutes, complements, elasticity of substitution. Homothetic preferences. Utility-maximization, 1<sup>st</sup> & 2<sup>nd</sup> order conditions, corner solutions. Indirect utility function. Lump sum tax principle. Expenditure function.

**To be read before Week 3's lectures: N/NS , chapter 5**

#### **WEEK 3: Comparative Statics**

Normal & inferior goods, substitution & income effects, Giffen paradox. Compensated (Hicksian) & uncompensated (Marshallian) demands. Slutsky equation. Compensated & uncompensated price elasticities. Compensating variation, equivalent variation, consumer surplus. Revealed preference theory.

To be read before Week 4's lectures: **N/NS** , chapter 6

**WEEK 4: Demand Relationships Among Goods**

Gross substitutes and complements: asymmetry. Net substitutes and complements: symmetry. Substitutability with many goods. Composite commodity theorem.

**Quiz 1 on Consumer Theory on Weds October 23<sup>rd</sup>**

To be read before Week 5's lectures: **N**, chapters 7, 8 *or* **NS1&2**, chapters 9, 10

**WEEK 5: Production and Cost Functions**

Marginal & average physical product. Marginal rate of technical substitution. Returns to scale. Technical progress. Accounting & economic costs. Perfectly competitive factor markets, derived demands. Total, average & marginal cost functions. Shephard's lemma. Short & long run cost functions, envelope result.

To be read before Week 6's lectures: **N**, chapter 9 *or* **NS1&2**, chapter 11

**WEEK 6: Profit Maximization**

Modeling firms' behavior: "marginal" decisions. Marginal revenue and elasticity, inverse elasticity rule. Short-run supply. Profit function. Envelope results. Producer surplus in the short run.

To be read before Week 7's lectures: **N**, chapters 10, 11 *or* **NS1&2**, chapter 12

**WEEK 7: Perfect Competition**

Short, very short runs: equilibrium, comparative statics. Long-run: entry, exit; equilibrium, comparative statics; constant/increasing/decreasing-cost industries. Ricardian rent, long run surplus. Price controls, tax incidence, deadweight loss, gains from international trade, effects of a tariff.

To be read before Week 8's lectures: **N**, chapter 13 *or* **NS1&2**, chapter 14

**WEEK 8: Monopoly (start)**

Barriers to entry, monopoly power, profit maximization & inverse elasticity rule. Comparison with perfect competition: welfare losses.

**Quiz 2 on Producer Theory including simple monopoly model, on Wed Nov 20<sup>th</sup>**

To be read before Week 9's lecture: **N**, chapter 13 *or* **NS1&2**, chapter 14 (*again!*)

**WEEK 9: Monopoly (continued)**

Product quality. Price discrimination, market separation, 3<sup>rd</sup>-degree price discrimination, two-part tariffs. Natural monopoly, regulation. Anatomy of monopoly models.

To be read before Week 10's lectures: **N**, chapters 14, 15 *or* **NS1&2**, chapters 8, 15

**WEEK 10: Models of Imperfect Competition + some game theory**

Cartel, Cournot & conjectural variations models. Price & Stackelberg leadership. Game theory: Nash equilibrium (only). Cooperation and repeated games. Trigger strategies.

*Small print:* we shall have skipped the chapter on General equilibrium and Welfare (**N**, chapter 12 *or* **NS1&2**, chapter 13), due to lack of time.

Peter Lambert, August 2013