

BOSTON COLLEGE
Department of Economics

econ2203: Microeconomic Theory – Honors Level (Spring 2023)

Gasson 304: TuTh (3 PM – 4:15 PM)

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Course Description: There are several ways to think about the content of this course.

At a more theoretical level: We will be building and analyzing theoretical economic/mathematical models that capture the behavior of economic agents, sometimes acting alone but more often interacting with other economic agents, looking at and evaluating the likely associated outcomes and implications.

All that sounds a bit abstract, which it is. More concretely: We'll be focusing on the behavior of consumers and producers (and sometimes governments), and developing a theoretical understanding of how they might/will behave in different market environments. As part of that analysis, we'll evaluate the likely market outcomes, focusing on welfare/distributional impacts/effects as well as the question of economic efficiency.

The ultimate goal of the course is to prepare you well for the material covered in more advanced upper level Economics electives, which will be more applied (some might say *relevant*) and will combine the learning from MicroTheory with institutional details and econometric analysis. You have to start somewhere when doing economic analysis, and economists typically start with what *theory suggests...* and then build on those insights.

Prerequisites: ECON1101 (Economics Principles) and MATH1100/ADMT1901 (Univariate Calculus I).

MATH1101 (Univariate Calculus II) and MATH2202 (Multivariate Calculus) are recommended but not required for the course. However, I do expect students to know how to work with simple partial derivatives. And yes, we do use a lot of algebra in this course.

A comment about the use of math in this course: It is often said that *Economists don't use a lot of math, but they do use math a lot!* And it's true. We will use a lot (a lot!) of algebra and mathematical notation in the course. As well, we are often working with simple functional forms and taking derivatives or evaluating integrals (with way more differentiation than integration). While we will use some multivariate calculus, it won't be very much (the functional forms will always be very simple, and the analysis will be very similar to what we do when working with just one variable, and the focus will always be on differentiation).

Required Text: Hal Varian, *Intermediate Microeconomics: A Modern Approach, 9th Edition*. Norton 2014. (7th and 8th editions should work as well)

We will be following the text fairly closely... that's unusual for me, but I like the text a lot!

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Accommodations: If you are a student with a documented disability seeking reasonable accommodations in this course, please contact Kathy Duggan (x2-8093; dugganka@bc.edu) at the Connors Family Learning Center regarding learning disabilities and ADHD, or staff in the Disability Services Office regarding all other types of disabilities, including temporary disabilities. Advance notice and appropriate documentation are required for accommodations.

Academic Integrity: You will be held to Boston College's standards of academic integrity. If you have any questions as to what that means, see BC's academic integrity policies webpage.¹

Course Structure:

1) **Exams (70%):** Three in-person in-class exams: Two mid-term exams and an optional final exam.

Anticipated dates (these may change... but probably not):

- Mid-term Exam #1 covering Half #1 material; Thursday, March 2nd (this is the last class before Spring Break; plan your Break accordingly)
- Mid-term Exam #2 covering Half #2 material; Thursday, May 4th (last class in the semester)
- Optional Final Exam: Monday, May 15th, 12:30 PM (late or what?)

For mid-term exams, you are allowed one *cheat sheet* (8.5 x 11 or A-4; both sides) and the use of a calculator; for the final exam, you are allowed two *cheat sheets* (both sides) and the use of a calculator.

Exam weights and the optional final exam:

- **20/20/30** If you take the optional final exam: Each mid-term exam counts for 20% of your course grade, and the final exam counts for the remaining 30% (so the exam weights are: 20%-20%-30%).
- **35/35** If you decide not to take the optional final exam: Each mid-term exam counts for 35% of your course grade.

You must commit to taking the final exam at the time you receive the exam. To allow you to make a fully informed decision about whether or not to take the (optional) final exam, conditional course grades, which assume that you are not taking the final exam, will be posted to Canvas as quickly as possible after the end of classes. At that time, I'll be happy to provide you with a sense of how final exam performance will impact your course grade.

There are no make-up exams in this course. If you miss either mid-term exam, then you must take the final exam (exam weights will be adjusted proportionately).

All exam scores/grades are curved. While every exam is different, raw exam scores in general seem to average about 70% of total available points.

¹ https://www.bc.edu/content/bc-web/academics/sites/university-catalog/policies-procedures.html#academic_integrity_policies

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2) Problem Set #0 (5%)

- Distributed at the first class; Answers due at the start of class Tues Jan 24th. Review of simple single and multi-variable calculus ... focused on (partial) differentiation, and of course, algebra.

These are the tools that you should currently have in your tool bag!

3) Problem Sets 1–6? (25%)

- There will be about a half dozen additional Problem Sets, designed to give you some practice working with the tools and concepts developed in the course. You'll typically have two weeks to complete the Problem Sets, which will be graded on a 10 pt basis.

The problem sets will have Answer Sheets, which you should submit in hardcopy form prior to the start of class. Answers will be posted to Canvas and reviewed quickly in class. I will drop your lowest Problem Set (PS1-6) score when computing course grades.

- Students are allowed, and indeed encouraged, to collaborate on Problem Sets, but must submit individual Answer sets for grading.

Proposed Schedule of Topics:

The schedule and topics will likely evolve as we work through the semester, but here's a sense of what I have in mind at the moment (Varian 9th ed. chapters are in "[]"s).

Note that I'm hoping to cover 24-30 chapters of the text in 25 classes. Yes, we will be moving quickly! I have indicated which chapters/topics we'll likely skip if we get behind schedule.

I: Introduction: Math Review; Demand, supply and market equilibrium prices

- 1) Math review (mostly review of basic algebra and calculus)
- 2) Markets and equilibrium outcomes [1 and 16]

II: Consumers' Demand: Preferences, constraints, demand and (net) benefit/surplus

- 3) Budget constraints and preferences [2 and 3]
- 4) Utility, choice and demand [4, 5 and 6]
- 5) Price indices, income and substitution effects and labor supply [7, 8 and 9]
- 6) Measuring consumer's benefit (consumer's surplus; compensating/equivalent variations) [14]

Mid-term Exam #1 about here

III: Commodity Exchange: Equilibrium and efficiency

- 7) Exchange and the Edgeworth Box [9 and 32]

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IV: Production: Technology, costs and profit maximization

- 8) Technology and profit maximization [19 and 20]
- 9) Cost minimization and cost curves (LR and SR) [21 and 22]

V: Competitive Markets: Equilibrium and efficiency

- 10) Market demand and industry supply [15, 23 and 24]

VI: Market Failures I: Monopoly and oligopoly

- 11) Monopoly and market power [25 and 26]
- 12) Oligopoly and game theory/applications [28, 29 and 30]

Mid-term Exam #2 about here

and if time permits...

VII: Game theory cont'd

- 13) Uncertainty (games against nature) [12]
- 14) Behavioral Economics [31] (@ the interface of economics, psychology and marketing)

VIII: Market Failures II: Externalities, public goods and asymmetric information

- 15) Externalities, Coase's Theorem, public goods and free riding [35 and 37]
- 16) Asymmetric information (moral hazard and adverse selection) [38]

Other topics/chapters covered/skipped as time permits:

Intertemporal Choice [10], Asset Markets [11], Risky Assets [13], *Measurement* [17], Auctions [18], Factor Markets [27], Production [33], Welfare [34], and *Information Technology* [36].
(italics: my more interesting topics)