ECO 220: Microeconomic Analysis, Fall 2021
Department of Economics and Finance
Centre College

Course Meets: Mondays, Wednesdays & Fridays, 08:00 – 09:00 am (Session a)
09:10 – 10:10 am (Session b)
Crounse 302

Contact Details
Instructor: Prof. Henrique Veras
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Office Hours: Tuesdays and Thursdays 02:00-04:00pm
Or by appointment (Schedule an appointment here)

Course Description
Microeconomics is *micro* because it captures the motivation behind *individual* economic agents – person, household, firm or government – and how they interact. Microeconomics can help us answer questions like:

- As a kid, how and why did you allocate your allowance between saving and spending?
- How does knowing about consumer demands help firms make production decisions?
- Do markets always allocate resources perfectly? How might firms in an industry organize themselves, and how might that impact consumers?
- What happens when individuals find themselves in strategic situations – when my well-being depends on the actions of someone else's actions in addition to my own?

These questions look familiar to everyone who's taken an Econ 101 course, but in this course, you will learn the value of building mathematical models to address them.

Mathematics allows us to build much more *precise* models and allow us to strip a model down to its most important components and interactions. It is crucial to remember that although models – especially those expressed mathematically – may seem overly simplistic at first, the art of being an economist is to impart economic meaning and conclusions to the equations, derivatives and graphs we derive.

Course Learning Goals
By the end of the course, students should be able to:

- Understand the theory behind models of consumer behavior, firm behavior and game theory.
- Master algebraic and calculus tools needed to work with these models and to understand policy implications.
- Apply concepts to new and possibly unfamiliar real-world situations.
- Understand how microeconomics acts as a fundamental foundation for further 300-level and 400-level courses.

Learning Goals
In this course, you will complete the following objectives:

- Representation: You will learn how to translate real-life phenomena (e.g. firm behavior, consumer behavior) into quantitative models.
- Implementation: You will use calculus, algebra, graphing and other mathematical methods and tools to solve problems.
- Applications: You will make judgments, draw conclusions and discuss policy implications from quantitative models.

Prerequisites

There are two prerequisites, both of which are **essential**.

The first prerequisite is that you must have completed a principles of economics course (ECO 101).

The second prerequisite is that you must have calculus proficiency by having completed MAT 145 or equivalent. You *must* be comfortable with the following from *Day 1*:

- What a derivative of a function represents (i.e., you understand it's the slope of a tangent line touching a function at a particular point);
- How to find the derivative of a function in one variable, for a variety of functions (polynomial, exponential, logarithmic, etc. Trigonometry is not necessary.);
- How to maximize or minimize a function in one variable using calculus.
- Algebraic manipulation and solving a system of equations.

If you're in doubt about your mathematical abilities for this course, please speak to me as soon as possible – don't wait until after add/drop.

Textbook and Course Materials

Textbook. The required textbook for this course is *Microeconomics: Theory and Applications with Calculus*, 5th edition, by Jeffrey M. Perloff (ISBN 978-0-13-518377-9). It is very important that your book is the version *with calculus.* You can buy the book from the Pearson store.

There are older editions of the book for purchase on sites such as Amazon. **You are welcome to use them**, but I have not looked at them and cannot vouch for how similar they are to the fifth edition.

Moodle. As a registered student, you should be able to view the Moodle page for this course. This is the site where **I will post lecture notes, assignments, additional study material and announcements for this course**. It is your responsibility to check the site often. You can also check your grades.

Lecture notes will generally be posted in advance of the lecture we cover them in. I recommend that you print them out and bring them to class so that you can take notes on them. The notes tend to be *incomplete*, as we will fill in the missing graphs, math and text during the lecture. If you miss a lecture, it is your responsibility to find a classmate who attended class to fill in the blanks.

Grading

In-class Activities (5%). There will be regular, unannounced in-class activities. These can take the form of a worksheet or small-group exercise. The activities are a way to gauge attendance, and so credit will generally be given for participation, also there may be some weight given to accuracy in certain activities.

Assignments (35%). There will be about 4-5 assignments over the course of the semester. Each assignment carries equal weight. I will drop the lowest grade among your assignments for the purposes of calculating your final grade. **You must submit your assignments through the platform Gradescope by the end of the due date (instructions and important information on Moodle). Late assignments after 24 hours past the due date will NOT be accepted.**

Lateness will be penalized according to the following rule:

Within 1 hour of lateness: 20% penalty.

After 1 hour (within 24 hours): 30% penalty.

After 24 hours: not accepted

Exceptions can be made for documented reasons.

You are permitted (and encouraged) to work in a group of three students or fewer on assignments, but please hand in your own assignments, especially in questions with a written component.

Midterm Exam (30%). There will be one in-class, closed-book midterm exam. The midterm will be held on **October 15th**. The Exam is closed-book and can be a combination of short- and long-answer questions.

Final Exam (30%). There will be a closed-book final exam, which runs **from 08:00 am to 11:30 am on Thursday, Dec. 9.** It is up to you to ensure that travel plans do not interfere with your ability to take the final.

Grade Breakdown: I plan to use the following point range for final grades:

		B+	87-89.9	C+	77-79.9		
A	93-100	B	83-86.9	C	73-76.9	D	60-69.9
A-	90-92.9	B-	80-82.9	C-	70-72.9	U	0-59.9

Additionally, if the course average is below a B, I will increase grades so that the average is a B.

Attendance

Students are expected to attend the entirety of all scheduled meetings of the course. Missing more than three class meeting days will result in a 1/3 letter grade deduction from the course grade (e.g., B+ to B), with additional deductions for every additional day absent. The only absences that are considered excused are those approved by the Associate Dean.

If you have documented, verifiable and serious reason to miss an exam, you must provide the proof to me within 48 hours of the exam, or you will receive a zero for it. Depending on the reason for excused absence, you will either take a make-up exam, or the weight of a missed midterm will be shifted to the final exam. An excused absence for the final will be made up for according to the policy of the college.

Help Outside of Class

Please do not hesitate to see me in my office hours or make an appointment to meet with me to discuss any questions or comments you may have about the class. If you're having difficulty, please see me as soon as possible and don't wait until just before exam time.

Another resource available to students is the Learning Commons. There are **tutors** available to help you with material in the course. Please visit https://www.centre.edu/centre-learning-commons/ for more details.

RELIGIOUS HOLIDAYS:

Although classes may be held on religious holidays, students may have excused absences for any conflicting religious practice. Students who will miss class in order to observe a holy day must notify me **well in advance** and arrange to make up any work missed. This general policy applies to all religious holidays observed by students and is not restricted to those observances recognized as major holidays for our community.

ELECTRONICS:

Please silence all phones and plan to keep them put away throughout the duration of class. You are welcome to use your laptop or tablet during class to take notes or refer to online readings. However, as noted above, the success of this class is determined, in part, by your willingness to engage with the material and each other. Your use of your laptop or tablet should not come at the expense of your engagement with the class. At any point, I may ask that all electronic devices be completely put away.

-Centre College

ACADEMIC ACCOMODATIONS

Students with physical impairments and learning disabilities will sometimes need accommodations to help them have an equal opportunity to learn. These can include seating location preferences, permission to tape lectures, and extra time on tests and other assignments [at Centre, time-and-a-half is the norm]. Whatever accommodations are provided, if any, should be the result of a discussion between the student and the College's coordinator for disabilities, Mary Gulley (x5223), who will then prepare a signed Accommodation Notice (a laminated sheet) for the student to show professors when an accommodation is necessary. In any course, the instructor must sign the back of the Accommodation Notice before any accommodation can take effect. It is the student's responsibility to discuss any necessary accommodations with Dr. Gulley and to process completely the Accommodation Notice through her office as directed.

-Centre College

ACADEMIC INTEGRITY:

A high standard of academic honesty is expected of students in all phases of academic work and College life. Academic dishonesty in any form is a fundamental offense against the integrity of the entire academic community and is always a threat to the standards of the College and to the standing of every student. In taking tests and examinations, doing homework and laboratory work, and writing papers, students are expected to perform with honor. In any written exercise for College courses, students will be held responsible for knowing the difference between proper and improper use of source materials. The improper use of source materials is plagiarism, and, along with other breaches of academic integrity, is subject to disciplinary action.

If the instructor has a concern about a student's academic honesty, the Associate Dean must be notified. Students should consult the Student Handbook for a full description of breaches of academic integrity subject to disciplinary action.

-Centre College Student Handbook

STATEMENT OF INCLUSION:

All students are protected by law against any discrimination and harassment based on race, color, sex, marital status, religion, creed, national origin, disability, age, military status, sexual orientation, family relationship to an employee of Oberlin College, and gender identity and expression. The classroom should reflect an environment free of any type of discriminatory and exclusive behavior. Please refer to the [Office of Equity, Diversity, and Inclusion](#) for more relevant information.

CLASSROOM CIVILITY:

We pledge continuing efforts to build and strengthen a community enriched by our differences and founded upon our common humanity. Centre respects the right of all members of the community to express their individuality in a manner that is consistent with the dignity and welfare of others. Centre strives to create an environment where differences are celebrated rather than discouraged, where individuals have the opportunity to exchange ideas and share in the richness of mutual experience. By valuing the individual's total character over any single characteristic, Centre will maintain its unique community.

-Centre College Statement of Community

TITLE IX

Centre College is committed to a safe and healthy environment and, as such, will not tolerate sexual misconduct of any kind. In addition to violating school policy, any form of sexual misconduct is also a violation of federal and state law s. Sexual misconduct is a broad category of behaviors that includes but is not limited to sexual harassment, sexual violence, sexual exploitation, dating violence, domestic violence, stalking, cyber-stalking, bullying and cyber-bullying when based on sex or gender. If you (or someone you know) has experienced or experiences sexual misconduct, you are not alone. It is not your fault. Centre College has resources to support you including help with housing relocation, the imposition of no-contact orders, adjustments to course or work schedules to prevent contact, and filing a complaint with law enforcement as well as on- and off-campus confidential resources (including medical assistance and counseling services). Please be aware all Centre faculty members are

"responsible employees," which means that, in the interest of your safety and wellbeing, if you tell me about a situation involving sexual misconduct, I must share that information with Kay Drake, our Title IX Coordinator. From there, you are in control of whether you would like to go forward with a formal complaint. What is most important is that you are safe and have access to resources.

Here are some resources available to you. Please note that not all of these resources are confidential (see Step 3 here): Title IX Coordinator Kay Drake (X5467); Sexual Assault Prevention and Education Specialist Sarah Cramer (X5519); Ampersand: 859-253-2511; Department of Public Safety: 859-236-4357 (24/7); CentreNet: "Sexual Misconduct Resources & Support" (You'll find a fuller list of resources and options here, including the SMART anonymous reporting tool.) Centre College Counselors can be accessed during the day by calling 859-238-5530 or emailing counseling@centre.edu. For access to the after-hours Centre Counselor, students should call 859-238-5740.

Course Outline

Caveat: The course outline and the textbook coverage (in brackets) are subject to change according to how fast or how slow I go. You will not be expected to read everything in the textbook, just what is relevant to material we cover in lectures.

Part 1: Theory of the Consumer

WEEK 1:

Mon., 30 Aug.: Course Introduction

Wed., 1 Sep.: Introduction to Micro [Ch. 1]; Supply and Demand [Ch. 2].

Fri., 3 Sep.: Market Equilibrium; Elasticities [Ch. 2]

WEEK 2:

Mon.,6 Sep.: Policy Interventions; Taxes; Ceilings & Shortages [Ch. 2].

Wed., 8 Sep.: Consumer Preferences; Indifference Curves; [Ch. 3].

Fri., 10 Sep.: NO CLASS (Travel)

WEEK 3:

Mon., 13 Sep.: Utility Function; Budget Constraint [Ch. 3].

Wed., 15 Sep.: Constrained Consumer Choice [Ch. 3].

Fri., 17 Sep.: Constrained Consumer Choice [Ch. 3].

WEEK 4:

Mon., 20 Sep.: Behavioral Economics [Ch. 3]. Changes in Income on Demand [Ch. 4].

Wed., 22 Sep.: Changes in Prices on Demand; Substitution and Income Effects [Ch. 4].

Fri., 24 Sep.: Substitution and Income Effects [Ch. 4].

WEEK 5:

Mon., 27 Sep.: Consumer Welfare [Ch. 5].

Wed., 29 Sep.: Consumer Surplus [Ch. 5].

Fri., 1 Oct.: Labor Supply Problem [Ch. 5].

WEEK 6:

Mon., 4 Oct.: Production [Ch. 6].

Wed., 6 Oct.: Production; Costs [Ch. 6, 7].

Fri., 8 Oct.: No class (Fall Break)

Part 2: Theory of the Firm & Theory of the Market

WEEK 7:

Mon., 11 Oct.: Costs [Ch. 7].

Wed., 13 Oct.: Midterm Review

Fri., 15 Oct.: **MIDTERM EXAM**

WEEK 8:

Mon., 18 Oct.: Perfect Competition; Deriving Supply Curves [Ch. 8].

Wed., 20 Oct.: Perfect Competition; Deriving Supply Curves [Ch. 8].

Fri., 22 Oct.: Applications of the Perfect Competition Model [Ch. 9].

WEEK 9:

Mon.,25 Oct.: Monopoly; Market Power [Ch. 11].

Wed., 27 Oct.: Monopoly; Market Power [Ch. 11].

Fri., 29 Oct.: Pricing; Price Discrimination; Techniques of Market Power [Ch. 12].

WEEK 10:

Mon., 1 Nov.: Pricing; Price Discrimination; Techniques of Market Power [Ch. 12].

Wed., 3 Nov.: Game Theory; Static Games [Ch. 13].

Fri., 5 Nov.: Game Theory; Static Games [Ch. 13].

Part 3: Interactions in the Market

WEEK 11:

Mon., 8 Nov.: Game Theory; Sequential Games [Ch. 13].

Wed., 10 Nov.: Oligopoly; Cartels; Cournot Model [Ch. 14].

Fri., 12 Nov.: Oligopoly; Cartels; Cournot Model [Ch. 14].

WEEK 12:

Mon., 15 Nov.: Oligopoly; Stackelberg Model; Bertrand Model [Ch. 14].

Wed., 17 Nov.: Externalities [Ch. 17].

Fri., 19 Nov.: Externalities [Ch. 17].

WEEK 13:

Mon., 22 Nov: Flex day

Wed., 24 Nov.: No class (Thanksgiving).

Fri., 26 Nov.: No class (Thanksgiving).

WEEK 14:

Mon., 29 Nov: Asymmetric Information; Adverse Selection [Ch. 18].

Wed., 1 Dec.: Asymmetric Information; Adverse Selection [Ch. 18].

Fri., 3 Dec.: Review

Final Exam: Thursday, Dec. 9th, 08:30am-11:30am