

**BOSTON COLLEGE**  
Department of Economics

**econ2203: Microeconomic Theory – Honors Level (Fall 2024)**  
Campion 231 (Tu Th, noon - 1:15 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 as simple as possible, 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*.

This text now features a 10<sup>th</sup> edition (Norton 2024) and a new co-author, Marc Melitz... but for our purposes, earlier editions (say the 7<sup>th</sup>, 8<sup>th</sup> or 9<sup>th</sup> editions) will work just 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.<sup>1</sup>

### Course Structure:

1) **Exams (80% of your course grade):** Two mid-term exams and an *optional* final exam.

Exam dates may change depending on how quickly we work through the material. Here are the dates that I have in mind at the moment:

- Mid-term Exam #1: Thurs, October 10<sup>th</sup> (the last class prior to *Fall Break*)
- Mid-term Exam #2: Thurs, December 5<sup>th</sup> (the last class in the semester)
- *Optional* Final Exam: Tues, December 17<sup>th</sup> @ 12:30 PM (date/time set by BC)

Exam weights and the optional final exam:

- If you take the optional final exam: Each mid-term exam counts for 24% of your course grade, and the final exam counts for the remaining 32% (so the exam weights are: 24%-24%-32%).
- If you decide not to take the optional final exam: Each mid-term exam counts for 40% of your course grade.

You must commit to taking the (optional) final exam at the time you receive that exam. To allow you to make a fully informed decision about whether or not to take the 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.

For each mid-term exam, 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.

There are no make-up exams in this course. If you miss either mid-term exam, then 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... those scores are then curved.

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<sup>1</sup> [https://www.bc.edu/content/bc-web/academics/sites/university-catalog/policies-procedures.html#academic\\_integrity\\_policies](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% of your course grade)

- Distributed at the first class; Answers due at the start of class #3, Tues Sept. 3<sup>rd</sup> (graded quickly; the due date is deliberate: drop/add runs through Weds. the 4<sup>th</sup>). Review of simple single and multi-variable calculus (focused on (partial) differentiation), and of course, algebra and more algebra. The problems in the Problem Set are taken from course material, and are reflective of course content.

These are the tools that you should currently have in your tool bag! ... and tools that you'll be using extensively over the course of the semester. If this does not go so well for you, you should seriously consider dropping the course.

### 3) Other Problem Sets (15% of your course grade)

- There will be about a six 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 each Problem Set.

The problem sets will have Answer Sheets, which you should submit prior to the start of class (you can submit hardcopies or upload pdfs to the Canvas dropboxes). Answers will be posted to Canvas and reviewed quickly in class.

- Students are allowed, and indeed encouraged, to collaborate on Problem Sets, but must submit individual Answer Sheets 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 9<sup>th</sup> ed. chapters are in "[ ]"s).

Note that I'm hoping to cover 24-30 chapters of the text in 24 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) Getting Started: What you (should have) learned in Principles [1]

## **II: Consumer theory: Preferences; constraints; choice/demand; (net) benefit/surplus; uncertainty**

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

## ***Mid Term #1 about here***

- 7) Behavior under uncertainty [12]

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### **III: Commodity exchange: Equilibrium and efficiency**

- 8) Exchange: Buying and selling (and labor supply) [9]
- 9) The Edgeworth Box [32]

### **IV: Producer theory: Technology, costs and profit (maximization)**

- 10) Cost curves and firm supply (SR and LR) [22 and 23]
- 11) Technology and profit maximization [19 and 20]
- 12) Cost minimization [21]

### **V: Competitive markets: Equilibrium and efficiency**

- 13) Market demand and industry supply [15 and 24]
- 14) Equilibrium [16]

### **VI: Market failures I**

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

*and if time permits...*

### **VIII: Game theory cont'd**

- 17) Behavioral economics [31] (@ the interface of economics, psychology and marketing)

### **IX: Market failures II: Externalities, public goods and asymmetric information**

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

### **Other topics/chapters to be 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 choices for more interesting topics)