Intermediate Microeconomics

Microeconomic theory seeks to explain how individual consumers and producers make decisions and how those decisions interact in markets. At the end of the course, you should be able to use microeconomic analysis to predict the behavior of individuals and markets. You should also be able to explain why and how these predictions follow from the assumptions of microeconomic theory. Finally, you should understand the strengths and weaknesses of the market system: why it is likely to be desirable in many circumstances, when it produces undesirable outcomes, and how we might fix those problems.

The economic framework for predicting individual behavior emphasizes tradeoffs and the interaction between the goals and desires of decision makers and the constraints or limits on their choices. For instance, consumers choose what to purchase to make themselves happy given their limited income. This framework lends itself naturally to mathematical analysis. In the language of calculus, much of what we do this semester is known as constrained optimization. We will rely heavily on the idea that the best choice is the one that equates the marginal benefit of doing a little more of an activity with the marginal cost of doing a little more of that activity. As we proceed through the semester, we will see how this principle applies in a variety of decision making settings. Moreover, we will emphasize both how this rule can be derived mathematically and the intuition behind it.

We will also spend considerable time comparing the choices individuals make with the choices society as a whole might like them to make. We will see that in certain restrictive circumstances, individual's choices will lead to outcomes that satisfy one definition of how society *should* make decisions (Pareto efficiency). We also see that in many real world situations, individual choices will not satisfy this definition.

Grading

Your grade will have three components:

- 35% Problem sets
- 30% In-class exams (Feb 26 and Apr 2)
- 35% Comprehensive self-scheduled final exam

Schedule

The course meets Monday, Wednesday, and Friday from 11-12:10 in McConnell B05. In addition, each student ***must*** attend one of the three sections. The section meetings will provide an opportunity for you to ask questions and practice working through problems, but I will also present some new material and extensions of topics covered in lecture during sections.

My office hours are Tuesdays 2-3 pm and Wednesdays 3-4pm, Seelye 305. I am also available by appointment other times. Please come see me or schedule an appointment early on in the course if you feel like you are struggling with the material.

Course Policies/Logistics

Disclaimer: The policies in this syllabus are subject to change. Any changes will be announced to the class and posted on Slack.

Prerequisites

This course has two prerequisites: Introductory Microeconomics (150) and Calculus (Math 111). Some of you may have met these requirements with AP, IB, or A-level credit, but if you have not met both prerequisites, please see me immediately. The course assumes that you are comfortable with the following math skills: algebraic manipulation of functions, graphing, calculating the slopes of lines, exponents (including fractional and negative exponents), solving systems of equations, differentiating a wide range of functions, and using calculus to optimize functions of one variable. We will be extending the differentiation and optimization techniques used in Math 111 to more complex situations, so you need to be comfortable with the basics learned in Math 111. Please see me if you are unsure about your math background.

Textbooks

The one required text for the course is Microeconomics by Pindyck and Rubinfeld. You may use either the 7th, 8th or 9th edition (with the caveat that I have not reviewed a copy of the 9th edition myself). Two copies of the 7th edition will be on reserve in Young. There is an accompanying study guide which is not required but may be a useful source of practice problems. Please note that neither the text or the studying guide include calculus based problems. If you use a non-standard edition of the text as well, please visit the library and photocopy the table of contents to make sure that my chapter references match your text. (There is at least one edition of the text that students have used in the past that presents the chapters in a different order).

You may want to check prices online before purchasing at the bookstore. Since the 9th edition was recently released, prices on the older editions have fallen substantially.

I have also placed two different Intermediate Microeconomics texts, described below, on reserve. They cover much of the same material but are organized differently. The topic list at the end of the syllabus identifies the chapters in these two books that cover similar material for each class session. Please note that both books are somewhat "harder" texts in that they cover more material and present much of the material more mathematically. In each chapter in these books, you will notice additional material not covered in your text or in lecture. Naturally, you are not responsible for this added material.

Microeconomics by Nechyba follows an unusual organization. Each chapter is divided into an A and a B section. The A section focuses on graphical and intuitive explanation and is relatively similar to Pindyck and Rubinfeld in terms of difficulty, although it emphasizes different portions of the material. In particular, it develops consumer theory in more detail and includes less information on oligopoly and industrial organization. The B sections of the chapters are a useful resource if you would like a textbook based description of the calculus content of the course.

Intermediate Microeconomics by Varian is a non-calculus based book like your main text, but is presented in a more mathematical fashion and again emphasizes different portions of the material and covers some of the material differently. We will use Varian's presentation of intertemporal choice in place of the Pindyck and Rubinfeld presentation of the material, but this excerpt will be made available electronically.

Missed exams

Please check the dates of the exams (Feb 26 and Apr 2) and come see me by Feb 8 if you have any unavoidable conflicts. If a genuine emergency arises, notify me as soon as possible.

Problem Sets

There will be six problem sets in the course. The questions will be posted in individual channels on Slack. Please use this channel to ask any clarifying questions about the problem set. You should turn in your answers in hard copy at the ***beginning*** of class on the date indicated.

I will count the five highest problem set scores you earn during the semester (dropping the lowest problem set score). Barring truly exceptional circumstances, late problem sets will not receive credit. In general, illness or missed classes do not count as exceptional circumstances. Please note that the problem sets comprise a substantial portion of your course grade; failing to turn in more than one of the problem sets will lower your grade significantly.

The problem sets are designed to be learning experiences, giving you practice working with and applying the concepts from class. The questions are intentionally challenging and not simply examples from class with different numbers. In many cases, you may need to think about a problem for a while before you will see how to answer the question. Expect it to take you considerable time to work through the problem sets and begin work on them early. I recommend setting aside regular times to work on your problem sets regardless of whether the next problem set is due that week.

Working with your study group or other classmates on the problem sets is encouraged, but you must prepare and submit your own answers. Copying your answers directly from another student and allowing a classmate to copy your problem set are both violations of the Honor Code. If you have any concerns about what constitutes independent work, please discuss them with me prior to the due date of the problem set. I encourage you to ask and answer general questions about how to approach problem set questions on Slack but ask that you do not post specific answers.

Please note that your problem sets are due in class on Fridays and that my office hours are on Tuesday and Wednesday. This separation is intentional and I am not generally available for last minute questions on Thursday.

Email/Slack

We will not be using Moodle in the course this semester. Instead, I will use Slack for all course announcements and to exchange all course files. You can use Slack in a browser, but I highly recommend installing the desktop and/or mobile apps. You can customize the way the program notifies you about various activity in the app. This is the first semester I will

be using Slack with a class, so please be in touch about any issues or concerns you have with how it's working in the class. While I am committed to using Slack, I'm very open to adjusting the way we use the program to make sure it's effective for all of you.

I encourage you to use Slack to ask me questions unless they would apply only to you. If you have individual questions, you can email me at ssayre@smith.edu. Please note that I do not get instantaneous notifications from either my email or Slack. I generally check both a couple times a day and will make every effort to respond to your questions within one business day (i.e. within 24 hours during the week and by the end of the day Monday for messages sent over the weekend). If you have a detailed question, it is generally better to ask in lecture, come to see me in office hours, or make an appointment.

Class Attendance

I do not explicitly take attendance in either lecture or section and will not lower your grade for missed classes. That said, it is virtually impossible to succeed in this course without regularly attending ***both*** lecture and section and I will not provide make-up lectures during office hours. If you must miss a course meeting, review any lecture notes posted on Slack, and check with a classmate on what was covered, and any important announcements that were made. If you have specific questions about the material *after reviewing the notes and the relevant textbook material*, please come see me during office hours.

Office Hours

I will have regular office hours on Tuesdays from 2-3pm and on Wednesdays from 3-4pm. I strongly encourage you to come by and ask questions about any course material you have questions about. I am also available by appointment at other times, but please note that I am not available for individual appointments either immediately before class or after 4:15pm.

Academic Honesty

As in any other course at Smith, you are required to adhere to the provisions of the Honor Code. I take academic honesty very seriously and will report any suspected violations of the Honor Code to the Honor Board. The two in-class exams in the course will be unproctored. The use of any unauthorized material or any discussion or copying of answers is, of course, strictly forbidden.

Spinelli Center for Quantitative Learning

The Spinelli Center is located in Seelye 207 and can be a valuable resource for you in the course. Morgan Barney is the master tutor assigned to this course. She will have regular hours in the Center that will be posted on Slack once the schedule is finalized. Feel free to ask her for general help explaining concepts from the course and for help on problem sets. She will not give you the answers to the problem sets but can help point you in the right direction.

Error Checking Policy

Throughout the course of the class, I will post a number of documents on Slack, including problem set answer keys, lecture notes, and additional explanatory handouts. I make every

effort to have these handouts be fully correct but occasionally I miss an error on editing. If I notice a substantive error myself, I will update the document and post an announcement on Slack. To maximize the probability of everyone having access to error free materials, I will offer a small amount of extra credit on a problem set for finding and notifying me of errors in any document.

I will award 2 percentage points of extra credit on the next problem set to the first person emailing me about a substantive error. I will award points to only one person per error and each student can earn extra points only twice during the semester. While I appreciate you pointing out smaller errors like typos that do not change the meaning of the document, I will only award points for errors that I deem *substantive* and likely to cause confusion or mistakes if they remain unfixed.

Tips

This course will build on concepts you have seen in Economics 150, but will develop the concepts in much more detail and with more mathematical rigor. It can be a challenging course, but it can also be very rewarding. Five keys to doing well in this class are:

Study group — Form a study group with some of your classmates and commit to meeting regularly throughout the semester. While some students are able to master the material in the course alone, the overwhelming majority of students in the past have found working with peers on problem sets indispensable. Most students who have really struggled with the course are ones who try to "go it alone." This semester, I will be providing resources to help you form study groups and get the most out of your meetings.

Keep up — Concepts build on each other and we will move quickly through topics. If you wait until right before a problem set due date or exam to make sure you understand the material, you may find yourself overwhelmed. Try to summarize the main ideas from each lecture in your own words regularly and ask questions if you're confused. Start work on the problem sets as soon as they are posted.

Recreate — Try to recreate the graphs and examples from lecture and the book without your book or notes. Carefully study the diagram, then close your notes or book and try to recreate the graph. The goal is not to be able to draw from memory, but to understand why each line or curve was placed on the diagram and what it tells us. As you draw the diagram, try to think of what would cause the lines or curves in the diagram to move and how they would move.

Practice — There is no substitute for working through as many problems as you can. Although they are not assigned, try to work through the problems at the end of the chapters. Many of the answers are in the back of your text. If you want additional problems to work through, consider buying the study guide or ask me for other resources.

Ask for help If you find yourself struggling with a concept, ask for help as soon as you can. I'm always available during my office hours, but I'm also happy to make appointments outside of office hours. You can also visit the Spinelli Center or ask your classmates for help. Consider posting a question on Slack if you're stuck or have a question about a topic.

Explain Practice explaining in addition to doing problems. To succeed in this course, you need to not only be comfortable solving specific problems, but also to understand why your answers are correct and to apply concepts in different contexts. Practice explaining new concepts and diagrams to your classmates (take turns), your roommates, your friends, your parents or anyone else you can convince to listen. Read the economic articles in the newspaper, the Economist, or other sources and try to use the models from class to explain the article.