

Prof. Emilson C. D. Silva

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Office hours: Wednesdays, 1 – 2 p.m. or by appointment.

GAME THEORY - Economics 4813 A

The objective of this course is to provide you with the tools, techniques and, most importantly, the intuition underlying the most common types of games in economics. We will study static games of complete information, dynamic games of complete information, static games of incomplete information and dynamic games of incomplete information. The course is divided into four parts. The first part begins by examining basic theory. Normal-form games and the concept of Nash equilibrium are covered in detail. Next, we move to applications, studying standard games in industrial organization, labor economics and public economics. After this initial section on applications, we will study more advanced theory and some of its applications. We will examine mixed strategies and existence of equilibrium. The second part covers dynamic games of complete information. Theoretical concepts and applications will be given to games of complete and perfect information, two-stage games of complete but imperfect information, repeated games and multistage (greater than two) games of complete but imperfect information. The third part of the course focuses on static games of incomplete information. Theoretical concepts and applications will be studied in detail. The last part of the course examines dynamic games of incomplete information. The concept of perfect Bayesian Equilibrium will be covered in detail. Some of its applications are signaling games, corporate investment and capital structure games, monetary policy games, cheap-talk games, sequential bargaining under asymmetric information and repeated prisoners' dilemma games.

The required textbook is

- Gibbons, Robert, *Game Theory for Applied Economists*, Princeton University Press, 1992.

The contents of class notes and handouts overlap with the contents of book chapters. We will cover all textbook chapters. Maintaining up to date class notes and obtaining handouts delivered in class are your sole responsibilities. Although attendance is mandatory, if you are unable to come to class in a particular day, make sure you get that day's class notes and handouts from a colleague who attended class.

Grades will be based on two Problem Sets, two Midterm Exams and a Final Exam. Each Problem Set will be worth 5% of the entire grade for the course. Each Midterm will account for 20% and the Final Exam will be worth 50%, of the course's grade. **All exams are comprehensive.** The dates of the exams are: **Midterm 1: February 3rd Midterm 2: March 15th; Final Exam: May 3rd: 18:00 – 20:50. Excluding extreme circumstances that impede a student from taking a regularly scheduled exam, no make-up exam will be given.**

Email caveat: Due to the sheer volume of emails, I will not be able to respond to every email query sent to me. If you have questions, talk to me during office hours, before class or after class.