

# ECON 641: Microeconomic Analysis

Lucas Goodman

Spring 2021

University of Maryland, College Park  
Master of Science in Applied Economics Program  
Washington, DC location: 1400 16th Street NW, Suite 140

E-mail: [lgoodman@umd.edu](mailto:lgoodman@umd.edu)

Class hours Tuesday evenings via Zoom,  
additional asynchronous material (See Section 1.1)

Web: <https://www.elms.umd.edu/>

Office Hours: Thursday 7:30-8:30pm  
(via Zoom)

T.A.: Camila Andrea Galindo Pardo, [cgalindo@umd.edu](mailto:cgalindo@umd.edu)

T.A. Office Hours: Monday 5-5:45pm  
(via zoom, see below)

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## 1 Overview

This course covers microeconomic analysis applied to public policy problems with an emphasis on practical examples and how they illustrate microeconomic theories. Policy issues such as pollution, welfare and income distribution, market design, industry regulation, price controls, tax policy, and health insurance are used to illustrate the abstract principles of microeconomics.

Students will master microeconomic theory at a level of mathematical rigor befitting a professional master's program in applied economics. The level of mathematical rigor will be higher than in a typical undergraduate intermediate microeconomics course, but much lower than in the first year of a "top 40" economics PhD program like the University of Maryland's. We will make extensive use of differential calculus. Students will apply microeconomic theory to a broad range of questions relevant to public policy.

### 1.1 Class meetings

Due to the COVID-19 pandemic, this course will be taught online. The lectures will be delivered synchronously and asynchronously. The synchronous component will consist of two weekly Zoom meetings on Tuesday evenings. The first meeting will be from 6:45pm to 7:30pm. The

second meeting will be from 8:30pm to 9:15pm. The asynchronous component will consist of several pre-recorded lecture videos, each of modest length (10 minutes or so). These lecture videos will be posted to the class website (see below) shortly after each class meeting. Students are equally responsible for both portions.

### 1.1.1 T.A. Office Hours

The T.A., Camila Galindo Pardo, serves as the T.A. for both sections of ECON 641 (the two “DC” sections and the one “College Park” section). She will hold three separate office hours per week:

- **Monday 5:00pm-5:45pm, which will primarily serve students in this section.**
- Monday 5:45pm-6:30pm, which will primarily serve students in the other section.

You are free to attend either these office hours. However, it will be far more productive for everyone if you attend 5:00-5:45pm office hours, which is designed for our section. Both sections teach similar material, but not necessarily in the exact same order. It is likely that the two sections will be covering different material in a given week. By attending the 5:00pm-5:45pm office hours, you are more likely to be able to get help regarding the topics that are being taught *that week* in our section.

## 1.2 Website

Copies of the course syllabus, your grades, videos for the asynchronous portion, and other relevant links and documents will be posted on the course’s ELMS/Canvas website. You can access the site via [www.elms.umd.edu](http://www.elms.umd.edu). You will need to use your University of Maryland “directory ID” and password. I will make use of the ELMS page for class notes, announcements, asynchronous lecture videos, and for assigning and collecting problem sets.

## 1.3 Email

The University has adopted email as the primary means of communication outside the classroom, and I will use it to inform you of important announcements. Students are responsible for updating their current email address via <http://www.registrar.umd.edu/current/> (Under the first major heading of "Online Transactions" there is a link to "Update Contact Information".)

I will do my best to respond to email within 36 hours.

## 1.4 Prerequisites

Admission to the Master of Professional Studies in Applied Economics program. Note: The program admissions requirements include a grade of at least B in an introductory microeconomics course and a grade of at least B in an introductory calculus course.

## 2 Required Text and Supplementary Material

The required text for this course is:

- Hal Varian, *Intermediate Economics with Calculus, a Modern Approach*, W.W. Norton, 2014. ISBN: 978-0-393-92394-0

It is important that you buy the version that has “**with Calculus**” in the title.

A good free supplement for additional sample problems:

- Ted Bergstrom and Hal Varian, *Workouts in Microeconomic Theory*. Online: [www.econ.ucsb.edu/~tedb/Courses/GraduateTheoryUCSB/workouts.pdf](http://www.econ.ucsb.edu/~tedb/Courses/GraduateTheoryUCSB/workouts.pdf).

Another useful online resource for review of Calculus is Kahn Academy:

- Tutorial on Differential Calculus:
  - [www.khanacademy.org/math/differential-calculus](http://www.khanacademy.org/math/differential-calculus)
- Applications “Skill Check” on Optimization
  - [www.khanacademy.org/math/differential-calculus/derivative-applications](http://www.khanacademy.org/math/differential-calculus/derivative-applications)

Additionally, presentations during the semester will cover applications from the following textbook:

- Walter Nicholson and Christopher Snyder, *Intermediate Microeconomics and Its Application*. Cengage Learning; 12th edition (1133189024).

I will provide access to applications from Nicholson and Snyder.

Lastly, I will upload lecture notes to ELMS, *after* the relevant material is covered in class. This timing is intentional: it is important to take your own notes during lectures in order to help understand the material. The lecture notes are a good resource for you to compare your notes after the fact, to help clear up any areas where you may be unsure.

### 3 Course Objectives

The program has 7 general learning outcomes for students:

1. Ability to understand, evaluate and analyze economic data
2. Ability to understand and interpret statistical evidence from economic data
3. Ability to apply empirical evidence to assessing economic arguments
4. Ability to apply macroeconomic theories to policy discussions
5. Ability to apply microeconomic theories to policy discussions
6. Ability to communicate economic ideas to a broader audience
7. Ability to evaluate the effectiveness of policy programs using sound economic techniques

The learning outcomes that pertain to ECON 641 are outcomes 5, 6, and 7.

## 4 Course Grading and Expectations

- 25% Final Exam.
- 30% Problem Sets.
- 15% Two in-class quizzes.
- 15% Presentation.
- 10% Presentation Online Discussion Participation.
- 5% Online Reading Quizzes.

Each of these elements will be given a letter grade based on my judgment and the relative performance of the class. These letter grades will be converted to a GPA score according to usual scale, given in the first half of the table at the top of the next page. Those GPA scores will be averaged (with the weights given above). Those averages will be converted to letter grades based on the cutoffs in the second half of the table at the top of the next page.

Conversion of component letter grades into component percentages

A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.5
F	0

Conversion of final GPA score  $x$  into course letter grade

$x \geq 3.8$	A
$3.5 \leq x < 3.8$	A-
$3.2 \leq x < 3.5$	B+
$2.8 \leq x < 3.2$	B
$2.5 \leq x < 2.8$	B-
$2.2 \leq x < 2.5$	C+
$1.8 \leq x < 2.2$	C-
$1.5 \leq x < 1.8$	C
$1.2 \leq x < 1.5$	D+
$0.7 \leq x < 1.2$	D
$0.2 \leq x < 0.7$	D-
$x < 0.2$	F

## 4.1 Final Exam

The Final Exam will be given from 6:45 to 9:30pm on Tuesday, May 25. All material covered during the semester is fair game for the final exam. The exact structure of the exam (e.g., the time limit and time window) will be provided closer to the date of the final exam. The exam will be open book and open notes, subject to restrictions discussed closer to the exam date. Collaboration between students on the final exam is strictly forbidden.

## 4.2 Presentations

A supplemental textbook by Nicholson and Snyder, contains more than 100 concise “Applications” of microeconomic theory. These applications are typically one-page descriptions of how the theory in that section of the book has been applied by economists in a variety of contexts. The Applications presented in the book typically cite one or two academic journal articles upon which the applied work is based. The Applications also typically suggest a couple interesting questions and/or policy challenges to think about. Additionally, I will supplement these applications with a small number of short articles from other sources. Students are to present the application from the textbook (or one of the given other sources) as well as provide additional details on at least one of the cited economics papers.

We will use the textbook Applications from Nicholson and Snyder (available on ELMS) as the starting points for student presentations that look a bit further into the issues they raise.

During the first week of class, students will be assigned into pairs. In particular, students may post their two or three most preferred topics in the discussion board. Students have until 5pm on Friday to form pairs on their own, and email me with them. After that point, I will assign pairs as I see fit.

Each pair will record a presentation and upload the recording to ELMS. The due date for each presentation will depend by topic, but will roughly correspond to when we cover the material in class. Those not presenting are required to read the application in advance of the presentation. All other students are expected to participate in online discussion (as discussed below) of the presentation. I will provide instructions on how to upload and share the recordings.

Some of the presentations early in the semester will be done the week after the relevant material has been covered in class. Some of the presentations, however, will be due on the same day that the relevant material is being covered in class. This means that the student presenters must read ahead and prepare their presentations before sitting through my lecture on the relevant material. This is one example of the difference between graduate and undergraduate education. Our classes are seminars. That means that all members of the group share responsibility for teaching each other. I will bear more responsibility for teaching in ECON 641 than any other member of the seminar. But each of you will also bear some responsibility – especially on the day you present your Application.

Expectations for presenters:

1. The presentation should involve slides (developed jointly by both members of the pair), but the presenter should do more than simply read the slides.
2. The presentation should be designed to last about 10 minutes.
3. Each member of the pair should have a substantial speaking role.
4. The presentation should be uploaded by 6:45pm on the due date (which will be a Tuesday when we have class).

5. This grade will be based on the clarity and quality of the presentation, the presenter's ability to incorporate in my pre-presentation feedback, and also the presenter's answers to questions posed in the online discussion. A more detailed rubric is provided on ELMS.

Prior to the Tuesday when the presentation is due, students should send me complete drafts of PowerPoint slides as email attachments by 4:00 p.m. on the Sunday prior. Please send them to [lgoodman@umd.edu](mailto:lgoodman@umd.edu). I will send feedback by Monday morning. You need to revise your presentation based on my feedback.

### 4.3 Problem Sets

Students will turn in homework by the beginning of each class (except for the first class and the last class). The homework will generally consist of 2 to 4 problems. Problem sets are all weighted equally and assigned a point score out of 10. To give you all a safety valve, I will drop each student's lowest-scoring problem set.

It is possible that some of the problems will relate to material to be covered on the day that the homework problem is due. This is intentional. This requires students to study the material on their own prior to my lecture. Undergraduate courses often claim to expect students to read the material before coming to class. Graduate courses expect students to do more than passively read the material before coming to class.

Sometimes it will be the case that a solution for one of the assigned homework problems is readily available online – even before the homework is due. This is also intentional. I'm sure you will learn a lot from studying the solution for a challenging problem. You must still write out your own version of the solution and turn it in. The person who grades the homework will also have access to the online solution. Less than full credit will be given when it is obvious that a student's work was mindlessly copied.

Students are encouraged to work with each other on the homework, but each student must turn in his or her own work individually.

Problem Sets are to be hand written (or typed, but not required) and submitted electronically on ELMS. To do so, you can either scan or take clear pictures with your phone and submit them to ELMS no later than the start of the class period in which they are due. The phone App for ELMS (Canvas) has a feature to photograph and directly submit your assignments, or you may just save the image to your computer and upload via a web browser (e.g., Chrome). If you have any problems submitting your assignment in this way, please let me know.

### 4.4 Online Discussion

By Thursday at 6:45pm, each student pair should send me a joint email with a question, constructive criticism, or comment regarding each presentation that was made the prior Tuesday. I will use these comments/questions (modified slightly) as prompts for opening a thread on the discussion board. The student pairs should actively collaborate (via Zoom, phone, text, etc.) in order to generate this comment/question.

By Friday morning, I will take these questions/comments and use them as the first post in several discussion threads on the ELMS website. The presenter then has 48 hours (that is, until Sunday at 9am) to respond to each thread. Each student then has until the beginning of next class (Tuesday at 6:45pm) to post **one** additional comment or question in whichever thread they like. (Even if there were multiple presentations, the student should still contribute only one additional comment in a given week.) Students should not follow up in a thread until the presenter has

responded to the initial question/comment. I will also contribute questions and comments as I see fit.

Every student in the class will get something between 0 and 5 points based on my assessment of their contribution to the online discussion. People who do not contribute anything of merit will get zeros. People who make insightful and constructive contributions will get 5's. Because I am asking you to make only one follow-up comment, I expect it to be of high quality.

There is no required discussion during the first week of class (3/2-3/9), though I advise students to post their top few preferred presentation topics in order to find a partner.

Additionally, there is no student presentation on 3/9. However, I will use part of my lecture as the jumping off point for the discussions that week. I will explain further during class on 3/9.

#### **4.5 Quizzes**

There will be two quizzes at roughly the one-third and two-third points of the course; see schedule for exact dates. The quiz will consist of problems broadly similar to the problem sets. Prior to each quiz, I will discuss in more detail the material that is covered. The quizzes will be open note and open book, subject to restrictions that I will discuss closer to the quiz date. Collaboration between students is strictly forbidden. The exact structure of the quizzes (e.g., the time limits and time windows) will also be provided closer to the quiz date.

#### **4.6 Reading Quizzes**

Before the start of most classes, a reading quiz will be assigned consisting of 5 to 10 multiple choice questions covering the reading for that week. The quiz can be done at any point during the week, but is to be completed no later than 6:45 on class days. There is no quiz before the first class or the final exam class.

#### **4.7 Attendance and Class Participation**

Attendance in the Zoom meetings is not mandatory, but you are responsible for catching up on any material from missed classes. This class moves quickly and it is quite easy to fall behind even from missing a single session. My teaching style relies on the feedback of students. I encourage you to utilize our class time to make clear to me what topics are worthy of particular emphasis and which items can be moved on more quickly. Your alertness and participation in class will earn you a small bump to your final grade.

#### **4.8 Outline of schedule and deadlines for a typical week**

The following table condenses some of the information that was described more fully above. This table considers the schedule for Wednesday 4/14 through Tuesday 4/20. Other weeks are similar, though there may be differences due to (e.g.) quizzes or other circumstances.

Day		Summary
Wednesday	4/14	
Thursday	4/15	6:45pm: My deadline for posting asynchronous lecture videos 6:45pm: Deadline for student pairs send me one comment per presentation based on 4/13 presentation
Friday	4/16	9am: My deadline for starting the discussion threads
Saturday	4/17	
Sunday	4/18	9am: 4/13 presenters' deadline to respond to each thread 4pm: 4/20 presenters' deadline to send me draft of slides
Monday	4/19	9am: My deadline to give feedback to 4/20 presenters
Tuesday	4/20	Zoom classes: 6:45pm-7:30pm and 8:30pm-9:15pm 6:45pm: Deadline for 4/20 presenters to upload presentation 6:45pm: Deadline for reading quiz 6:45pm: Deadline for problem set 6:45pm: Deadline for each student (other than 4/13 presenter) to make one additional comment (per presentation) on a discussion thread.

## 5 Other Standard Policies for the Program and the University of Maryland

### 5.1 Workload

Mastering the material covered in this course requires a significant amount of work outside of class. Students should expect to spend more time outside of class than in class – typically at least twice as much time. The courses in our DC program are 12-week courses that cover all the same material as a traditional semester-long 3-credit course (15 weeks). The compressed schedule makes it possible to complete our degree in just 15 months if you take 2 courses each term. But the compressed schedule also implies an accelerated pace with an average of 25% more work per week in a given course ( $\frac{15}{12} = 1.25$ ). The normal full-time load in a master's program is 3 courses per semester, or 6 courses per year. The weekly work load when taking 2 of our DC courses per term is equivalent to the load from 2.5 "normal" 15-week courses - so  $\frac{2.5}{3.0} = 83\%$  of a full-time load. Students who take 2 courses per quarter in our program complete 8 courses per year. So over the course of a year, taking 2 courses per quarter in our DC program is equivalent to 133% of a full-time load ( $\frac{8}{6} = 1.33$ ).

### 5.2 Academic Integrity

The University of Maryland has a nationally recognized Code of Academic Integrity. You should inform yourself about the UMD policies related to academic misconduct: <https://www.studentconduct.umd.edu/home/current-students> Cases of academic misconduct, including plagiarism and giving or receiving unauthorized assistance on exams, will be referred to the UMD Office of Student Conduct. If found responsible for academic misconduct, students can be subject to sanctions. The standard sanction for graduate students found responsible for cheating on exams is expulsion from the university.

The exams in this course will ask students to affirm the UMD Honor Pledge: "I pledge on my honor that I have not given or received any unauthorized assistance on this assign-

ment/examination.”

### 5.3 Student Conduct

Students are expected to be active contributors to the live class when attending and should be prepared to ask and answer questions during live lectures and to participate in the online discussion boards. Students are expected to refrain from any behavior that would distract the instructor or fellow students during live lectures and to conduct themselves professionally at all times.

### 5.4 Excused Absences

The University of Maryland’s policy on excused absences is posted here:

- <http://www.president.umd.edu/administration/policies/section-v-student-affairs/v-100g>

Please note: If you miss any class meetings for any reason, you are still responsible for all material covered during the meeting you missed. It is your responsibility – not the instructor’s – to get yourself caught up in the course. Instructors routinely facilitate things by posting lecture notes, etc.

If you need to miss an exam or other graded course requirement because of illness, injury, or some other emergency: Follow doctor’s orders and get documentation. Get in touch with the instructor as soon as you’re able – preferably prior to missing the exam or deadline. Communicate with the instructor to make up the course requirement as soon as possible. You are entitled to recover before you make up the course requirement, but you are not entitled to extra days to study beyond the time the doctor’s note says you’re incapacitated. If you are incapacitated for more than a week or so beyond the end of the term, your grade in the course will be an “Incomplete”. In such cases you must negotiate a plan with your instructor for completing the course requirements. Once you make up the course requirement the instructor will change your "I" to the appropriate letter grade.

### 5.5 School Closing and Delays

In the unlikely event that weather or some other event causes a delay or closing, information can be found on the campus website and the snow phone line: (301) 405-SNOW (405-7669). The program director will always announce cancellation information to the program as an announcement on the program’s ELMS/Canvas site. This will generally be done by 1:00 p.m. on days when weather or other factors are an issue.

### 5.6 UMD Counseling Center

Sometimes students experience academic, personal and/or emotional distress. The UMD Counseling Center in Shoemaker Hall provides comprehensive support services that promote personal, social, and academic success. The cost of these services is covered by the fees you already paid when you registered for classes, and there is no additional charge if you use the services. Proactively explore the range of services available, including the Counseling Service, Accessibility and Disability Service, Learning Assistance Service, and the Testing Office, all described at <http://www.counseling.umd.edu/>

## 5.7 Students with Disabilities

The University of Maryland does not discriminate based on differences in age, race, ethnicity, sex, religion, disability, sexual orientation, class, political affiliation, or national origin. Reasonable accommodations will be arranged for students with documented disabilities. Students who have an accommodations letter from the Accessibility and Disability Service (ADS) should meet with me during the first week of the term to discuss and plan for the implementation of your accommodations. If you require reasonable accommodations but have not yet registered with ADS, please contact the Accessibility and Disability Service at 301-314-7682 or [adsfrontdesk@umd.edu](mailto:adsfrontdesk@umd.edu).

## 5.8 Academic Progress

The UMD Graduate School requires that students maintain a GPA of at least 3.0. Students whose cumulative GPA falls below 3.0 will be placed on academic probation by the graduate school. Students on academic probation must ask the program's director to petition the graduate school if they want to remain enrolled in the program. The petition must include a plan for getting the student's GPA up to at least 3.0. Students who do not live up to their plan can have their enrollment in the program terminated without having earned the degree. Note: a grade of "B" corresponds to a GPA of 3.0. A grade of "B-" corresponds to a GPA of 2.7.

## 5.9 Disclaimer

As my day job, I am an employee of the Department of the Treasury. The Treasury Ethics Office requires me to add the following disclaimer:

"The views expressed in this course are mine personally, and they do not necessarily reflect the views of the Department of the Treasury or the U.S. Government."

## 6 Schedule

Week	Date	Section Topics	Chapters (Varian)	Assignment
1	3/2	Preferences and Utility	2, 3, 4	
2	3/9	Lagrangian Method, Derivation of Demand	5, 6, 7.1-7.5	PS1
	3/16	No class — spring break		
3	3/23	<b>Quiz 1</b> , Slutsky Equation,	8	PS2
4	3/30	Labor Supply, Consumer Surplus, Market Demand	9, 14, 15	PS3
5	4/6	Intertemporal Choice, Uncertainty	10, 12	PS4
6	4/13	Firm Theory	19, 21, 22, 23	PS5
7	4/20	Supply and Demand	16	PS6
8	4/27	<b>Quiz 2</b> , Exchange	32	PS7
9	5/4	Monopoly, Monopsony, and Market Power	25, 26, 27	PS8
10	5/11	Imperfect Competition and Game Theory	28, 29, 30	PS9
11	5/18	Externalities, Public Goods, Asymmetric Info	35, 37, 38	PS10
12	5/25	<b>Final Exam</b>		