CARLETON UNIVERSITY
Department of Economics

ECON 4020 A
Advanced Microeconomic Theory

Instructor: Professor K.G. Armstrong   2019 Fall

E-mail: keir.armstrong@carleton.ca   Lectures: Mondays, 14:35–17:25, in ME 4332

Telephone: 613-520-2600 x 8696   Tutorials: Tuesdays, 13:05–14:25, in SA 516

Office: LA D-899   Office Hours: Thursdays, 11:35–12:55

Prerequisites

As stated in the 2019–20 Undergraduate Calendar, the prerequisites for this course are "ECON 2020 (or ECON 2009) and ECON 2030 each with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4020." Please note that *all* of these prerequisites *must* be satisfied in order to remain registered in the course. Students who believe they have taken a similar background course or courses from another university must provide appropriate documentation to the Department of Economics Undergraduate Administrator, Amanda Wright.

Objectives

The aim of the course is to provide a rigorous analysis of the behaviour of economic agents in production, consumption, and general equilibrium. Elementary mathematical tools will be employed in the exposition of these topics.

Tutorials

The weekly tutorials will begin on September 10 and be led by a teaching assistant assigned by the Department. The main purpose of these tutorials is to give students guidance in working through particular problems and applications of advanced microeconomic theory covered in the lectures and in the textbook. The teaching assistant may also spend some time answering students' questions about course materials.

Required Text

Varian, Hal R., *Microeconomic Analysis*, 3rd Edition, New York: Norton, 1992 (ISBN-10: 0-393-95735-7).

Evaluation

Each student's grade in the course will be calculated as a weighted average of scores on eleven, in-class, formative assessments (one per the first through eighth lectures at 2½% each plus one per the last three lectures at 3⅓% each), a mid-term examination (22%), and an in-class final examination (48%).

No course grades are final until approved by the Faculty Dean.

Students will be expected come to each lecture having read carefully the relevant parts of the required text as stated in the "Course Schedule and Reading List" below and/or communicated in advance via cuLearn. Chapters 1, 4, 5, 2, 3, and 6 (Module I), 7–10 (Module II), and 13, 17, and 18 (Module III) of Varian (1992) will be covered in the order indicated (except for Ch. 1, which will be covered in part between Chs. 5 and 2, Ch. 4, which will be covered in part between Chs. 2 and 3, Ch. 5, which will be covered in part between Chs. 3 and 6, Ch. 10, which will be covered in part between Chs. 7 and 8 and in part between Chs. 8 and 9, and Ch. 13,

which will be covered in part between Chs. 17 and 18) over the first through eighth and last three lectures of the (twelve-lecture) term.

Formative assessments of student learning during a given lecture will be based on pertinent multiple-choice questions delivered using Poll Everywhere and/or discussions/submissions of selected worked problems. Students who can document a compelling reason for missing one of the first four or the fifth through the eighth or the last three of these assessments will be excused and a third or a third or a half of the associated weight will be added to that of each of the other three or three or two assessment in the same module (so that it becomes 2½% + 2½% / 3 = 3⅓% or 2½% + 2½% / 3 = 3⅓% or 3⅓% + 3⅓% / 2 = 5%). Students *must* inform the instructor of such an absence in advance, if possible.

Homework exercises will be assigned each week via cuLearn at least five days in advance of their due date. Students will be expected to attempt to write out *their own* solutions to as many as possible of these exercises *prior to* the associated lecture and as many of the balance prior to the subsequent tutorial. As most of the assigned exercises will be taken from the required text, which also contains "answers to all odd-numbered problems," students should abide by Varian's (1992, p. XIV) "hope that [they] will have sufficient willpower to avoid looking at the answer until they have put some effort into solving the problems for themselves." Please be aware in any event that plagiarism is serious offence at Carleton and should be recognized and avoided.

The mid-term examination will cover Module I of the course and take place during the first 75 minutes of the class on Tuesday, October 8. Students who can document a compelling reason for missing this examination will be excused and the associated weight will be added to that of the final examination (so that it becomes 48% + 22% = 70%). Students *must* inform the instructor of such an absence in advance, if possible.

The final examination will take place for 2¾ hours during the class on Monday, November 18. It will cover Modules I and II of the course and consist of a number of multi-part problems similar to those discussed in class earlier in the term. Graded final exam scripts will not be available for (supervised) student perusal until after the last class (see the second paragraph of Academic Regulation 3.3.4).

Course Schedule and Reading List

Sep. 9: Preliminaries
> Technology (Varian 1st two examples on p. 3, §1.3, § 1.4 excl. para. following Fig. 1.3, §1.5 excl. 1st para. and 1st prop. & proof on p. 9, §1.6–§1.11 excl. CRS property (1) on p. 15)

Sep. 16: Cost Minimization and the Cost Function (Varian Ch. 4 excl. §4 & §5 and Ch. 5 excl. §5)

Sep. 23: Technology and Profit Maximization (Varian Ch. 1 parts excluded above, Ch. 2, and §5 of Ch. 4)

Sep. 30: The Profit Function and Duality (Varian Ch. 3, §5 of Ch. 5, and Ch. 6)

Oct. 7: Consumer Preferences and Optimization (Varian Ch. 7 excl. §3 to end)

Oct. 8: Mid-Term Examination

Oct. 15: Graded Mid-Term Exam returned by T.A.

Oct. 28: Utility Maximization and Consumers' Surplus (Varian Ch. 7 from §3[†] to end and §1–§3 of Ch. 10)

Nov. 4: Choice (Varian Ch. 8 excl. §4–§6 & §8 & §9 & §11 and §5 of Ch. 10)

Nov. 11: Demand (Varian Ch. 9 excl. §5 and §6 of Ch. 10)

Nov. 18: Final Examination

Nov. 19: No tutorial

Nov. 25: Competitive Markets and Welfare Analysis (Varian Ch. 13 excl. §8–§10 and §3 of Ch. 14)

Dec. 2: General Equilibrium and Exchange (Varian Ch. 17 excl. §5 & §8–§9)

Dec. 5: General Equilibrium and Production (Varian §8–§10 of Ch. 13 and Ch. 18 excl. §7)

[†] Read also: Darrough, Masako N., and Clive Southey, "Duality in Consumer Theory Made Simple: The Revealing of Roy's Identity," *Canadian Journal of Economics*, Vol. 10, No. 2 (May 1977), pp. 307–317.