



BUS-G300 – INTRODUCTION TO MANAGERIAL ECONOMICS AND STRATEGY

FALL 2020

Class Times: Tuesday & Thursday, 7:00 pm – 8:15 pm.
This class meets for the thirteen-week session (Aug 25 – Nov 19).
Format: Hybrid online (synchronous + asynchronous)
Tuesday: live lecture on Zoom (Meeting ID: 947 4553 1577, Password: 136867)
Thursday: recorded lecture on Canvas
Instructor: Yanhao Wang
yw113@iu.edu
Class Website: Canvas
Office: Hodge Hall, Room 7400 (I will be working from home)
Office Hours: After Tuesday's lecture (8:15-9:30 pm) on Zoom, or by appointment.

COURSE DESCRIPTION

Managerial economics is the study of how to direct scarce resources in the way that most efficiently achieves a managerial goal. Managers are constantly faced with business decisions: Should the firm purchase components from other manufacturers or produce them within the firm? Should the firm specialize in making one type of product or produce several different types? How many units of product should the firm produce, and at what price should it sell them?

Through this course, students will learn how to apply principles of economic decision-making in their own fields of interest as well as in their personal financial life. For a student interested in any management type position, this course will provide a fundamental basis for further study. This is also a course that will empower students with the skills needed to understand and interpret business news, issues, and trends.

To accomplish this goal, we will take a “top-down” approach. Specifically, we will begin by analyzing fundamental economics of the marketplace in general. We will then look at industry-level topics, such as market structure and firm competition. Finally, we will analyze specific manager-level problems including pricing, principal-agent conflict, and firm organization by using game theory techniques.

The course is organized into 7 modules:

- **Module 1: Fundamentals of Managerial Economics**
 - What is managerial economics?
 - Applying present value analysis to decision-making
 - Using marginal analysis to make discrete and continuous decisions
- **Module 2: Supply and Demand**
 - Law of Supply and Demand
 - Working with the supply and demand functions; understanding factors that shift supply and demand and their impact on market equilibrium
 - Calculating market equilibrium and understanding how price restrictions affect equilibrium

- **Module 3: Quantitative Demand Analysis**
 - Interpreting and calculating various elasticity measures
 - Formulating demand functions based on regression analysis
- **Module 4: Producer Theory**
 - Calculating marginal and average products; marginal and average costs
 - Using decision rules to identify optimal amounts of capital and labor inputs to use in production
 - Identifying optimal method to acquire various inputs
 - Understanding the principal-agent problem
- **Module 5: Market Structures**
 - Calculating measures of industry concentration
 - Using decision rules to identify optimal price and quantity in various market structures
- **Module 6: Game Theory**
 - Solving one-shot, multistage, and repeated games
- **Module 7: Pricing Strategies**
 - 1st, 2nd, and 3rd degree price discrimination
 - Identifying pros and cons of various pricing strategies for firms with market power

(These learning outcomes support Goals 1, 3, and 5 of the undergraduate program learning goals. See Appendix.)

PREREQUISITES

This course is essentially self-contained. However, a background in algebra (including solving equations, graphing functions, slopes, etc) and basic calculus (including derivatives) will be helpful. There will be a math primer uploaded to Canvas for reading and reference.

WHAT YOU WILL NEED FOR THIS COURSE

- **Textbook**
Managerial Economics and Business Strategy (9th Edition, McGraw-Hill)
 by Michael R. Baye & Jeffrey T. Prince
 (Previous editions, which are cheaper and also available on Amazon, will be fine as well. You may use an electronic or a print version, whatever you are comfortable with.)
- **Calculator** that can calculate exponents
 (You may *not* use your phone on quizzes and exams, so I recommend having or borrowing an actual calculator.)

GRADING

- **2 Mid-semester Quizzes (15% each):** One for module 1-3 (Sep 24, tentatively) and the other for module 4 & 5 (Oct 22, tentatively). Quizzes will be held on Canvas on 7:00-8:15pm.
- **Final Exam (30%):** Cumulative (tests all material covered in the course) and is scheduled for **Nov 19th 7-9 pm** on Canvas.

- **Problem Sets (30%):** There will be one problem set for each module. 4% for each module and an extra 2% if you complete all the 7 sets. You should submit them on Canvas. I encourage you to discuss with each other or study in small groups. However, each person must submit their own set of solutions.
- **In-class participation activities (10%):** From time-to-time, we will do in-class activities that involve everyone's participation and aim at reinforcing key concepts. These activities include polls on short questions and group discussion on long questions.
- **Bonuses (up to 5%):** I will post 2 to 3 extra credit assignments before quizzes/exam. These assignments will be designed as mini case studies and ask you to use what you have learned in class to analyze real-life problems.

RULES AND POLICIES

1. Do not use electronic devices other than your computers and calculators during class. This means you should put your phones down and dig into the world of economics with me for 75 minutes.
2. Attend every synchronous class on scheduled time. I will document everyone's attendance. Please email me in advance if you are going to miss the upcoming class, be late or leaving early for unavoidable cause. I will post the recordings on Canvas after class in case you want to review them. You may not distribute the recordings to anyone else.
3. Watch every asynchronous lecture. I will post the recordings on Canvas as an assignment before the usual class time and expect you to **finish watching it before 11:59pm that night**, although you can also review the recordings after the deadline. You may not distribute the recordings to others.
4. Problem sets are administered online via Canvas and solutions will automatically be displayed after the due date/time. Therefore, I do *not* accept late submissions. Please be sure to submit your problem set well ahead of time, in case there are any Internet issues. Problem sets are due at **11:59pm on the dates indicated in the course outline.**
5. Quizzes and exams must be taken the day they are administered. If you have a valid reason for missing a quiz, please inform me **at least 10 days before** the quiz date, and I can arrange for you to take a different version of the quiz at an alternate time. If you miss a quiz/exam and I did not receive *prior* notice, you may be permitted to take a different version at an alternate time, but your score will be penalized by 50%.
6. Communication. Outside the classroom and office hours, **email** and **Canvas** are the primary forms of communication. It is important that you *regularly* check your email and the course website for announcements, assignment updates, etc.

HOW TO BE SUCCESSFUL IN THIS CLASS

Attend/watch all the lectures, complete the problem sets, and actively read assigned chapters/cases! Circle things that do not make sense, note down examples, and ask questions. Any material covered in the slides, lectures, problem sets, or readings is fair game for the quizzes and exam.

STATEMENT ON ACADEMIC INTEGRITY

Needless to say, academic misconduct of any kind will not be tolerated. A student's submission of work for academic credit indicates that the work is the student's own. All outside assistance should be acknowledged, in the form of adequate and complete citations and clear indication of the portion of work attributed to others. **If you cheat on any assignment or exam or commit plagiarism or any other academic misconduct, you will fail the course.** For further information regarding the Code of Academic Integrity: <https://college.indiana.edu/student-portal/undergraduate-students/academic-integrity.html>

STUDENTS WITH APPROVED DISABILITIES

If you desire accommodations for a disability, contact me outside of class and present to me the written supporting memorandum of accommodation from the Office of Disability Services for Students (see more details at: <https://studentaffairs.indiana.edu/disability-services-students/>). Any Request for disability accommodations should be received and authorized by me, in written form, no less than two weeks in advance of your need. This is required to allow adequate time to review and make appropriate arrangements. Simply having a memorandum and/or a belief that you should be given special arrangements does not entitle you to them.

TITLE IX

As your instructor, one of my responsibilities is to help create a safe learning environment on our campus. Title IX and our own Sexual Misconduct policy prohibit sexual misconduct. If you have experienced sexual misconduct, or know someone who has, the University can help:

- The Sexual Assault Crisis Services (SACS) at (812) 855-8900 (counseling services)
- Confidential Victim Advocates (CVA) at (812) 856-2469 (advocacy and advice services)
- IU Health Center at (812) 855-4011 (health and medical services)

It is also important that you know that federal regulations and University policy require me to promptly convey any information about potential sexual misconduct known to me to our campus' Deputy Title IX Coordinator or IU's Title IX Coordinator. In that event, they will work with a small number of others on campus to ensure that appropriate measures are taken, and resources are made available to the student who may have been harmed. Protecting a student's privacy is of utmost concern, and all involved will only share information with those that need to know to ensure the University can respond and assist.

More information about available resources can be found here:

<http://stopsexualviolence.iu.edu/help/index.html>

UNAUTHORIZED USE, SALE, OR DISTRIBUTION OF COURSE MATERIAL AND CONTENT

The course materials of this course are largely adopted from McGraw-Hill instructor resources. I modified part of the slides and self-created others. I hold the exclusive right to distribute, modify, post, and reproduce any course materials I have created, including written materials, study guides, lectures, assignments, exercises, and exams. Commercial tutoring services and/or online platforms may offer students something of value (money, access to materials for other courses, etc.) for sharing materials from this class. Doing so is a violation of intellectual property rights of textbook authors, and may violate related University policies.

In addition, some online course content, including recorded lectures and/or recordings of class sessions may be made available to you to view and download. While you are permitted to take notes on such content for your personal use, you are not permitted to distribute or re-post such content either in its original or in altered form without my express written permission.

Finally, you may not record, capture, or photograph class sessions (whether in person or online) without my express written permission

Violation of course rules involving unauthorized or improper use, sale, or distribution of course material and content as outlined above is an act academic misconduct under the IU Code of Student Rights, Responsibilities, and Conduct and is subject to sanction.

COVID ACCOMMODATION

1. Health-related accommodation

If a student faces an unavoidable emergency that prevents him/her from contacting the professor and advisor in advance, the student should strive to notify the faculty member and advisor within 24 hours of the missed assignment or test/exam/quiz. In cases where notification occurs after a due date/time and a satisfactory resolution cannot be worked out between the student and faculty member, the matter may be reviewed by a committee comprised of Kelley School faculty and staff. This committee will evaluate the student's request and explanation for why he/she could not notify the faculty member in advance. The committee will evaluate the situation (using supporting documentation provided by the student) and offer a recommended course of action to the faculty member. Ultimately, the faculty member has the final authority for determining how the matter will be handled and for notifying the student of the resolution. If a student feels his/her case has not been handled properly, the student can pursue the normal grade appeal process.

In short, *students must notify instructors directly if they need a COVID-related accommodation because of illness, isolation from a positive test, quarantine from being a "close contact," or other pandemic-related issues that interfere with class responsibilities. I will respect student privacy interests in health-related information and will not share this information with others.*

2. Time zone accommodation

Some students who are taking their classes online are doing so from locations in other time zones, which may make their presence at synchronous sessions more of a challenge. If you need such kind of accommodation, please let me know directly in advance. I would have to discuss accommodation options with the Deans Office and the Accommodation Advisory Task Force.

TENTATIVE COURSE OUTLINE

| Module | Date | Format* | Coverage and Readings |
|--|--|----------|--|
| 1 (Fundamentals) | Tue, Aug 25 | S | Introduction, Opportunity Cost, Economic Profit |
| | Thu, Aug 27 | A | Net Present Value Read Chapter 1: Introduction, Economics of Efficient Management (Stop at "Use Marginal Analysis") |
| | Tue, Sep 1 | S | Marginal Analysis Read Remainder of Chapter 1 |
| | Module 1 Problem Set due on Sep 6, 11:59pm | | |
| 2 (Supply and Demand) | Thu, Sep 3 | A | Introduction, Demand Read Chapter 2: Introduction, Demand |
| | Tue, Sep 8 | S | Supply, Equilibrium Read Chapter 2: Supply, Market Equilibrium |
| | Thu, Sep 10 | A | Price Restrictions, Comparative Statics Read Chapter 2: Price Restrictions, Comparative Statics |
| | Module 2 Problem Set due on Sep 13, 11:59pm | | |
| 3 (Quantitative Demand Analysis) | Tue, Sep 15 | S | Introduction, Own- and Cross-Price Elasticity of Demand Read Chapter 3: Introduction, Own- and Cross-Price Elasticity of Demand |
| | Thu, Sep 17 | A | Income Elasticity of Demand, Regression Analysis Read Chapter 3: Income Elasticity of Demand, Regression Analysis |
| | Module 3 Problem Set due on Sep 20, 11:59pm | | |
| Extended Lecture or Problem Set Review | Tue, Sep 22 | S | Case Study or Problem Set Review |
| Quiz 1 | Thu, Sep 24 | A | 7:00 - 8:15 pm on Canvas |
| 4 (Production Theory) | Tue, Sep 29 | S | Introduction, Acquiring Inputs, Production Function Read Chapter 6 and Chapter 5 (Introduction, Production Function) |
| | Thu, Oct 1 | A | Short-run and Long-run Decision, Isoquant and Isocost Read Chapter 5: Introduction, Production Function |
| | Tue, Oct 6 | S | Cost Function, Economies of Scale Read Chapter 5: Cost Function, Multiple-Output Cost Functions |
| | Module 4 Problem Set due on Oct 11, 11:59pm | | |
| 5 (Market Structures) | Thu, Oct 8 | A | Introduction, Perfect Competition Read Chapter 8: Introduction, Perfect Competition |
| | Tue, Oct 13 | S | Monopoly, Monopolistic Competition Read Chapter 8: Monopoly, Monopolistic Competition |
| | Thu, Oct 15 | A | Oligopoly, Industry Concentration and Antitrust Read Chapter 7: Market Structure |
| | Module 5 Problem Set due on Oct 18, 11:59pm | | |

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| Extended Lecture or Problem Set Review | Tue, Oct 20 | S | Case Study or Problem Set Review |
| Quiz 2 | Thu, Oct 22 | A | 7:00 - 8:15 pm on Canvas |
| 6 (Game Theory) | Tue, Oct 27 | S | Introduction, Simultaneous Games Read Chapter 10: Introduction, Overview of Games, Simultaneous-Move One-Shot Games |
| | Thu, Oct 29 | A | Repeated Games and Subgame Perfect Nash Equilibrium Read Chapter 10: Multistage Games |
| | Tue, Nov 3 | S | Infinitely Repeated Games Read Chapter 10: Infinitely Repeated Games |
| | Thu, Nov 5 | A | Finitely Repeated Games Read Chapter 10: Finitely Repeated Games |
| | Module 6 Problem Set due on Nov 8, 11:59pm | | |
| 7 (Pricing Strategies) | Tue, Nov 10 | S | Introduction, Basic Pricing Strategies, First- and Third-degree Price Discrimination Read Chapter 11: Introduction, Basic Pricing Strategies |
| | Thu, Nov 12 | A | Second-degree Price Discrimination and Two-part Pricing, Other Pricing Strategies Read Chapter 11: Strategies that Yield even Greater Profits |
| | Module 7 Problem Set due on Nov 15, 11:59pm | | |
| Extended Lecture or Problem Set Review | Tue, Nov 17 | S | Case Study or Problem Set Review |
| Final Exam | Thu, Nov 19 | A | 7:00 – 9:00 pm on Canvas |

* Format: S for synchronous, A for asynchronous. These arrangements are tentative. I reserve the authority to make an adjustment whenever needed.

** Readings refer to *Managerial Economics and Business Strategy* chapters and subsections (listed in CAPITAL LETTERS above the black line in each chapter).

APPENDIX: BLOOMINGTON UNDERGRADUATE PROGRAM LEARNING GOALS AND STUDENT LEARNING OUTCOMES (SLO'S)

Goal 1: An Integrative Point of View

Evaluate and make business decisions taking into account the interdependent relationships among competitive and environmental conditions, organizational resources, and the major functional areas of business.

- **SLO 1.1:** Identify the relationships between two or more business functions; explain how actions in one functional area affect other functional areas.
- **SLO 1.2:** Describe how the relationships among the functional areas relate to the goals of the organization.
- **SLO 1.3:** Use integrative techniques, structures, or frameworks to make business decisions.

Goal 2: Ethical Reasoning

Recognize ethical issues, describe various frameworks for ethical reasoning, and discern the tradeoffs and implications of applying various ethical frameworks when making business decisions.

- **SLO 2.1:** Identify the ethical dimension(s) of a business decision.
- **SLO 2.2:** Recognize the tradeoffs created by application of competing ethical theories and perspectives.
- **SLO 2.3:** Formulate and defend a well-supported recommendation for the resolution of an ethical issue.

Goal 3: Critical Thinking and Decision Making in Business

Identify and critically evaluate implications of business decisions for organizational stakeholders and the natural environment.

- **SLO 3.1:** Recognize the implications of a proposed decision from a variety of diverse stakeholder perspectives.
- **SLO 3.2:** Evaluate the integrity of the supporting evidence and data for a given decision.
- **SLO 3.3:** Analyze a given decision using critical techniques, structures, or frameworks.

Goal 4: Communication and Leadership

Communicate effectively in a wide variety of business settings employing multiple media of communications.

- **SLO 4.1:** Deliver clear, concise, and audience-centered individual and team presentations.
- **SLO 4.2:** Write clear, concise, and audience-centered business documents.
- **SLO 4.3:** Effectively participate in informational and employment interviews.
- **SLO 4.4:** Articulate one's unique value proposition to a given audience.

Goal 5: Quantitative Analysis and Modeling

Systematically apply tools of quantitative analysis and modeling to make recommendations and business decisions.

- **SLO 5.1:** Use appropriate technology to solve a given business problem.
- **SLO 5.2:** Analyze business problems using appropriate mathematical theories and techniques.
- **SLO 5.3:** Explain the role of technologies in business decision making analysis, or modeling.
- **SLO 5.4:** Structure logic and frame quantitative analysis to solve business problems.

Goal 6: Team Membership & Inclusiveness

Collaborate productively with others, functioning effectively as both members and leaders of teams.

- **SLO 6.1:** Facilitate team meetings and collaborate effectively in both face-to-face and virtual interactions.
- **SLO 6.2:** Identify and employ best team practices.
- **SLO 6.3:** Assess and offer feedback on one's own effectiveness as well as one's team members' effectiveness with respect to productivity and relationship-building in both oral and written formats.
- **SLO 6.4:** Articulate and analyze the value of inclusivity in a variety of business settings.

Goal 7: Cultural awareness and global effectiveness

Become conversant with major economic, social, political, and technological trends and conditions that influence the development of the global economy and demonstrate competence in the cultural, interpersonal and analytical dimensions of international business.

- **SLO 7.1:** Identify the risks and opportunities associated with determining and implementing optimal global business strategies.
- **SLO 7.2:** Integrate international, regional, and local non-market forces into strategic decisions of multinational corporations.
- **SLO 7.3:** Analyze obstacles resulting from cultural differences and recommend leadership approaches that leverage diversity to enhance business performance.
- **SLO 7.4:** Identify the personal and contrasting attitudes, values, and beliefs that shape business relationships.