Intermediate Microeconomics for Business

Course Number	FIN 372
Classroom	UTC 3.132
Teaching Modality	Hybrid (online through end of Jan., hybrid afterwards)
Professor	Nicholas Snashall-Woodhams
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Course Objectives

The goal of this course is to provide you with the economic theory necessary to make better decisions as a manager. By the end of the course, you should thoroughly understand the foundational ideas of microeconomics, such as supply, demand, competitive equilibrium, and oligopoly. You should also grasp the advanced parts of microeconomic theory most relevant to making decisions as a business leader: game theory and information economics.

Leadership and This Course

The Texas BBA program is designed to develop influential business leaders. This program has identified four fundamental and broad pillars of leadership: knowledge and understanding, communication and collaboration, responsibility and integrity, and a worldview of business and society.

In this course, you will not only learn microeconomic theory, but also an understanding of how to use that theory to make better decisions as a manager. Moreover, you will be better able to communicate the rationale behind your decisions and advice to other leaders throughout your organization.

Course Materials

1. Textbook (**HV**): The textbook for the course is Hal R. Varian's *Intermediate Microeconomics with Calculus.* The Textbook is available at the COOP.
2. Course Reader (**CR**): There is also a course reader that you should purchase. The course reader can be purchased at the COOP or can be directly purchased from the publisher at a discount here: https://store.cognella.com/22957
3. Harvard Case Studies: We will read and discuss four Harvard case studies during the semester. You can purchase all four case studies here: https://hbsp.harvard.edu/import/789053

You may also want to brush up on your calculus skills in order to concentrate on the economic content of the course. A useful primer on all the mathematics you will need for the course may be found in Appendix 1 here https://micro4managers.stanford.edu/. A large number of exercises that cover all the mathematics necessary for the course may be found in *Mathematical Methods for Business and Economics* by Edward Dowling.

Grading

Your grade in the course is based on:

- Class Participation (10%)
- Problem Sets (25%) – 7 Problem Sets, drop lowest grade
- Midterm (25%)
- Final Exam (40%)

Class Participation

The key to effective classroom participation is *engagement*. I expect you to engage the material, particularly during cases, your classmates, and the faculty with *vigor*. The quality of an individual's participation is more important than the quantity. Characteristics of valuable classroom comments include the following:

- Comments that are clearly **related to the material** and to the comments of others,

- Comments that **clarify and highlight the important aspects** of earlier comments,

- Comments that **synthesize** the main components of the discussion,

- Comments that **support the collective learning process** of the class,

- Comments that **go beyond the commonplace** and bring fresh analytic perspectives.

Class sessions should be viewed as business school analogs of professional business meetings. As such, you are expected to attend and be well prepared for every class session; in particular, you should

have read and be prepared to discuss *in detail* the reading material assigned for each class. If you must miss a class due to an emergency, please send the professor (and copy the TA) a note of explanation as a courtesy prior to class. Absences are otherwise regarded as unexcused and will be reflected negatively in your class participation grade. Class participation is 10% of your grade.

Problem Sets

There will be seven problem sets handed out throughout the semester, cumulatively worth 25% of your grade. Moreover, diligently working on the problem sets is an excellent way to prepare for the exams.

You are encouraged to work together on problem sets; however, you are expected to write up your own solutions. Please also note on your problem set your set of collaborators.

Problem Sets should be uploaded to the Canvas assignment portal in a PDF format by the due date (no later than 11:59 pm on the designated day; see the schedule below), and, for all students attending in person, please bring a physical copy with you to class.

You are allowed to drop the lowest problem set grade.

Exams

There are two exams: a midterm (25% of your grade) and a final (40% of your grade). You are allowed (and encouraged) to use any materials from the class that you feel will be helpful during the exam (i.e., the exam is "open-book, open-notes"). Most of the exam will consist of problems much like those in the problem sets.

Answer Keys

While we do not post the answer keys to problem sets or exams, we will be happy to discuss your grade and/or go over the answers during office hours.

McCombs Classroom Professionalism Policy

The highest professional standards are expected of all members of the McCombs community. The collective class reputation and the value of the Texas BBA experience hinges on this. You should treat the Texas BBA classroom as you would a corporate boardroom.

Faculty are expected to be professional and prepared to deliver value for each and every class session. Students are expected to be professional in all respects.

The Texas BBA classroom experience is enhanced when:

- **Students arrive on time.** On time arrival ensures that classes are able to start and finish at the scheduled time. On time arrival shows respect for both fellow students and faculty and it enhances learning by reducing avoidable distractions.

- **Students display their name cards.** This permits fellow students and faculty to learn names, enhancing opportunities for community building and evaluation of in-class contributions. Please contact me if you need a name card.

- **Students minimize unscheduled personal breaks.** The learning environment improves when disruptions are limited.

- **Students are fully prepared for each class.** Much of the learning in the Texas BBA program takes place during classroom discussions. When students are not prepared they cannot contribute to the overall learning process. This affects not only the individual but their peers, who count on them, as well.

- **Students respect the views and opinions of their colleagues.** Disagreement, criticism, and debate are encouraged, but should always be done in a respectful manner.

- **Laptops and electronic tablets are closed and put away.** When students are surfing the web, responding to e-mail, instant messaging each other, and otherwise not devoting their full attention to the topic at hand they are doing themselves and their peers a major disservice. Those around them face additional distraction. Fellow students cannot benefit from the insights of the students who are not engaged. Students with real needs may not be able to obtain adequate help if faculty time is spent repeating what was said in class. There are often cases where learning is enhanced by the use of laptops in class. Faculty will let you know when it is appropriate to use them. In such cases, professional behavior is exhibited when misuse does not take place. If you feel being able to use an electronic device during class significantly enhances your learning experience (e.g., to electronically take notes), please contact me.

- **Phones and wireless devices are turned to off/silent.** We have all heard the annoying ringing in the middle of a meeting. Not only is it not professional, it cuts off the flow of discussion when the search for the offender begins. When a true need to communicate with someone outside of class exists (e.g., for some medical need) please inform the professor prior to class.

Remember, you are competing for the best faculty McCombs has to offer. Your professionalism and activity in class contributes to your success in attracting the best faculty to this program.

Academic Dishonesty

Academic dishonesty is not tolerated. Such acts damage the reputation of the school and the degree and demean the honest efforts of the vast majority of students. The minimum penalty for an act of academic dishonesty will be a zero for that assignment or exam.

The responsibilities for both students and faculty with regard to the Honor System are described on the school website. As the instructor for this course, I agree to observe all the faculty responsibilities described therein. As a Texas student, you agree to observe all of the student responsibilities of the

Honor Code. If the application of the Honor System to this class and its assignments is unclear in any way, it is your responsibility to ask me for clarification; please do so if anything is unclear.

As specific guidance for this course, you should consider the *writing* of all examinations (i.e., the midterm and the final) to be an individual effort. Group *preparation* for examinations is acceptable and encouraged. Homework assignments are to be turned in individually, but I encourage you to work together in answering the questions. You should, however, develop your own answer and not copy and paste the work of others.

Students with Disabilities

Upon request, the University of Texas at Austin provides appropriate academic accommodations for qualified students with disabilities. Services for Students with Disabilities (SSD) is housed in the Office of the Dean of Students, located on the fourth floor of the Student Services Building. Information on how to register, downloadable forms, including guidelines for documentation, accommodation request letters, and releases of information are available online at the website https://diversity.utexas.edu/disability/. Please do not hesitate to contact SSD at (512) 471-6259, VP: (512) 232-2937 or via email if you have any questions.

Safety and Class Participation/Masks

We will all need to make some adjustments in order to benefit from in-person classroom interactions in a safe and healthy manner. Our best protections against spreading COVID-19 on campus are masks (defined as cloth face coverings) and staying home if you are showing symptoms. Therefore, for the benefit of everyone, this is means that all students are required to follow these important rules.

- **Every student must wear a cloth face-covering properly in class and in all campus buildings at all times**.

- **Students are encouraged to participate in documented daily symptom screening.** This means that each class day in which on-campus activities occur, students must upload certification from the symptom tracking app and confirm that they completed their symptom screening for that day to Canvas. Students should not upload the results of that screening, just the certificate that they completed it. If the symptom tracking app recommends that the student isolate rather than coming to class, then students must not return to class until cleared by a medical professional.

- Information regarding safety protocols with and without symptoms can be found here.

If a student is not wearing a cloth face-covering properly in the classroom (or any UT building), that student must leave the classroom (and building). If the student refuses to wear a cloth face covering, class will be dismissed for the remainder of the period, and the student will be subject to disciplinary

action as set forth in the university's Institutional Rules/General Conduct 11-404(a)(3). Students who have a condition that precludes the wearing of a cloth face covering must follow the procedures for [obtaining an accommodation](#) working with [Services for Students with Disabilities](#).

Sharing of Course Materials is Prohibited

No materials used in this class, including, but not limited to, lecture hand-outs, videos, assessments (quizzes, exams, papers, projects, homework assignments), in-class materials, review sheets, and additional problem sets, may be shared online or with anyone outside of the class unless you have my explicit, written permission. Unauthorized sharing of materials promotes cheating. It is a violation of the University's Student Honor Code and an act of academic dishonesty. I am well aware of the sites used for sharing materials, and any materials found online that are associated with you, or any suspected unauthorized sharing of materials, will be reported to Student Conduct and Academic Integrity in the Office of the Dean of Students. These reports can result in sanctions, including failure in the course.

FERPA and Class Recordings

Class recordings are reserved only for students in this class for educational purposes and are protected under FERPA. The recordings should not be shared outside the class in any form. Violation of this restriction by a student could lead to Student Misconduct proceedings. Guidance on public access to class recordings can be found [here](#).

Summarized Schedule

Date		Topic	Task
W	**01/20**	1. Introduction	HV 1
M	**01/25**	2. Preferences and Utility Functions	HV 3 &4
W	**01/27**	3. Optimal Choice	HV 2 & 5
M	**01/01**	4. Understanding Demand	HV 6
W	**02/03**	5. Income and Substitution Effects	HV 8
M	**02/08**	6. Intertemporal Choice	HV 10
W	**02/10**	7. Choice Under Uncertainty	HV 12 **Problem Set 1 Due**
M	**02/15**	8. Asset Valuation & Mean-Variance Utility	HV 11 & 13
W	**02/17**	9. Consumer Surplus	HV 14
M	**02/22**	10. Market Demand	HV 15
W	**02/24**	11. Competitive Equilibrium	HV 16 **Problem Set 2 Due**
M	**02/01**	12. Profit Maximization & Technological Constraints	HV 19 & 20
W	**03/03**	13. Cost Minimization	HV 21 & 22
M	**03/07**	14. Firm Supply	HV 23 & 24.1-8 **Problem Set 3 Due**
W	**03/10**	**15. MIDTERM**	**Sessions 1-14**
M	**03/15**	**Spring Break—No Class**	
W	**03/17**		
M	**03/22**	16. Simultaneous Games	CR pp. 57-78
W	**03/24**	17. Sequential Games	CR pp. 1-56
M	**03/29**	18. Repeated Games	CR pp. 79-132 **Problem Set 4 Due**

W	03/31	19. Using Game Theory as A Manger	Case: CR p. 133
M	04/05	20. Monopoly	HV 25
W	04/07	21. Monopoly Behavior—Price Discrimination	HV 26.1-4
M	04/12	22. Monopoly Behavior—Bundling & Product Differentiation	HV 26.5-10 **Problem Set 5 Due**
W	04/14	23. Oligopoly	HV 28
M	04/20	24. Making Decisions as a Manager with Market Power	Case: CR p. 135
W	04/21	25. Hidden Action	CR pp. 137-160
M	04/26	26. Hidden Information	CR pp. 161-184 **Problem Set 6 Due**
W	04/28	27. Using Information Economics as a Manager	Case: CR p. 185
M	05/03	28. Signaling	CR pp. 187-231
W	05/05	29. Conclusions	Case: CR p. 233
M	05/10	No Class	**Problem Set 7 Due**
TBA		**FINAL EXAM—TBA**	

* Date of midterm exam is subject to change.

** HV stands for Hal Varian, and so HV 1 indicates that you should read Chapter 1 of the Textbook.

*** CR stands for Course Reader, and so CR pp. 1-56 indicates that you should read pages 1-56 of the course reader. Please note that the link to the Harvard case studies is provided in the CR and it is the same for all four cases. Once you click on the link and purchase the case packet, you have access to all the case required for this course.

Detailed Schedule

Introduction

SESSION 1: INTRODUCTION
Reading: **Chapter 1**

This session introduces the goals of the class and discusses how the material will enhance your effectiveness in your business career.

Consumer Theory

SESSION 2: PREFERENCES AND UTILITY FUNCTIONS
Reading: **Chapters 3 & 4**

We introduce the fundamental model of consumers in microeconomic theory: an agent with *preferences* over consumption bundles. We show that such preferences can very often be represented by a *utility function* over bundles and consider how various aspects of a set of preferences relates to the shape of its induced utility function.

SESSION 3: OPTIMAL CHOICE
Reading: **Chapters 2 & 5**

Building on the previous session, we consider how an agent should choose optimally, given constraints such as a limited budget. We show how the utility function greatly simplifies the analysis of this problem and thus allows us to find optimal choices.

SESSION 4: UNDERSTANDING DEMAND
Reading: **Chapter 6**

In this session, we seek to understand the choice behavior of consumers. In particular, we analyze how we expect demand for a good to change with respect to prices and budgets.

SESSION 5: INCOME AND SUBSTITUTION EFFECTS
Reading: **Chapter 8**

We further explore how demand changes with price, as well as other economy-wide variables such as tax rates.

Intertemporal Choice (under Uncertainty)

SESSION 6: INTERTEMPORAL CHOICE
Reading: **Chapter 10**

We extend our analysis of choice to settings in which agents must make decisions about how much to consume over time.

SESSION 7: CHOICE UNDER UNCERTAINTY
Reading: Chapter 12

We extend our analysis of choice to settings in which future outcomes are uncertain and introduce the idea of risk aversion.

SESSION 8: ASSET VALUATION AND MEAN-VARIANCE UTILITY
Reading: Chapters 11 & 13

We use the ideas from the previous two sessions to consider how to value risky assets.

Consumer Aggregation

SESSION 9: CONSUMER SURPLUS
Reading: Chapter 14

We consider the problem of understanding how much consumer surplus is created by trade; we also show how to calculate the effect of policies such as taxes and minimum prices on surplus.

SESSION 10: MARKET DEMAND
Reading: Chapter 15

Having now thoroughly studied individual consumer behavior, we now consider how to add up the demands of these consumers; doing so allows us to derive the market demand curve and understand its properties.

Competitive Equilibrium

SESSION 11: COMPETITIVE EQUILIBRIUM
Reading: Chapter 16

We study *competitive equilibrium*, that is, how prices and quantities are determined given the supply and demand of various goods.

Producer Theory

SESSION 12: PROFIT MAXIMIZATION AND TECHNOLOGICAL CONSTRAINTS
Reading: Chapters 19 & 20

We now consider how to model supply by modeling how production takes place, examining both the constraints that a producer faces as well as the producer's objective.

SESSION 13: COST MINIMIZATION
Reading: Chapters 21 & 22

In this session, we study how a firm will minimize the cost to produce a given level of output.

SESSION 14: FIRM SUPPLY
Reading: **Chapters 23 & 24.1-8**

Following the analysis of the previous session, we now consider the level of output a firm should choose.

Midterm

SESSION 15: SESSION 1 – 14

Game Theory

SESSION 16: SEQUENTIAL GAMES
Reading: **Kreps, Chapters 2-2.3 (pp. 1-24 in course reader) and Chapter 2 in *The Art of Strategy* (pp. 25-56 in course reader)**

In this session, we introduce the foundations of *game theory* and explore optimal decision-making in settings with multiple agents.

SESSION 17: SIMULTANEOUS GAMES
Reading: **Kreps, Chapters 2.4-2.6 (pp. 57-70 in course reader) and Chapter 3, pp. 64-71 in *The Art of Strategy* (pp. 71-78 in course reader)**

This session considers settings in which multiple agents must make simultaneous decisions. We show how *iterated dominance* and *Nash equilibrium* can be used to predict the decisions of others in such complex environments (and thus allow us to make more-informed decisions).

SESSION 18: REPEATED GAMES
Reading: **Kreps, Chapter 3 (pp. 79-102 in course reader) and Chapter 3, pp. 72-101 in *The Art of Strategy* (pp. 103-132 in course reader)**

In this session, we consider *repeated* games, in which agents regularly interact multiple times. We demonstrate how such repetition may enable cooperation between agents, allowing for more profitable outcomes than those available in "one-shot" games.

SESSION 19: USING GAME THEORY AS A MANAGER
Case: **Maersk Shipping: Is the Price Right? (link to case is provided on p. 133 in course reader)**

In this session, we use our new understanding of game theory to consider optimal pricing from the perspective of the multinational shipping company, Maersk.

Imperfect Competition

SESSION 20: MONOPOLY
Reading: Chapter 25

In this session, we consider how a firm could act in a non-competitive environment. We consider how a *monopoly* may use market power to enhance profitability and the losses associated with such actions by the monopolist.

SESSION 21: MONOPOLY BEHAVIOR—PRICE DISCRIMINATION
Reading: Chapter 26.1-4

We consider how a monopolistic firm can use *price discrimination*, both direct and indirect, to enhance profitability.

SESSION 22: MONOPOLY BEHAVIOR—BUNDLING AND PRODUCT DIFFERENTIATION
Reading: Chapter 26.5-10

We consider how a monopolistic firm may wish to *bundle* products or change product characteristics to enhance profitability.

SESSION 23: OLIGOPOLY
Reading: Chapter 28

We consider how a market in which there are only a few firms—an *oligopoly*—and how to make pricing/quantity decisions in such an environment.

SESSION 24: MAKING DECISIONS AS A MANAGER WITH MARKET POWER
Case: EpiPen Pricing (link to case is provided on p. 135 in course reader)

We consider the question of monopoly pricing in the context of Mylan Pharmaceuticals' decisions on how to price and market EpiPens.

The Economics of Information

SESSION 25: HIDDEN ACTION
Reading: Nicholson & Snyder, pp. 485-497 (pp. 137-150 in course reader) and Chapter 13, pp. 386-394 in *The Art of Strategy* (pp. 151- 160 in course reader)

This session focuses on the *principal-agent* problem, in which a principal hires an agent but cannot perfectly observe that agent's actions, a problem know as *moral hazard*.

SESSION 26: HIDDEN INFORMATION

Reading: Nicholson & Snyder, pp. 498-504 (pp. 161-168 in course reader) and Chapter 13, pp. 394-408 in *The Art of Strategy* (pp. 169-184 in course reader)

We again consider the principal-agent problem, but this time focus on environments in which the agent has knowledge (for instance, of his own productivity) that the principal does not.

SESSION 27: USING INFORMATION ECONOMICS AS A MANAGER

Case: Performance Pay at Safelite Auto Glass (link to case is provided on p. 185 in course reader)

Many principal-agent relationships exhibit both moral hazard and hidden information. In the Safelite case, we consider how to structure contracts with workers in order to enhance profitability given these concerns.

SESSION 28: SIGNALING

Reading: Frank, pp. 170-178 (pp. 187-196 in course reader) and Chapter 8 in *The Art of Strategy* (pp. 197-231 in course reader)

This session considers the use of *signaling*; in many environments, an agent will undertake costly actions (such as going to college!) to signal attributes (such as diligence) which are unobservable to others.

Conclusion

SESSION 29: CONCLUSIONS

Case: Tesla Motors (link to case is provided on p. 233 in course reader)

We conclude by using the tools developed throughout the semester to consider the long-term strategic vision of Tesla Motors.

Final Exam

SESSION 30: SESSION 1 – 14