Colby College EC 223
Microeconomic Theory (Fall 2021)
Professor Samara Gunter

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Office Hours: Mondays 12:30-2:00 PM, Tuesdays 2:00-3:30 PM, Fridays 11:00 AM - 12:00 PM
Course Website: Moodle

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Teaching Assistant Office Hours: Wednesdays 7:00-9:00 PM (Alice, location TBA); Thursdays 4:00-6:00 PM (Conrad, location TBA)

Building the Microeconomics Toolbox

Microeconomic theory is the basis for all topics courses in microeconomics. Labor, public, development, and environmental economics, game theory, and international trade all rely heavily on the models we will learn in this course, and macroeconomic models that use representative agents and firms also have a microeconomic foundation.

Consequently, microeconomic theory is a "toolbox" course in which you will be exposed to the formal mathematical models used in economics. We will model how individuals, firms, and even governments choose between options, and we will revisit the concepts of equilibrium and efficiency. We will use examples from a variety of fields to connect the material to real-life situations.

This course emphasizes the problem-solving skills and advanced economic intuition that you'll need in other upper-level economics classes. Economics is a powerful tool for understanding real-world situations, but its power lies in its general applicability. To be able to use economic models effectively, you must become familiar with their basic, abstract forms and practice applying them to specific situations. You may be unfamiliar with this kind of problem solving, and may find it challenging or even frustrating at times. Learning to be an effective problem-solver requires frequent practice and opportunities to attempt new challenges, just like being a skilled athlete, a talented musician, a compelling public speaker, or a creative artist. The best way to become skilled at solving difficult problems is by solving difficult problems. By the end of the course, you may be surprised at your own ability to tackle complex material.

Prerequisites

- Current economic theory relies heavily on calculus tools. Economics 133 and either Mathematics 125, 130, or 135 are enforced prerequisites for EC 223.
- You will need to be comfortable taking partial derivatives. I will teach you how to take partial derivatives during the first week of class. You must master this material immediately because it is fundamental to successfully understanding the mathematical methods used in the rest of the course.
- In practice, many students find that the calculus requirements of the course are fairly simple. Often, students who struggle with the math have difficulty with algebra. If you find it difficult to work with exponents or solve systems of equations, you may find that it takes time to get comfortable with the material in this course. If you are struggling with the math, please come and see me as soon as possible—don't wait several weeks before asking for help.

Required Textbook

- Reading the textbook will: (a) help you understand the economic intuition behind the models we learn; (b) provide computer-generated, mathematically correct graphical representations of graphs that are more precise than I can produce on a whiteboard; and (c) offer more examples of applications than I can offer in class.
- We will use *Intermediate Microeconomics with Calculus: A Modern Approach* by Hal Varian.
- Older versions, sold under the title *Intermediate Microeconomics: A Modern Approach* contain the same material and graphs but put the calculus in each chapter's appendix. I will teach using calculus, but because you'll rely on the book primarily for intuition, it is perfectly fine to purchase an older used edition of the non-calculus version of the book.
- Reading assignments will be posted on Moodle each week.

***Optional* Workbook**

- If you would like additional practice problems beyond those I provide in class, you can purchase *Workouts in Intermediate Microeconomics* by Theodore C. Bergstrom and Hal Varian.
- This workbook accompanies the textbook and provides many practice problems. The problems in this workbook were designed to accompany the textbook, but are slightly different ones I might assign. Still, they can be helpful in mastering the material.
- If you would like to look at the workbook before deciding whether to purchase it, you may view a copy in my office.

Assignments and Grades

Grades will be based on (a) daily homework; (b) in-class group problem-solving exercises; (c) four 50-minute tests in class during the semester; and (d) a 1.5-hour final exam.

Daily Homework Problems (roughly 30 total; drop lowest 4)	10%
In-Class Problem Solving Exercises	10%
In-Class Tests (4 50-minute tests; 15% each)	60%
Final Exam (1.5-hour in-person exam)	20%
Total	100%

Notes on Grading

- *Final Course Grades:* Final course grades will be the weighted average of individual course components as specified above. Final course grades in the 90%-100% range will receive A-/A/A+, grades in the 80%-89.999% will receive B-/B/B+, grades in the 70-79.999% will receive C-/C/C+, etc.
- *Tracking Your Grade During the Semester:* All grades will be recorded in the Moodle gradebook and will be visible to students throughout the semester.
- *Rescaling Exam Grades:* If the class performance on an exam results in low numerical scores and I believe the exam was particularly difficult, I will consider rescaling the exam. On the other hand, if I feel that the exam was of similar difficulty to past exams, then I will not rescale grades. As with other subjective aspects of grades, my choice to curve the exam and/or the way in which I choose to curve it are not open to negotiation. However, I will

clearly explain how I convert the raw score on each exam to the rescaled score. I will never rescale in ways that lower scores.

- *Negotiation:* Subjective aspects of grades are not negotiable. I am happy to discuss your work and help you improve your performance on subsequent assignments, but I will not reconsider grades unless I have made computational errors. I cannot maintain consistency if I allow re-grading, and it is not fair to students who don't request that I re-grade their work to change the grades of students who complain.

Daily Homework

- I will assign homework problems each lecture day. These daily homework assignments will allow you to practice solving problems using calculus, algebra and graphs and will be good practice for exams.
- These will be due at the *beginning* of the next class period at 9:00 AM (Section A) or 10:00 AM (Section B). Please turn in neat, *stapled* hard copies.
- Daily homework will be graded by the teaching assistants using a 3-2-1 grading system, where "3" means you've mastered how to apply the concept to the homework problems; "2" means you're practicing the concept and have partially applied it; and "1" means the concept was introduced, but you haven't been able to apply it successfully to the homework problems. Students who do not turn in homework on time will receive "0"s.
- I will not grant extensions for homework. However, I will drop your four lowest homework grades.
- Daily homework grades will be converted into a semester homework grades using the following formula:
- $HWGrade = 85 + (\sum_{i=1}^{n} t_i - 2n)\frac{24}{3n-1n}$, where t_i is your grade (0-3) on Homework i and n is the number of homeworks given during the semester. Using this formula, a student that got 2s on all homework would earn a semester homework grade of 85. A student that received 3s on all homework would earn a semester homework grade of 97.
- You may work together on homework, but you must turn in your own copy that shows your own work and phrases written answers in your own words. You must list the names of other students with whom you collaborated. Working together can be very helpful when learning to solve problems. However, one of the hardest parts of intermediate microeconomics is learning how to begin complicated, multi-step problems. If you rely on the people around you to tell you how to start solving a problem, you will do much worse than you expect on exams.

In-Class Group Problem Solving Exercises

- We will hold group problem solving sessions in class several times during the semester. You will be assigned to groups and will generate a group solution to a problem. In most cases, these problems will be open-ended: there is not a single right answer. Instead, this is an opportunity to show how you can creatively apply the models from class in meaningful ways.
- These exercises are also an opportunity for me to observe how you work in a group. When I serve as a reference for students looking for jobs or seeking admission to study abroad programs or graduate school, I am almost always asked about the student's ability to work in groups and to think creatively. I pay attention to your group participation so that I can answer these questions.
- I will grade in-class problem-solving exercises on a 10-point scale and all group members will

receive the same grade. Grades will depend on the extent to which your group's solution demonstrates thoughtful and creative application of economic theory.

- Participation in these exercises is required. Any student with an unexcused absence on a day on which we do in-class group problem solving activities will receive a grade of 0 (zero) on the assignment.

In-Class Tests

There will be four in-class (50-minute) tests on the following dates:

- Wednesday, September 29
- Friday, October 22
- Wednesday, November 10
- Wednesday, December 1

Final Exam

The final exam will be held at the time and place specified by the College registrar.

Missed Tests

- Students who miss a test due to extenuating circumstances such as illness will have that test excluded from their grade. More weight will be placed on the other semester tests and the final exam. The weight placed on homework and in-class group problem solving will not change. For a student that missed one test due to an excused absence, the remaining 3 in-class exams would be worth 18.46% instead of 15% and the final exam would be worth 24.62% instead of 20%.
- In the event that a student misses two or more tests due to extraordinary extenuating circumstances, I will work with the student and advising dean to determine an appropriate approach.
- Make-up final exams will be offered during the make-up final exam timeslot only. College policy prohibits instructors from allowing students to take final exams early.

Accommodations

- I will happily provide learning and testing accommodations as specified in accommodations letters from Colby's Office of Access and Disability Services. Contact that office via accommodations@colby.edu for information about how to share accommodations letters with faculty this semester.
- Faculty do not have access to the information in student accommodation letters unless students choose to share those letters with faculty, so please plan accordingly.
- I strongly suggest that students who anticipate that they may wish to use accommodations to which they are entitled share their letters with me by Friday, September 17. I will not necessarily be able to honor requests for accommodations if the request and documentation for those accommodations has not been provided at least 72 hours in advance of the needed accommodation.
- *Extra Time Exam Accommodations:*
    - Whenever possible, students with extra time accommodations will take exams at times that overlap the timeslot during which the rest of the class takes the test. For example, if the test is scheduled for 9:00-9:50, a student with 1.5 extra time accommodations might take it from 8:35-9:50, or from 9:00-10:15. The vast majority of students in this

class have free time in their academic schedules either before or after their EC223 section and should be able to test at times that overlap with the general test time. In cases in which this is not possible due to conflicts with other courses, I will work with students to make alternate arrangements.
    - Students with extra time accommodations can take the semester tests with other students in Diamond 153 if their schedules allow. Students must notify me in advance to arrange the time range in which they will take the test so that I can be on campus with sufficient time to administer it to the earliest test-takers.
    - Students who require particular spaces in which to test, or with extra time accommodations who cannot complete the test before 11:00 am due to schedule conflicts, may take the test in Colby's Testing Center. Students must request this at least 72 hours in advance of the test.
- If you require other accommodations, please email me to schedule an individual appointment (in person or via Zoom) to discuss your situation. It is your responsibility to communicate with me sufficiently far in advance to allow me to plan for the necessary accommodations.

Notetaking

- Your lecture notes will be one of your most important resources for studying in this class. I use lecture time to outline models, demonstrate problem solving, describe key pieces of economic intuition, and illustrate the connection between math, intuition, and graphs. You should take careful notes each day.
- Each day, two students will be responsible for taking notes to share with the class. These notes will be accessible to everyone: those who are absent can use them to catch up on course material, and anyone can use them as a tool to review and improve their own notes. On your assigned day, be sure to write neatly and organize your notes well.
- After class, you will have 48 hours to submit your notes to the Moodle Student Notes folder. Notes should be uploaded a single PDF file. I find it useful to use the camera and a PDF converter app on a smartphone to create the PDF file, but campus photocopiers will also scan notes and convert them to PDF format.
- Each student will be responsible for taking notes once during the semester. Dates will be assigned at the beginning of the semester.
- Students who fulfill the notetaking assignment (which requires that the notes pass a minimum quality threshold) may replace their lowest daily homework grade with a "3."

Office Hours

- I will hold office hours each week. I appreciate students' efforts to meet during my office hour times so that I can preserve other blocks of time for research, course preparation, grading, and College administrative and service work. However, I will make appointments outside of my normal office hours when necessary.

Private Office Hours: Mondays 12:30-2:00 PM, Fridays 11:00 AM - 12:00 PM, or by appointment, Diamond 361 (or Zoom, by appointment)

- Monday and Friday office hours are private in the sense that I will speak with students one at a time (unless you are comfortable having another student join you) on a first-come, first-served basis. There is no need to schedule an appointment.

Group Office Hours: Tuesdays 2:00-3:30 PM, Diamond 361

- Group office hours are held on a drop-in basis and are appropriate for questions about the course content. Students may enter and leave at any time, so long as there are 3 or fewer students in my office at all times. This is not a private office hours environment. It is ideal for questions that many students are likely to share (e.g., homework questions), so that I can answer many students' questions at one time.

Teaching Assistant Office Hours: To Be Announced (generally held in the evenings 2 days per week)

- The teaching assistants are also available to help with homework and lecture material.

Class Participation

- Class participation deepens your understanding of the course material and prepares you to interact with others in a professional capacity. I will sometimes call on students. I do this in order to assess my own effectiveness and your understanding. I often ask questions that have multiple answers or that will require you to think for a minute before answering. It is okay to give wrong answers: that is part of the learning process.
- If you strongly object to being called on in class, you may see me in office hours and ask me not to call on you. However, you should keep in mind that participating in group conversations is a useful professional skill and that there are many advantages to overcoming your discomfort.

Academic Integrity & Consequences for Academic Dishonesty

- Honesty, integrity, and personal responsibility are cornerstones of a Colby education and provide the foundation for scholarly inquiry, intellectual discourse, and an open and welcoming campus community. These values are articulated in the Colby Affirmation and are central to this course. Students are expected to demonstrate academic honesty in all aspects of this course.
- Academic dishonesty includes, but is not limited to: violating clearly stated rules for taking an exam or completing homework; using resources that are not permitted (i.e., notes on a closed-book exam); presenting another's work as one's own; plagiarism; buying or attempting to buy solutions, papers or projects for a course; fabricating information or citations; knowingly assisting others in acts of academic dishonesty; misrepresentations to faculty within the context of a course; and submitting the same work, including an essay that you wrote, in more than one course without the permission of instructors.
- Academic dishonesty is a serious offense against the college and *will be* reported to the academic integrity coordinator if detected. Sanctions for academic dishonesty are assigned by the academic review board and may include failure on the assignment, failure in the course, or suspension or expulsion from the College.
- Several course policies will be enforced to minimize opportunities for academic dishonesty during exams. I will provide specific instructions for each assignment that clearly state the expectations and rules for that assignment.

Semester Schedule (subject to change)

<u>Week 1</u>

W 9/8—Introduction, partial derivatives (video lesson)

F 9/10—Budget constraint

<u>Week 2</u>

M 9/13—Preferences

W 9/15—Utility functions
F 9/17—Utility and preferences, continued

Week 3
M 9/20—Optimal choice
W 9/22—Optimal choice, income and price changes
F 9/24—Optimal choice, income and price changes, continued

Week 4
M 9/27—In-Class Group Problem Solving 1
W 9/29— In-Class Test 1
F 10/1—Slutsky decomposition

Week 5
M 10/4—Slutsky decomposition, continued
W 10/6—Endowment budget lines
F 10/8—Edgeworth boxes, Pareto efficiency

Week 6
M 10/11—Contract curves in the Edgeworth box
W 10/13—Equilibrium in the Edgeworth box
F 10/15-- Equilibrium in the Edgeworth box, continued

Week 7
M 10/18—Colby Fall Break
W 10/20—In-Class Group Problem Solving 2
F 10/22—In-Class Test 2

Week 8
M 10/25—First & Second Welfare Theorem
W 10/27—Market demand and supply; general vs. partial equilibrium
F 10/28—Production: Robinson Crusoe model

Week 9
M 11/1—Production w/ and w/out trade (Robinson Crusoe model)
W 11/3—Equilibrium w/ production & consumption
F 11/5— Production functions; profit maximization

Week 10
M 11/8—In-Class Group Problem Solving 3
W 11/10—In-Class Test 3
F 11/12—Cost functions; cost minimization

Week 11
M 11/15—Long run considerations
W 11/17—Profit maximization with market power (monopoly)
F 11/19—Cournot duopoly

Week 12
M 11/22—Cournot duopoly, continued
Thanksgiving break

Week 13
M 11/29—In-Class Group Problem Solving 4
W 12/1—In-Class Test 4
F 12/3—Additional topics TBD

Week 14
M 12/6—Additional topics TBD
W 12/8—Additional topics TBD
F 12/10—In-Class Group Problem Solving 5