

# Economics 310-1: MICROECONOMIC THEORY



Northwestern University ♦ Summer 2019

Professor James A. Hornsten

*j-hornsten@northwestern.edu*

(847) 491-8220

Kellogg Global Hub 3467

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## Class Meetings, Attendance and Communication

We'll meet 10:00 – 11:50AM on Tuesdays, Wednesdays & Thursdays in the **Kellogg Global Hub, Room 3301**. Refer to the attached schedule for important calendar dates. Although attendance is not mandatory, it is expected, and some material will be presented only during class or section (even if most of the notes are posted). If you do miss class, it is your responsibility to track down handouts, notes or any other information (especially regarding exams) you may have missed. When making your rational attendance choice, remember secondhand notes may not be clear or complete, lectures are not repeated in office hours, and much can be learned from our collective classroom experience. Your best way to contact me is e-mail, which I check regularly; please use ECON 310-1 in your subject line. Check Canvas and your NU e-mail daily for announcements and materials.

## Office Hours and Communication

I check e-mail regularly, so this is your best way to contact me; if you send email, please include ECON350 in the subject. I will use Canvas to distribute materials and make announcements so please check Canvas and your NU e-mail daily. During the summer, I may be available for drop-in office hours in KGH 3467 on Tuesdays and Wednesdays after class, though it is a good idea to email me to let me know you would like to come in. If this time doesn't work, we may be able to set up another time by appointment.

## Problem-Solving and Reading Quizzes in lieu of Teaching Assistants & Discussion Sections

In the shortened summer quarter there is not typically a teaching assistant or weekly discussion section, but we are still expected to cover the same amount of material. I want your ECON 310-1 experience to be comparable to that of students who take the course during the regular academic year, so we will adapt in three primary ways. First, I will spend less time lecturing and more time working through problems in class. Second, I will give you daily quizzes to encourage you to preview that day's lecture slides; your investment in reading outside of class will free up some class time for problem-solving. Third, you will need to spend a good amount of time outside of class – either on your own or with peers – working through problems from the textbook and old exams.

## Required Textbook, Readings and Equipment

- David Besanko and Ronald R. Braeutigam (2014) Microeconomics, 5<sup>th</sup> edition, John Wiley & Sons, ISBN 978-1-118-57227-6, [www.wiley.com/college/besanko](http://www.wiley.com/college/besanko)

New, used, and digital versions of the textbook are usually available at the Norris Center Bookstore for purchase or rent. This book is also used by Kellogg MBA's so there are likely used copies available nearby (or through Amazon, etc.). We will follow the 5<sup>th</sup> edition closely, but the 4<sup>th</sup> edition has identical end-of-chapter problems so it is a more affordable, yet very close, substitute. I will occasionally post additional readings (e.g., recent articles from major newspapers) on Canvas. You should obtain a 6-inch straight edge to draw graphs, as well as black pens or dark pencils for exams (we may use Crowdmark, an online grading system that scans your exam to a PDF file, allowing both of us to view it from afar). You may find it helpful to use multi-color pens for graphing. You may not use calculators or other electronic devices on exams, so get used to working without them.

## Prerequisites

You should have completed (or at least be familiar with) ECON 201 (Introduction to Macroeconomics), ECON 202 (Introduction to Microeconomics), and MATH 220 (Differential Calculus). We explore selected ECON 202 topics at a deeper level, introducing and using straightforward calculus only as needed.

## Course Description

Picking up where ECON 202 left off, this course uses mathematical models to analyze the behavior of optimizing (but constrained!) consumers and producers in market economies, thereby providing insights regarding the fundamental inner workings of markets (i.e., the origins of supply and demand). We will also use equilibrium analysis and comparative statics to understand markets characterized by competition, monopoly or monopsony. ECON 310-1 is a course primarily for economics majors and minors, so it will emphasize the development and application of economic theory.

## Learning Outcomes

During this course you will use three basic tools of economic analysis (equilibrium, constrained optimization, and comparative statics) to model and analyze a variety of economic problems. After completing this course you will be able to:

1. Utilize supply and demand curves to analyze equilibrium, the efficient allocation of resources, and the effects of various forms of government intervention in inherently competitive markets.
2. Characterize a consumer's satisfaction-maximizing choices for goods given a limited budget, derive a consumer's demand curve for a product, and determine how a change in the price of a good affects a consumer's welfare.
3. Characterize the technology available to a firm, using production functions, cost curves, and supply curves.
4. Analyze and compare market outcomes in a perfectly competitive market, a monopoly market and, if time permits, a monopsony market.

## Teaching Methodology and Philosophy

You will have many opportunities to engage the material, including reading the textbook, attending and actively participating in lectures, working on practice problem either individually or in a group, taking practice exams, and attending office hours. The **readings** are meant to familiarize you with vocabulary and concepts, inspire questions, and give you a chance to ponder the material before I present similar ideas in different packaging. I recommend reading the relevant textbook chapter both before and after class to preview and review the material. **Lectures** will typically take the form of PowerPoint presentations, though I will often ask you to work out short problems in class with a friend. Posted lectures may include extra slides for reference or omit some slides. **Practice exercises** from the textbook and old exams will give you a chance to "get your hands dirty" and to prepare for exams. Our textbook features hundreds of end-of-chapter problems that enable you to develop your economic reasoning skills at your own pace. I will post solutions to most of these problems, and I encourage you to try as many of these as possible. Ideally, work them on your own, meet with classmates to compare answers, and ask remaining questions by email. Again, I encourage you to collaborate with others as you practice applying our tools, but warn you that repeated free riding does not prepare you very well for the exams. For a simple test of your knowledge, try explaining a problem and its solution to a friend or try constructing some problems (with answers) on your own. On most non-exam days we will begin class with a short **reading quiz**. There will be no make-up quizzes, but I will count your best ten scores, so there will be some quizzes you can drop. The course is divided into three units, each followed by an **exam**; the final exam also contains "big picture" questions so I can assess your overall mastery of the course. Exams feature a diversified portfolio of questions and topics designed to test your ability to employ economic theory mathematically, graphically, intuitively and/or in real-world scenarios, and there will be plenty of old exam questions for you to practice. The three exams will test your understanding of microeconomic theory, including your ability to apply theory to economic problems. You should therefore focus on the systematic reasoning we are trying to develop, rather than on mere memorization. Economics does NOT lend itself to pulling all-nighters before exams. Later analysis relies on principles covered earlier, so the exams are cumulative implicitly, if not explicitly. Class is much more enjoyable when there is active involvement by many students, so be prepared to speak up now and then, and to **participate** in a Goldilocks sort of way – neither too little nor too much. It is both our desire and job to help you learn, so please let us know if anything is frustrating your efforts so that we can try to remedy the situation. Part of your job as a responsible adult is to monitor your progress and seek help from your peers, the TAs, or us when necessary. Often it doesn't take much to get back on track if you take the first step by asking for assistance in **office hours**. If you feel you are in trouble, seek help early. Of course, you are welcome to attend any of our office hours even if you are not having difficulty. You should adopt an active approach to learning: once you think you understand the material from the readings and lectures, work problems on old exams for practice, try the exercises at the end of the chapters, and ask yourself if you see how all of the material fits together. Finally, while ECON 310-1 emphasizes the development and application of microeconomic analysis, I want you to leave this class possessing not only new theoretical skills, but also

the ability to (1) understand the strengths and limitations of economic models, (2) use economic thinking to improve personal decisions, (3) feel more comfortable interpreting the media's jargon and discussing real-world economics issues, and (4) pursue additional study in this area.

### Evaluation

Your course grade will be assigned based on your performance on three exams, daily reading quizzes, and participation. The relative weights of the graded components are as follows:

<u>COMPONENT</u>	<u>IMPORTANT DATES</u>	<u>POINTS</u>
<i>Reading Quizzes</i>	<i>Non-exam meetings; best 10 scores count</i>	<i>50</i>
<i>Midterm Exam I</i>	<i>Thursday, July 11</i>	<i>100</i>
<i>Midterm Exam II</i>	<i>Thursday, July 25</i>	<i>100</i>
<i>Final Exam</i>	<i>Thursday, August 1</i>	<i>150</i>
<i>Participation</i>	<i>Contributions throughout the course</i>	<i><u>borderliners</u></i>
	<i>TOTAL</i>	<i>400</i>

**Exams:** Due to the substantial difficulties of administering fair examinations, I am very reluctant to offer make-up exams. However, I understand that there will be circumstances in which you cannot take an exam for an approved reason (e.g., illness or emergency). In that case, you should notify me prior to the start of the examination. If you cannot take a midterm exam, we will make arrangements to have you take a substitute exam (which may be in the form of an "oral" exam in which I ask questions and you explain your answers at a white-board). Missing a final exam is more complicated. According to the WCAS final exam policy, "The College forbids administering a final examination to individual students in advance of the assigned time. You are required to take the final examination at the designated time. If you are unable--for sufficient reason--to take a final examination at the designated time, you should apply for an incomplete in the course." Therefore, if you cannot take the final exam, I will assign an incomplete grade of "X" (which is what you would receive if you were ill and didn't show up for the final). If the WCAS Dean's office and I agree to the "X" option, we will schedule a make-up exam in the near future; I will teach ECON 310-1 again in Fall 2019 so I will expect you to take that course's final exam on **Thursday, December 12, 2019**. You can do the incomplete paperwork by visiting the advisors at 1908 Sheridan Road. A zero exam score will be assigned if you miss an exam for an unexcused reason. I will not drop or de-emphasize an exam that you have taken, though I do consider your relative performance and improvement. You must take three exams to pass the course.

### Drops or Withdrawals

The summer drop policy is a bit different from other quarters. Although there are a wide variety of course schedules, the general policy is that students can drop a class up until 60% of the class has transpired. For our six-week course (June 24<sup>th</sup> – August 4<sup>th</sup>), the 60% point would be around July 18. After June 29<sup>th</sup> self-service (i.e., dropping using CAESAR) is over, so students must use the Add/Drop form which can be picked up at the Registrar or Dean's Office. No one has to sign this form for approval. After 60% time has passed, a student will need to formally withdraw from the class and will receive a "W" on his/her transcript. *It would be best to check with The School of Professional Studies for official deadlines during the summer.*

**Grades:** I grade to the curve rather than using an absolute percentage standard. In my experience, the average grade in ECON 310-1 has been a B (or about a 3.0 GPA). I take into account performance trends and difficulty of the exams. **Re-grading:** Occasionally, a student finds or suspects a midterm grading error. If this is the case, please submit a written request to me by email within one week after the graded exams are released.

### Academic or Athletic Accommodation

Any student requesting accommodations related to a disability or other condition is required to register with AccessibleNU < [accessiblenu@northwestern.edu](mailto:accessiblenu@northwestern.edu) OR 847-467-5530 > and provide professors with an accommodation notification from AccessibleNU, preferably within the first two weeks of class. I recommend that you use accommodations for which you qualify. I will reserve a quiet room close to our regular classroom for each exam, but you may also be able to take exams at the ANU Office if you register in advance. This typically doesn't arise during the summer, but students on Northwestern's varsity athletic teams who expect an academic conflict due to an official NCAA event should work with Eileen O'Rourke in Academic Services < [eileen.orourke@northwestern.edu](mailto:eileen.orourke@northwestern.edu) OR 847.491.8805 > and ask her to contact me on your behalf as soon as possible. For all types of accommodation, all information will remain confidential. Please make your plans early and keep me informed; the 24 hours before an exam are often very busy and I may not be able to handle last-minute accommodation requests.

### **Professionalism and Consumer Electronics Policy**

I expect a reasonable degree of *professionalism*, broadly defined to include those things that generally contribute to an environment that is conducive to learning by being courteous to us and to your classmates. Do things that generate positive externalities, such as attending, smiling, participating and helping your peers. Avoid generating negative externalities in the classroom via tardiness, naps, noisy chatter, offensive language, etc. (Potential employers tend to frown upon these inappropriate behaviors, so now is a fine time to smooth out some of the rough spots.) Please plan your restroom stops around class, and if you must enter or leave during class, do so unobtrusively. During exams, please refrain from potentially distracting behaviors (e.g., pen-clicking, coughing). Serious disruptions will not be tolerated. The use of electronic gizmos in the classroom can be a nuisance to others, so please do not be disruptive. Students are welcome to use a laptop computer in class to take notes (or follow along with lecture note PDFs) if they so wish, but you should know pedagogical research shows that you learn better by taking notes by hand! Students should not make or receive phone calls, surf the web, play games, send or receive text messages, or check or send e-mails during class. Mobile devices should have the ringer turned off and be placed in pockets or backpacks. If this becomes a problem, we may have to implement a “No screens” policy. ☺ No electronic devices (calculators, smartphones, headphones, etc.) may be used during exams.

### **Academic Integrity**

Suspicion of academic integrity violations will be referred immediately to the Academic Dean’s office; University rules prohibit subsequent discussion of the situation with the student. Our expectations in regard to issues of academic honesty are articulated at <https://catalogs.northwestern.edu/undergraduate/academic-integrity/>. While you are a Northwestern student, you will be treated as an adult and will be held accountable for your actions; consequently, you are expected to know and abide by the rules of the institution. It is important that you read and understand *Academic Integrity at Northwestern: A Basic Guide* found at <http://www.northwestern.edu/provost/policies/academic-integrity/index.html>. Whether intentional or not, improper use of materials can be considered a violation of academic honesty. For example, you should not refer to prohibited materials (notes, another student’s exam, a calculator, a smartphone) during an exam, alter an exam for re-grading, plagiarize (use another’s ideas or words without acknowledging the source), or fabricate excuses or lie in connection with your academic work. If you are unsure as to what is permissible, please consult me, because ignorance is not a valid excuse.

### **Advertising, Survey, and Paperwork Storage Policies**

I am frequently approached by students, researchers, and organizations interested in using scarce class time to administer surveys, recruit applicants or volunteers for experiment, etc. However, there are many alternative means of communicating or collecting information. If you have a message you would like to deliver to the class, please package it as a PDF file or a URL and if it is appropriate, I can post it on Canvas for students to view if they are interested. I plan to use Crowdmark to streamline the grading and recording of your exams. I convert your paper exam to a PDF, insert grading comments, automatically send your score to Canvas, and then allow you to peruse a digital version of your graded exam. In the unlikely case we cannot use Crowdmark, I will return your graded exams to you in class. You are responsible for picking up these items in a timely manner and monitoring your scores. To respect student privacy, I will return exams only to their owner. Unclaimed exams are shredded shortly after the end of the quarter.

### **Reading Assignments**

The following schedule is provided as a guide and may be subject to slight changes as our pace naturally varies. Each lecture will make apparent our progress in the textbook. Please mark on your calendars the important exam and due dates, which will only change under extreme circumstances and with sufficient warning. Do your best to keep up with the reading assignments, which will complement the lectures, and as you read, jot down your questions. If you find yourself getting bogged down in math, focus on the intuition and main ideas, then address the detailed economic methods later. Remember that economics tends to be cumulative in nature, so regularly ponder how each chapter adds to previous chapters. ***For the most up-to-date information as we move through the course, check Canvas.***

## Schedule of Planned 310-1 Topics, Recommended Readings, and Important Dates

Week #	Dates	Lecture Topics and Important Dates <i>Recommended Chapters in Besanko &amp; Braeutigam -- Microeconomics 5/e</i>
1	T, June 25 W, June 26 Th, June 27	<b>UNIT 1: Consumer Theory (Utility Maximization)</b> Introduction; 3 Tools for Analyzing Economic Problems; Review of ECON 202 Tools (Supply and Demand Analysis; Elasticities) [Chps. 1-2] Consumer Preferences & Utility: Indifference Curves, $MU_X$ , $MRS_{X,Y}$ , Families of Utility Functions (Perf Subst., Cobb-Douglas, Leontief) [Chp. 3] Consumer Choice: Budget Constraints, Optimal Choice, LaGrangians [Chp. 4]
2	T, July 2 W, July 3 Th, July 4	Consumer Choice: Corner Pts, Composite Goods, Revealed Preference [Chp.4] Theory of Demand: Generating D Curves, Income & Subst. Effects [Chp. 5] ☺ <i>No Class on Thursday, July 4<sup>th</sup> – Independence Day</i> ☺
3	T, July 9  W, July 10  Th, July 11	Consumer Surplus, Compensating Variation, Quasi-Linear Utility, Applications of CV; Unit 1 Leftovers & Review [Chp. 5]  <b>UNIT 2: Producer Theory (Cost Minimization &amp; Profit Maximization)</b> Inputs and Production: Marginal Product, Isoquants, $MRTS_{L,K}$ , Major Families of Production Functions, Returns to Scale [Chp. 6]  <b>EXAMINATION 1</b> (Covers Consumer Theory, B&B Chps 1-5)
4	T, July 16 W, July 17 Th, July 18	Costs & Cost Minimization: Concepts, Input D's, Isocosts, Duality [Chp. 7] LR vs SR Cost Curves; Cost Relationships (Totals, Averages and Marginals) Long Run Cost Envelope, Economies of Scale [Chp. 8] Perfect Competition: Choosing $Q_0$ or Inputs, Shutdown, SR Supply [Chp. 9]
5	T, July 23,  W, July 24  Th, July 25	Perfect Competition: # Firms in Equilibrium, Producer Surplus [Chp. 9]  <b>UNIT 3: Competitive and Monopolized Markets</b> Monopoly & Monopsony [Chp. 11]  <b>EXAMINATION 2</b> (Covers Producer Theory, B&B Chps. 6-9)
6	T, July 30  W, July 31  Th, Aug. 1	Invisible Hand, Government Intervention in Competitive Markets (Price Ceiling and Floors, Taxes and Subsidies, Production Quotas) [Chp. 10] Agricultural Programs (Govt Purchase, Acreage Limits) and International Trade (Import Tariffs & Quotas); Review & Wrap-Up Course [Chp. 10]  <b>FINAL EXAMINATION</b> (Covers Entire Course, B&B Chps. 1-11)

*A syllabus is a contract between the instructor and students that provides information about the course and provides a commitment device to prevent arbitrary behavior. I will assume that you are familiar with, and agree to, all policies in this contract. If you object to, or do not understand, any part of this contract, please contact us immediately.*