Game Theory (WMH02401)

Spring 2022

Instructor:	Johann Caro-Burnett	**email:**	johanncb[at]hiroshima-u.ac.jp
Dates:	Tuesdays, from Apr 12th to May 31st	**Time:**	08:45-10:15 & 10:30-12:00
Location:	IDEC-203.		

Objectives: The goal of this course is to provide an introduction to game theory. The course is designed for graduate students and advanced undergraduate students with a solid mathematical background. We will formally define games and equilibrium concepts, and we will also study examples.

Prerequisites: There are no prerequisites to this course, however it is strongly suggested to have a solid background in mathematics.

Grading: Grading will be based on:

- 20% Weekly problem sets.

- 30% Midterm exam, in class.

- 50% Final exam, a take home project.

Course Outline

Lecture 1: (Apr 12th, 08:45-10:15) Introduction and Motivation

Lecture 2: (Apr 12th, 10:30-12:00) Definition of a Game, Dominance, Nash Equilibrium

Lecture 3: (Apr 19th, 08:45-10:15) Mixed Strategies and Existence of Nash Equilibrium

Lecture 4: (Apr 19th, 10:30-12:00) Equilibrium Refinements

Lecture 5: (Apr 26th, 08:45-10:15) Extensive Form Games

Lecture 6: (Apr 26th, 10:30-12:00) Subgame Perfect Equilibrium

Golden Week Break

Days 7 & 8: (May 10th, 08:45-10:15 & 10:30-12:00) Midterm

Two-part exam with a 15-minute break.

Lecture 9: (May 17th, 08:45-10:15) Review and Bayes Theorem

Lecture 10: (May 17th, 10:30-12:00) Types and Bayesian Games

Lecture 11: (May 24th, 08:45-10:15) Sequential Equilibrium

Lecture 12: (May 24th, 10:30-12:00) Repeated Games I

Lecture 13: (May 31st, 08:45-10:15) Repeated Games II

Lecture 14: (May 31t, 10:30-12:00) Markov Perfect Equilibrium

Day 15: (Jun 7th, 08:45-10:15) Final Exam