

CARLETON UNIVERSITY  
Department of Economics

ECON 4020 B  
**Advanced Microeconomic Theory**

Instructor: [Professor K.G. Armstrong](#)

2022 Winter

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Lectures: Thursdays, 14:35–17:25, in Nicol Building (NI) 4010

Telephone: 613-520-2600 x 8696

Tutorials: Mondays, 13:05–14:25, in Azrieli Theatre (AT) 102

Office: [Loeb Building \(LA\)](#) D-899

Office Hours: Thursdays, 13:00–14:15 or by appointment online

### Prerequisites and Preclusion

As stated in the [2021–22 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](#). The 2021–22 Undergraduate Calendar also states that ECON 4020 “[p]recludes additional credit for ECON 4200 (no longer offered [since the 2009 Winter term]).”

### 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 January 10 with a presentation of the course preliminaries by the instructor. The main purpose of subsequent tutorials will be to give students guidance in working through particular problems and applications of microeconomic theory covered in the lectures and in the textbook and thereby enhance their preparation for the mid-term and final examinations. Depending on the number of hours of paid support made available to the instructor, these tutorials may be led by a teaching assistant assigned by the Department.

### Required Text

[Varian, Hal R.](#), *Microeconomic Analysis*, 3rd Edition, New York: Norton, 1992 (ISBN-10: 0-393-95735-7); available from [The Bookstore](#).

### 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 ninth lectures at 2½% each plus one per the last two lectures at 4½% each for a total of 30%), a mid-term examination (22%), and an in-class final examination (48%).

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 [Brightspace](#). Chapters 1, 4, 5, 2, 3, and 6 (Module I), 7–10 and 13 (Module II), and 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, and Ch. 10, which will be covered in part between Chs. 7 and 8 and in part between Chs. 8 and 9) over the first through ninth and last two 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 ninth or the last two of these assessments will be excused and a third or a quarter or all of the associated weight will be added to that of each of the other three or four or one assessment(s) in the same module (so that it becomes  $2\frac{1}{3}\% + 2\frac{1}{3}\% / 3 = 3\frac{1}{9}\%$  or  $2\frac{1}{3}\% + 2\frac{1}{3}\% / 4 = 2\frac{1}{12}\%$  or  $4\frac{1}{2}\% + 4\frac{1}{2}\% / 1 = 9\%$ ). Students *must* inform the instructor of such an absence in advance, if possible.

Homework exercises will be assigned each week via [Brightspace](#) at least three days in advance of the associated lecture (the “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 as possible of the balance prior to the subsequent tutorial (during which a selection will be taken up). 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 in relation to *all* academic work.

The mid-term examination will take place in class on Monday, February 7 and be 75 minutes in duration. It will cover Module I of the course and consist of a number of multi-part problems similar to those discussed in class earlier in the term. 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 in class on Thursday, March 24 and be 2¼ hours (or 165 minutes) in duration. It will cover Modules I and II of the course with roughly double the weight on the latter and consist of a number of multi-part problems similar to those discussed in class earlier in the term. Students who can document a compelling reason for missing this examination after informing the instructor of such an absence in advance *may* be granted a deferred final examination. Graded final exam scripts will not be available for (supervised) student perusal until after the course grades have been approved by the Faculty Dean (see the second paragraph of [Academic Regulation 3.3.4](#)).

### Course Schedule and Reading List

Jan. 10: Preliminaries

Jan. 13: 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)

Jan. 20: Cost Minimization and the Cost Function (Varian Ch. 4 excl. §4 & §5 and Ch. 5 excl. §5)

Jan. 27: Technology and Profit Maximization (Varian Ch. 1 parts excluded above, Ch. 2, and §5 of Ch. 4)

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

Feb. 7: Mid-Term Examination

Feb. 10: Consumer Preferences and Optimization (Varian Ch. 7 up to end of proof on p. 103)

Feb. 17: Utility Maximization and Consumer Surplus (Varian Ch. 7 from last two paragraphs on p. 103 to end and §1–§3 of Ch. 10; [Darrough and Southey \(CJE, 1977\)](#))

Feb. 17: Graded Mid-Term Exam returned

Mar. 3: The Comparative Statics of Consumer Demand (Varian Ch. 8 excl. §4–§6 & §8–§9 & §11 and §5 of Ch. 10)

Mar. 10: Topics in Consumer Demand Behaviour (Varian Ch. 9 excl. §5, §11 of Ch. 13, and §6 of Ch. 10)

Mar. 17: Competitive Markets and Welfare Analysis (Varian Ch. 13 excl. §8–§11 and §3 of Ch. 14)

Mar. 24: Final Examination

Mar. 31: General Equilibrium and Exchange (Varian Ch. 17 excl. §5 & §8–§9)

Apr. 7: General Equilibrium and Production (Varian Ch. 18 excl. §7)

## **Information on Academic Accomodations**

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, please refer to the [Guide on Academic Accomodation](#).

## **Plagiarism**

Any form of cheating and plagiarism is inadmissible and will be dealt with according to University policies & guidelines, see <https://carleton.ca/registrar/academic-integrity/>.