

State University of New York at Buffalo
Department of Economics

ECO 467/567 Economics and Game Theory **Spring 2012**

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Welcome to my class! A successful class cannot be made without effective communications between a teacher and students. I encourage you to provide valuable feedbacks by all means.

As **teacher** I have the following **responsibilities**:

1. Design my class to facilitate your learning
2. Come to every class with well thought-out presentation
3. Consider that it is not always your fault if you don't understand the material
4. Create a mutually respectful classroom environment
5. Not to get defensive when you politely question my grading

As **students** you have the following **responsibilities**:

1. Complete all work on time with proper thought
2. Consider that it is not always my fault if you don't understand the material
3. When you don't understand or feel you have missed something, ask questions and make it up
4. Again, ask questions. It is a sign of maturity, not ignorance
5. Treat others and me with respect
6. Understand that I don't gain anything by "nit-picking" when I grade

Class Time and Room: TuTh. 3:30-4:50 PM, Class Room – 422 Fronczak

Office Hours: TuTh 2:30 – 3:30 PM or by appointment.

Course Objective:

Game theory is the scientific language we use to formalize and analyze interactive decision making, where one party's outcome depends on another party's action and its own action. It has become essential to understanding human behavior in either small or large organizations. We start with learning this language to describe strategic situations, and then we define various solution concepts for these situations, finally we learn how to find specific solutions for various problems. We apply the concepts and tools on issues in Economics and Business, International Relations, Political Sciences, History, and other fields. The major topics covered are decision theory, strategic form games, extensive form games, Bayesian games, and repeated games. We will also discuss their relevance in labs and in the real world. To get the most from this course, both mathematical tools and economic intuitions are essential. When you finish this course, you should have a better understanding about human behavior and organizations, and make wiser decisions for your own good.

Course materials:

1. **Textbook:** Joseph Harrington, *Games, Strategies, and Decision Making*, 1st Edition, Worth Publishers, 2008. (Available at the University Bookstore)
2. Although I mainly use this particular textbook, feel free to use other game theory textbooks for references and exercises, such as
 - a. Martin Osborne, *An Introduction to Game Theory*, Oxford University Press, 2004. ISBN 0-19-512895-8; ISBN-13: 978-0-19-512895-6.
 - b. Robert Gibbons, *Game Theory for Applied Economists*, 1992
3. Handouts will be available on the UBlerns the evening before every class
4. Other reading materials or assignments will also be available on the UBlerns

Prerequisite: ECO 405, MTH 141-MTH 142.

You need adequate mathematical knowledge and tools to study Game Theory, such as Calculus (functions, derivatives, integration, solving inequalities), and Probability Theory (random variables, probability distributions, and expectations). Most importantly, you should feel comfortable with mathematical notations and formal reasoning.

Grading:

1. Contribution to the class: 10%,
 - It can make a huge difference for you. So don't overlook this.
 - Your scores are based on my assessment about how you make effort to help me teach better and help you and other students learn better
 - You may do various things to earn a high score: asking clarification questions, sharing your ideas, correcting my errors in teaching, making relevant suggestions, and so on.
 - If you just show up, 4%
2. Homework: 10% (This 10% is "free" as long as you show the effort to learn.)
3. Quizzes, exercises, and experiments: 10% (In class)
4. Two midterm exams: 20 % each, (closed book, a calculator and a letter-size cheat sheet is permitted. I will drop the exam with the lower mark when I compute your final grade.)
5. Final exam: 30%, (Comprehensive, closed book, a calculator and a letter-size cheat sheet is permitted.)
6. There will be no makeup exams unless verifiable authentic documentation is provided regarding serious health reasons or other events beyond your control.

Students with Disabilities:

If you have a disability (physical, learning or psychological) which may make it difficult for you to carry out the course work as outlined, and/or requires accommodations such as recruiting note takers, readers, or extended time on exams and assignments, please contact the Office of Disability Services, 25 Capen Hall, 645-2608, and also me during the first two weeks of class. ODS will provide you with information and will review appropriate arrangements for reasonable accommodations.

Academic Integrity:

All students are expected to be familiar with and abide by the University's academic integrity policies, available in the Undergraduate Catalog or the Graduate School Policies and Procedures Manual. Plagiarism detection software may be used by individual instructors or the institution to aid in determining the originality of student work. The UB Libraries' guide on proper citation methods provides useful information for students.

In short: Think about the consequences!

Tentative Course Outline:

Week	Weekday	Topic	Chapter	Notes
1	Jan. 17	Introduction	1,2	
1	Th	Strategic form games	3,4	Assignment 1 posted
2	Jan. 24			Last day to drop a course w/o academic penalty
2	Th			
3	Jan. 31			
3	Th	<i>Quiz ?</i>		
4	Feb. 7			
4	Th			Assignment due
5	Feb. 14	<i>Review</i>		
5	Th	<i>Exam 1</i>		
6	Feb. 21	Strategic form games	5,6,7	Assignment 2 posted
6	Th	Exam returned		
7	Feb. 28			
7	Th			
8	Mar. 6	Extensive form games	8,9	Assignment 3 posted
8	Th	<i>Quiz ?</i>		
9	Mar. 13			spring recess
9	Th			
10	Mar. 20			
10	Th			Assignment due
11	Mar. 27	<i>Review</i>		
11	Th	<i>Exam 2</i>		
12	Apr.3	Games of incomplete information	10,11	Assignment 4 posted
12	Th	Exam returned		
13	Apr. 10			
13	Th			
14	Apr. 17	Games repeatedly played	13,14	
14	Th			
15	Apr. 24			Assignment due
15	Th	<i>Review</i>		

Final exam date: 5/8/2012, Tuesday 3:30PM - 6:30PM at Fronczk 422