Amherst College
Department of Economics
Fall 2010

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Economics 58

Advanced Microeconomics

This course is intended to introduce you to the tools used by economists to explain behavior at the microeconomic level. The course takes a mathematical approach to these topics, primarily through the use of multivariable calculus. This use of mathematics should not obscure the basic purpose of the course, however, which is to get you to "think like an economist".

The textbook for the course is *Microeconomic Theory: Basic Principles and Extensions, 10th Edition* by Walter Nicholson and Christopher Snyder (Thomson/Southwestern, 2008). Those who buy this book new will be eligible for a significant rebate from the author in order to avoid any appearance of conflict of interest. Additional readings on specific topics will be handed out throughout the course.

Your grade in this course will be based on weekly problem sets and an occasional surprise quiz (20 percent total) and on four one-hour tests (20 percent each). In order to conserve class time, the hour tests will be separately scheduled. Dates on this syllabus for the tests are only approximate.

Prerequisites: This course requires that you have completed Economics 11 and Mathematics 13 or equivalent. If you have any uncertainty about whether you meet these requirements, be sure to check with me.

Course Outline

Week	Date	Topic and Assignment
1	9/6	Mathematics Key concepts: Constrained maximization, envelope theorem, concavity and quasi-concavity, homogeneous and homothetic functions. Principles of economic modeling. MT: 1&2
2	9/13	Utility Maximization Key concepts: Utility maximization, indirect utility, lump-sum principle, expenditure functions. MT: 3&4
3	9/20	Demand Theory I Key concepts: expenditure functions, income and substitution effects, the Slutsky equation, Hicks and Marshall demand functions, Hicks' 3 laws. MT: 4 & 5
4	9/27	Demand Theory II Key concepts: Demand curves, elasticity, consumer surplus, composite commodities. MT: 5 & 6 .

About October 1, Hour Test #1

Week	Date	Topic and Assignment
5	10/4	Uncertainty and Information Key concepts: Expected utility, risk aversion, CRA and CRRA utility functions, state preference model. MT 7
6	10/11	Production and Cost Functions Key concepts: Production function, returns to scale, elasticity of substitution, cost functions, contingent input demand. MT: 9 & 10
7	10/18	Profit Maximization (finish Cost Functions) Key concepts: Profit maximization, profit functions, supply functions, input demand, substitution and output effects. MT: 11

8	10/25	Partial Equilibrium Analysis Key concepts: Market equilibrium in short and long run, producer surplus, tax incidence theory. MT: 12

About October 29, Hour Test #2

9	11/1	General equilibrium and welfare Key concepts: general equilibrium, existence proofs, Pareto optimality, first and second theorems of welfare economics, externalities, public goods. MT: 13, 19 (thru p. 687 only)
10	11/8	Monopoly Key concepts: Marginal revenue, welfare loss, product quality, price discrimination (first, second, third degree). MT: 14
11	11/15	Imperfect competition I Key concepts: Nash Equilibrium, Sub-game perfect equilibrium, Bayesian-Nash equilibrium, Bertrand Paradox, Cournot Equilibrium. MT: 8, 15 (thru p. 531)

About November 19, Hour Test # 3

12	11/29	Capital and Time Key concepts: Rental rate on capital, PDV, dynamic optimization, scarcity costs. MT: 17 (skim 16 thru p. 485)
13	12/6	Asymmetric information Key concepts: Moral hazard, adverse selection, principal-agent models. MT: 18.
14	12/13	Externalities Key concepts: Externalities, Pigovian Taxes, Public Goods, Lindahl Equilibrium MT: 19.

About December 17, Hour Test # 4