

# Econ 501: Microeconomics, Fall 2017

## Contact Information

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If you contact either of us by email, please put “ECON 501” somewhere in the subject line.

## Course Description and Learning Outcomes

This is the first semester of a year long sequence on microeconomic theory required of all first year Economics PhD students. The course is therefore designed with the needs of these PhD students in mind. This half deals with the classics: consumer and producer theory, choice under risk and uncertainty, revealed preference theory and general equilibrium theory.

Along the way, we will extensively use the various mathematical tools that form the core workhorses of modern formal microeconomic analysis: real analysis, constrained optimization, monotone comparative statics and fixed point theorems. I will assume familiarity with these to the level covered in the Math Camp required of incoming Econ PhD students.

## Course Logistics

The course page on Canvas is the definitive source for course content, dates, deadlines and other things.

I will update Canvas regularly to reflect which subsections of each chapter were covered in each lecture. For the first two-thirds of the class, I will post lecture notes that supplement MWG/ the other texts. Assignments, solutions, sample exams, extra readings etc will all be posted on Canvas. In short, check it often!

## Required Texts and Materials

The required text for this course will be the venerable

- Mas-Colell, Andreu, Michael Whinston & Jerry Green: Microeconomic Theory, Oxford Univ. Press, 1995, ISBN: 0195073401 (hereafter, “MWG”).

I strongly recommend buying a *hardcover* copy of this book. Even if you don’t do theory, its encyclopaedic coverage means that it’s a handy book to keep on your shelf for as long as you’re a researcher in economics (most faculty I know own two copies or more).

The following are all supplemental texts. You do not need to buy any of them. However, this material is non-trivial and deep, and so it is useful to look at other treatments. Below I list a few with their pros and cons (in my opinion).

- Rubinstein, Ariel, Lecture Notes in Microeconomic Theory (2006, updated regularly online): on the web, cheap. On the downside, only covers consumer theory.
- Jehle, Geoffrey & Philip Reny: Advanced Microeconomic Theory, (3rd Edition, 2011). Prentice Hall. On the upside this can be more accessible than MWG, and has most of the same coverage of topics (for the purposes of this course). The accessibility also means it may skip technical details.
- Kreps, David: Microeconomic Foundations I: Choice and Competitive Markets. Princeton University Press. Pros: It’s Kreps. Cons: The book doesn’t cover game theory or mechanism design, which is the subject of 508.
- Varian, Hal: Microeconomic Analysis. W.W. Norton & Company. Pros: Extremely chatty, lots of economic intuition. Cons: May skip on technical details.

While MWG does contain a mathematical appendix that covers roughly everything we’ll use, you may prefer a fuller introduction to the tools:

- Simon, Carl & Lawrence Blume: Mathematics for Economists.
- Vohra, Rakesh: Advanced Mathematical Economics.

Finally, note that some version of this course at every major economics PhD program. Google around—you’ll find lecture notes, homework problems, final exams, sample prelims etc., often very high quality.

## Course Requirements

The grade for this course will be determined by two midterm exams (during regular lecture hours, Thursday Sept 21, and October 26) and a cumulative final (TBA). The midterms and final are all open book, open notes. Sample exams with suggested solutions will be made available in advance.

There are also homework sets that I will assign roughly weekly. I expect all of you to turn in written or (preferably) typed up solutions.<sup>1</sup>

One to two questions in each problem set will be designated for grading. However I require you to turn in the entire problem set. Turning the rest in is mainly a commitment device to keep you on track. Indirectly, however, most of your learning will be determined by your work on these problem sets.

To get the most out of the homeworks: First attempt these problems solo—and I mean a serious good faith effort. Once you have done that, try as a group. If/ when that fails, contact your TA or me. If you find the solution yourself or contribute non-trivially to a group, you will learn to think; even if you miss finding the solution yourself after hours of trial, you learn what lines of thinking lead to dead-ends.

Note that the problems assigned are often from MWG, and there are past solutions etc floating around. You're wasting your time if you just copy those and hope to learn by osmosis.

Your grade will be determined by:

- Homeworks: 10%.
- Midterms: 25% each.
- Final: 40%.

## Absence Policies

There will be no make-up dates for the midterms. In case you miss one of the midterms for a documented illness or emergency, the score of your final exam will receive the weight of the midterm you missed in addition to its own weight. If your religion interferes with one of the exam dates, please let me know within two weeks from the first day of class.

## Disability Support Services

If you have a documented disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with Disability Support Services (Allen Center, Room 111 / [adarice@rice.edu](mailto:adarice@rice.edu) / x5841) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs, in that order. I am not allowed to make accommodations that are not first approved by Disability Support Services.

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<sup>1</sup>Again, to the extent you plan to do research in economics, learning to type up technical arguments in LaTeX or a related typesetting environment may be something you want to invest in now.

# Syllabus

We intend to cover, in the order listed below, the following chapters of MWG. Parts of each chapter will be omitted. You are not responsible for material we do not cover in class.

1. Chapters 1,2,3: Consumer Theory.  $\sim 4$  weeks.
2. Chapter 5: Producer Theory.  $\sim 1$  week.
3. Chapter 6: Choice Under Uncertainty.  $\sim 1$  week.
4. Chapter 10: Partial Equilibrium.  $\sim 1$  week.
5. Chapter 15,16: General Equilibrium.  $\sim 3$  weeks.
6. Chapter 19: General Equilibrium under Uncertainty.  $\sim 2$  weeks.
7. Chapter 11: Public Goods and Externalities.  $\sim 1$  week.