Carnegie Mellon University  
Heinz College

90-908 Ph.D. Microeconomics I  
Course Syllabus, Fall 2017

INSTRUCTOR

Brian Kovak  
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Cell Phone: 610-772-0877 (for use only in emergencies)

LECTURE

Location: 1004 Hamburg Hall  
9:00-10:20 Tuesday and Thursday Aug 29-Dec 7 (except Nov 23, Thanksgiving)

TEACHING ASSISTANT

Rahul Ladhana  
Discussion Section: Fridays 9:00-10:20 (except Nov 24), 1004 Hamburg Hall  
Office Hours: by appointment  
E-Mail: rladhana@cmu.edu

HOMEWORK GRADER

Brita Glennon  
E-Mail: bglennon@andrew.cmu.edu

COURSE ORGANIZATION\(^1\)

There will be three exams, October 3, November 9, and during the university final exam period, December 11-15. The final exam time is set by the University and will be announced around the middle of the fall semester. Students who have scheduling conflicts for the first two exams must make arrangements at least two weeks in advance, and students should not make winter break travel plans during the final exam period before learning the third exam schedule. Problem sets will be given throughout the semester. The final score is the weighted average of scores received on the exams and problem sets, with weights 0.25 for all problem sets combined, and 0.25 for each of the three exams.

The teaching assistant will hold weekly discussion sections for homework questions and general review. I expect that you will attend this session prepared with relevant questions about lecture material and homework.

\(^1\) Thanks are due to Lowell Taylor for originally providing much of the material for this course
TEXTBOOKS


COURSE CONTENT

*Microeconomics* is the study of the ways in which individuals and firms make choices, and how these choices interact. Economics shares with other behavioral sciences the general goal of explaining and predicting human behavior. The distinguishing feature of the economic approach is an emphasis on rational decision-making under conditions of scarcity. Because of the central role of markets, i.e., the price system, in describing the outcomes of individual and firm decision-making, microeconomics is sometimes called *price theory*.

*Ph.D. Microeconomics I* provides a semester-long introduction to microeconomic theory and its application. The primary objective of the course is to familiarize students with the microeconomic paradigm, and develop an appreciation of the usefulness (and limitations) of microeconomic analysis. A further goal of the course is to develop and exercise students’ ability to use economic analysis in examining applied issues, and, more generally, to help students acquire formal modeling skills—the ability to reduce real-world problems to useful and mathematically tractable representations.

This course is designed for the following students: (i) Ph.D. students who want to increase their exposure to microeconomics, but do not expect to use formal microeconomics in their research (i.e., students for whom this course is likely to be their last course in microeconomics); (ii) Ph.D. students who plan to study microeconomics beyond the introductory level of this course, but do not have the background for the Ph.D. economic theory sequence offered at the Tepper School; and (iii) masters level students (or perhaps the occasional undergraduate) with an especially high level of interest and a good background in mathematics. Note that this course is not a close substitute for the first course in the Tepper School microeconomics sequence (Ph.D. Intermediate Microeconomics). Some students may find this course to be a useful supplementary course to Ph.D. Intermediate Microeconomics. Students who have sufficient preparation are encouraged to investigate the Ph.D. Intermediate Microeconomics offered at the Tepper School.

There are no formal prerequisites for this course. However, students are assumed to have a solid working knowledge of multivariate calculus. You will take brief math quiz in the first lecture to help you determine whether your math training is sufficient for the course. Prior exposure to microeconomics, in a good undergraduate-level course, is helpful but not required.
COURSE POLICIES

Please turn off your cell phone while in the classroom (talk to me if you have a special situation requiring constant communication).

Although I will not take formal attendance, I expect that you will attend and will be engaged in the course material while in class. The information presented in lecture will help you to succeed in the homeworks and exams, and I will strive to make everything we cover interesting and relevant to your research goals. If you miss lecture, I expect you to get lecture notes from a classmate:

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I will be teaching from the whiteboard during lecture, and my lecture notes will be posted on the CMU Canvas website (www.cmu.edu/canvas). I do this as a service to students and will strive to have notes posted before the relevant lecture, but cannot guarantee this in all cases. Since many economic models admit very helpful graphical representations, I encourage you to take notes on paper and draw the diagrams along with me. The posted notes have spaces for you to draw your own diagrams. With this in mind, I discourage the use of laptop computers during class.

All work submitted in this class must be your own. For problem sets, you may discuss problems with classmates, but you should submit your own solutions to the problems reflecting your individual understanding. Exams will be completed individually, without any interaction with others and without any reference materials. You may use a calculator during exams and must bring your own calculator and writing implements to exams.

Any student found to be in violation of these policies will incur academic disciplinary actions consistent with University policies. For official CMU definitions of cheating and plagiarism, and academic disciplinary procedures that will be followed in the case of a violation, see: http://www.cmu.edu/policies/student-and-student-life/academic-integrity.html

Problem sets are due at the start of lecture on the due date. The lowest problem set score will be automatically dropped from your grade. This policy will also cover any conflicts or other issues requiring you to miss a problem set. Late problem sets will be deducted one letter grade per day late. If you have to miss an exam, let me know immediately and at least two weeks before the exam to make arrangements. In general, keep me informed of any issues that are likely to affect your course performance so we can address the issues before they become intractable.

Other than talking to me before or after class or signing up for office hours, the best way to get in touch with me is to send me an email. In general, I will check email at least once each weekday and once each weekend during the term (there will be a few exceptions to this that I’ll let you know about in advance). If there is an emergency, my cell phone number is 610-772-0877 (Please only use this in truly serious situations).
TENTATIVE OUTLINE

August 29: Introduction

Nicholson and Snyder, Chapters 1 – 2

August 31 – September 12: Theory of the Consumer

Nicholson and Snyder, Chapters 3 – 5
Varian, Chapters 7 – 8

September 14 – September 19: Individual and Market Demand

Nicholson and Snyder, Chapters 5 – 6
Varian, Chapters 9 – 10

September 21 – September 28: Uncertainty

Nicholson and Snyder, Chapter 7
Varian, Chapter 11

October 3: **Exam 1**

October 5 – October 17: Theory of the Firm

Nicholson and Snyder, Chapters 9 – 11
Varian, Chapters 1 – 5

October 19 – October 26: Competitive Markets

Nicholson and Snyder, Chapters 12 – 13
Varian, Chapter 13

October 31 – November 7: Monopoly

Nicholson and Snyder, Chapter 14
Varian, Chapter 14

November 9: **Exam 2**
November 14 – 21: Game Theory, with Application to Oligopoly

Nicholson and Snyder, Chapters 8, 15
Varian, Chapters 15 – 16

November 23: **Thanksgiving break**

November 28 – December 7: Other Topics: Intertemporal Choice, Externalities, and Public Goods

Nicholson and Snyder, Chapter 19
Varian, Chapters 19, 23-24

Finals Week (December 11-15): **Exam 3** (set by University)