

# Microeconomic Analysis

ECON 641  
Master of Science Program in Applied Economics  
University of Maryland - College Park, Washington DC Location  
Fall 2023

Instructor:	Dr. Aaron Finkle
Email:	afinkle@umd.edu
Meeting Times:	Thursdays 6:45p-9:30
Office Hours:	5:45p Thursdays in the DC office, other times by Zoom appointment
TA:	Wantain Huang
TA email:	whuang11@umd.edu
TA Office Hours:	Wednesdays 5:30p-6:30 (via Zoom)
DC Program coordinator:	Herman Byrd (DCmasters-econ@umd.edu)

## 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 Website

Copies of the course syllabus, your grades, 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.

### 1.2 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".)

### 1.3 Expectations

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.

This class will have 11 in person sessions. In addition to in-person meetings, there will be online presentations and a weekly discussion board with required participation. Additional asynchronous videos will also be used regularly as supplementary material.

Each week will have a short quiz on ELMS due before the start of class covering the readings for that session. There will be a problem set due before each meeting as well except for the first week and final exam week. During the semester, each student will be providing one 10-minute presentation to the class either in person or recorded and posted to ELMS.

Class sessions will be streamed and recorded using Zoom. Zoom meetings, including TA office hours and any extra scheduled meetings will be posted in Zoom tab on ELMS. To access Zoom meetings, you must log in through [umd.zoom.edu](http://umd.zoom.edu) or by choosing “SSO” at the login screen and accessing your UMD account (it will take you through the two-factor authentication process). This is to assure only authenticated users can access the class. Recordings will appear in the “cloud recordings” tab (passwords are listed below the link to the session).

## 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:

- Jeffrey Perloff, *Microeconomics: Theory and Applications with Calculus, 5th edition*. 2020 Pearson

It is important you buy the version that has “**with Calculus**” in the title as the non-calculus version is quite different in notation. While earlier editions are mostly similar, if you choose to use an earlier edition, you are required to check for any relevant differences.

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 textbooks:

- Walter Nicholson and Christopher Snyder, *Intermediate Microeconomics and Its Application 12th edition*. 2014 Cengage.
- Austan Goolsbee, Steven Levitt, Chad Syverson, *Microeconomics Second Edition*, 2016 MacMillan.

I will provide the readings from these for you via ELMS.

### 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

Your grade will be calculated with the following weighting:

<b>Requirement</b>	<b>% of Grade</b>
1. Final Exam	35%
2. Problem Sets	25%
3. Midterm	15%
4. Presentation Project	5%
5. Early Math Assessment Quiz	10%
6. Presentation Discussion Participation	5%
7. Online Reading Quizzes	5%

#### 4.1 Final Exam

The Final Exam will be on the last class day. The exam will be designed to take students about 2 hours to complete, but students will have the entirety of the class time to complete the exam. The exam will consist of 3 or 4 problems similar to those on the Problem Sets but with some variations. All material covered during the semester is fair game for the final exam. The final exam is closed book, though students are permitted to use a scientific, non-programable calculator. The final exam will be graded as a percentage.

#### 4.2 Presentations

Supplemental material is provided on ELMS from textbooks by Nicholson and Snyder, Goolsbee et al, and two other texts contain a series of “Applications” of microeconomic theory. These applications are typically one-page descriptions of how the theory in that chapter of the book has been applied by economists in a variety of contexts, including references to the academic journal article on the topic. The Applications selected specifically 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.

Students will give a short 8 to 10 minute presentation at some point during the semester either in front of the class or a recorded presentation posted to ELMS. I will ask that students to provide their preferences for presentation week during the first week of class. I will then make a schedule of presentations and assign whether the presentation will be online or in class. Presentations will use the textbook applications as a starting point to then discuss the cited research paper. This is one example of the difference between graduate and undergraduate education. Our classes have seminar style components. 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 class. But each of you will also bear some responsibility – especially on the day you present your Application.

Central to this assignment is presenting the material from the application and the associated **economics journal article**. A presentation that does not adequately cover the journal article referenced in the application will be incomplete. In addition to describing the article, presentations are to address specifically the distinction between *positive* economic implications and *normative* ones.

In the week before the class of your presentation, you must choose the topic for your presentation from the Applications posted on ELMS.:

1. Email me no later than **Friday** with your selected topic from that section. A list of the Applications for that week will be posted on ELMS. If two students choose the same Application that week, the selection will be determined on a first to email me basis. If the Application has already been selected, you will need to choose another one. Applications should cover material from that week's course material or from previous material covered in lecture (see schedule of topics below)
2. Once your selection has been confirmed, you can read the cited academic paper, and prepare a draft of your slides.
3. Email me no later than Sunday at noon a draft of your slides. I will then provide you with feedback by Monday evening.
4. Email me the final version of your slides by 6pm on Thursday of the class day so that I may upload it and have it ready for the presentation. For recorded presentations, you will need to email me the recording or provide a Google Drive link if the size is too big for email.

This grade will be based on the clarity and quality of the presentation, the presenter's ability to incorporate in my pre-presentation feedback, quality of slides, inclusion of outside material, and also the presenter's answers to questions posed during the presentation.

### 4.3 Problem Sets

Problem set assignments are provided on ELMS for each week. The homework will always consist of 2 or 3 analytical problems. Problem sets are all weighted equally and assigned a point score out of 60.

Problem set answers are to be submitted by scanning your written answers and submitting them to ELMS. Typing then on a computer is not recommended as there is a lot of math notation. However, if anyone is interested in learning how mathematical notation is done, many economists use LaTeX, a typesetting program. I am happy to provide individuals with material on this. However, it will often take a lot more time to complete assignments and can be a distraction from learning the content.

Typically, one of the problems will relate to material covered during our previous meeting, while one of the other 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. The TA 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 strongly encouraged to work with each other on the homework, but each student must turn in his or her own work individually. Those who simply copy answers from others are in violation of the code of academic integrity and is considered a form of cheating. It is also a very poor way of learning the material and will become evident when it comes to quizzes and the exam.

#### **4.4 Early Math Assessment Quiz**

Microeconomic theory relies heavily on a solid understanding of differential calculus and solving optimization problems. It is critical that students are able to solve these problems in order to progress through the class. In a scheduled class meeting (see schedule for dates at the bottom of syllabus), there will be a calculus and optimization quiz to help identify students who need to spend more time reviewing these topics. The math quiz will take 45 minutes during the start of class.

Solutions to the math quiz will be posted immediately after the quiz is taken. The grades will be available before the next class session. Students who do not perform adequately on the Math quiz will need to attend the TA's regularly scheduled office hours that next session, which will be devoted to working on the material from the quiz. Those students will be provided with the answer key to the quiz immediately after the class quiz, and are expected to review those answers in preparation for the TA's office session.

This math assessment quiz is critical to identifying those who are not keeping up with the mathematical tools used in Microeconomics. It is scheduled early in the term specifically to allow for a chance to "right the ship" and get back on track with the material. The relatively low grade weight of the quiz is to allow for this not to throw off the semester grade and provide ample opportunity to those who are dedicated to the class to improve.

#### **4.5 Midterm Quiz**

There will be one midterm (see schedule below) during the first half of the class session it is scheduled. The midterm will consist of two or three problems similar to the problem sets. The material for the quiz can be from anything covered prior to that class. The quiz will take 50 minutes. Students are not permitted to discuss or work together on the Midterm.

#### **4.6 Reading Quizzes**

Each week other than the final week, there will be a brief 8 to 10 question reading quiz with multiple choice/fill in the blank/numerical problems on the readings for the coming class. These are intended to be relatively simple, but push students to make sure to have the reading done, and began to work on some of the problem solving for that chapter. They are a low stakes way of gauging your

understanding of the reading and help pinpoint areas of confusion. These are due by 6pm Thursdays (in preparation for that class).

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

Attendance is not graded, 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.

To ensure an effective learning environment for the whole class, refrain from texting and non-class related computer use (checking email, etc). Please avoid disrupting other students by coming in late or leaving midway in the class. (If you must leave early, let me know in advance and sit near the door.) Laptops for note-taking are okay, but only if you restrict its use to coursework.

#### **4.8 Grading Scale**

At the end of the semester I will calculate the weighted average of each graded component of the course outlined above. I will look at the distribution of total course points across students and assign letter grades in a way that respects the ordering of numerical course grades. I will decide where to draw the lines between different letter grades according to my professional judgement.

While individual assignments will not have a letter grade, as the course makes progress, I will convey to the class how grade distributions stand up to any one date and what letter grades might be expected based on that distribution should the class have ended at that time with no commitment to that times numerical-to-letter-grade conversion holding at the end of the class (numerical score distributions may fluctuate substantially, which means that numerical-to-letter-grade conversions will vary as well depending on any one time's numerical score distribution).

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

Policies related to all graduate courses at the University of Maryland are posted on this page of the Graduate School's website:

<https://gradschool.umd.edu/faculty-and-staff/course-related-policies>

Please familiarize yourself with these policies related academic integrity, non-discrimination policy, accessibility, absences and accommodations, grading, academic standing, grievance procedures, and other important policies.

#### **5.1 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. The University creates an "@umd.edu" email address for every graduate student. All official UMD communications will be sent to students at their "@umd.edu" email address. You are responsible for reading your @umd.edu email address, including ELMS/Canvas Announcements I send to the class. You should make sure ELMS/Canvas Announcements and messages are forwarded to an email address that you check regularly. Failure to

check email, errors in forwarding email, and returned email due to “mailbox full” or “user unknown” will not excuse a student from missing announcements or deadlines. I will do my best to respond to email within 36 hours.

## **5.2 Contact Hours**

Three credit master’s-level courses at the University of Maryland require a minimum amount of contact between instructors and students. Our courses’ 12 weekly meetings only satisfy 80% of the university’s contact requirement. The other 20% is satisfied by weekly mandatory and graded online contact. In principle, the contact hours requirement could be satisfied by scheduling 3 additional 150-minute meetings per term, or 6 additional 75-minute meetings, or 10 additional 45-minute meetings. But in practice the contact hours requirement is satisfied by the weekly online discussions. The weekly online discussions are a more flexible way to ensure that our program’s courses in DC provide the same level of student-instructor contact as the traditional 15-week face-to-face version of the same course when it is taught on campus in College Park.

## **5.3 Course Website**

Copies of the course syllabus, student’s grades, and other relevant links and documents will be posted on the course’s ELMS/Canvas website. Students can access the site via [www.elms.umd.edu](http://www.elms.umd.edu). They will need to use their University of Maryland “directory ID” and password.

## **5.4 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 ( $15/12 = 1.25$ ). The normal full-time load in a master’s program is 3 courses per semester, or 6 courses per year. The weekly workload when taking 2 of our DC courses per term is equivalent to the load from 2.5 “normal” 15-week courses - so  $2.5/3.0=83\%$  of a full-time load. However, the DC program takes just 1 week off between terms. 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 “normal” full-time load in the traditional semester-based program ( $8/6 = 1.33$ ).

## **5.5 Academic Progress**

The 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 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 be forced to leave the program 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.

## **5.6 Excused Absences**

If you miss any class meetings for any reason, it is your responsibility to work with the instructor to make sure you catch up on the missed material. 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.

## **5.7 School Closings and Delays**

Information regarding official University closing and delays can be found on the campus website and the snow phone line: (301) 405-SNOW (405-7669) The program director will also 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. When classes need to be canceled during the semester, we make every effort to schedule makeup classes.

## **5.8 UMD Counseling Center**

Sometimes students experience academic, personal and/or emotional distress. The UMD Counseling Center in Shoemaker Hall provides free, comprehensive, and confidential counseling / mental health services that promote personal, social, and academic success. All Counseling Center services are completely free for enrolled students. Proactively explore the range of services available at the Counseling Center, including the Counseling Service and Accessibility and Disability Service described at <http://www.counseling.umd.edu/>

## **5.9 Graduate Academic Counselor**

The UMD Graduate School also has an academic counselor available to support students who are having difficulty navigating mental health resources on campus, are considering a leave of absence and/or need assistance finding mental health care off campus. The Graduate Academic Counselor also facilitates bi-weekly Graduate Student Circle Sessions which provide an opportunity to learn about resources and connect with other graduate students. Students can learn more about the Graduate Academic Counselor by going to: <https://gradschool.umd.edu/gradcounselor>

## **5.10 Course Evaluations**

Near the end of the term, you will receive an email inviting you to submit a voluntary and anonymous course evaluation. Your feedback on courses will be very helpful in improving the quality of instruction in our program.



### **5.11 Access to Building**

There is a smartphone app that can be used to enter our building after normal business hours. The program coordinator will provide information about this. We will also provide information about the code for entering the front door of our suite. Please make sure you are receiving the ELMS-Announcements that we send out to the program about these and other important matters.

### **5.12 Academic Integrity**

The University of Maryland has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards applicable to all undergraduate and graduate students, and you are responsible for upholding these standards as you complete assignments and take exams in this course. Please make yourself aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information see [www.studenthonorcouncil.umd.edu](http://www.studenthonorcouncil.umd.edu).

Students are not permitted to use homework posting sites (e.g., Chegg, Coursehero, etc) for help. Posting copyrighted work there isn't permitted. This includes all of my work (problem sets, exams, notes). "Using" includes even looking at the material. The use of past semester's problem set answer keys (which are not meant to be shared on these sites or elsewhere) is in violation. I do provide a bank of all my previous exams and answer keys on ELMS for you to use as you wish, but the point of problem sets is to come up with your own answers. Violation of academic integrity may result in expulsion from the program, and/or failure of the entire course.

### **5.13 Student Conduct**

Students are expected to treat each other with respect. Disruptive behavior of any kind will not be tolerated. Students who are unable to show civility to one another or myself will be referred to the Office of Student Conduct. You are expected to adhere to the Code of Student Conduct.

### **5.14 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).

### **5.15 Covid Policies**

Up-to date information about UMD COVID-19 policies and guidance are posted at <https://umd.edu/4Maryland>

Given the evolving nature of the pandemic, the guidance and polices are subject to change. The plans are always coordinated with state and county health officials, with additional guidance provided by the University System of Maryland. The focus will always be on the health and well-being of our entire campus community. We strongly urge all students, staff and faculty to read announcements they receive about COVID related guidance and policy, and to stay familiar with the

information. We thank you all for your individual efforts to help protect the collective health of our entire community.

## **6 Schedule of Topics**

Updates will be made on ELMS as needed and is subject to revision. PS=Problem Set, RQ=Reading Quiz. An online session will be held on Zoom around weeks 3 or 4. This will be determined in the first week and information will be posted on ELMS.

Meeting #	Date	Section Topics	Readings (Perloff)	Assignment	Other
1	8/31	Competitive Market Model (Supply and Demand)	2	RQ1	
2	9/7	Utility and Optimal Choice;	3	PS1,RQ2	
3	9/14	(Zoom Class Meeting) Optimization (Lagrangian), Derivation of Demand	4	PS2, RQ3	
4	9/21	Slutsky Decomposition, Consumer Welfare	5	PS3, RQ4	
5	9/28	Risk and Expected Utility	16	PS4	Math Quiz
6	10/5	Production and Profits	6	PS5, RQ5	
7	10/12	Cost Minimization and Competitive Supply	7, 8	PS6, RQ6	
8	10/19	Perfect Competition Applications, Welfare Analysis	9	PS6, RQ7	
9	10/26	Monopoly and Strategic Pricing	11, 12	PS7	Midterm Quiz
10	11/2	Game Theory	13, Gibbons	PS8, RQ8	
11	11/9	Imperfect Competition, Externalities and Commons	14, 17	PS9, RQ9	
12	11/16	Final Exam			Final Exam

RQ=Reading Quiz (due by start of class session), PS=Problem Set (due at start of class session)