

Decisions, Games, and Rational Choice

Frankfurt School of Finance & Management
Spring 2018

Instructor: Prof. Dr. Gregory Wheeler
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Office Hours: By appointment
Meeting Times: Monday & Tuesday, 9:00 - 12:15

Course Description

This course will cover selected topics in rational choice theory, which informally is the analysis of how to make a correct decision in a given context. The course offers an introduction to the main normative theories of rational choice: von Neumann-Morgenstern theory of expected utility, Anscombe-Aumann's account and Savage's theory of choice under uncertainty. The course also includes an introduction to the main descriptive accounts of decision making used in psychology and economics, and an introduction to group decision making. Time permitting, we shall also cover an extension to the classical theory which abandons the Bayesian assumption that the decision maker's beliefs can always be represented by a unique probability distribution.

Requirements

Required Texts: Martin J. Osborne (2009). *An Introduction to Game Theory*, Oxford University Press.
Grading: **120 total**
4 Problem Sets: 80 points
1 Final Exam: 30 points
Participation: 10 points

Policy for Exercises

You are allowed to discuss the problem sets with your classmates in attempting to solve the exercises, but each student must write up independent answers. If you collaborate with another student in solving a particular exercise, you must identify who that student is and note which problems you collaborated on. Failure to note collaboration or copying answers verbatim constitutes academic dishonesty.

Problem sets are due by the end of class on the day they are due. Deadlines are sharp. There is a 10 point penalty for each hour after deadline.

Final Exam

The final exam will be held on the last day of class, no exceptions.

Policy for Participation

You may miss up to three 90 minute lectures. The fourth missed lecture will cost you 5 points. The fifth, all 10 points. Your participation in class will be judged on the quality of your contributions, not on quantity.

Course Schedule

DATE	ROOM	TOPIC	<ul style="list-style-type: none"> ○ READINGS ● DUE DATES
FEB 5	s1.09	Introduction to Decisions, Games & Rational Choice Some Simple Games	○ Ch. 2
FEB 6	s1.09	Simple Nash Equilibria Best Response & Dominance Reasoning	○ Ch. 2
FEB 12	s2.08	Illustrations of Nash Auctions	○ Ch. 3 ● PS1 Due
FEB 13	s2.08	Rationalizability Strict & Weak Dominance	○ Ch. 12
FEB 19	s2.08	Mixed Strategies & Nash	○ Ch. 4 ● PS2 Due
FEB 20	s1.11	Working with Mixed Strategies Formation of Player Beliefs	○ Ch. 4
FEB 26	s2.08	Extensive Form Games with Perfect Information	○ Ch. 5 ● PS3 Due
FEB 27	s1.11	Subgame Perfection & Backward Induction Bargaining as Extensive Form	○ Ch. 5
MAR 5	s2.08	Imperfect Information Bayesian Games	○ Ch. 9 ● PS4 Due
MAR 6	s1.11	Extensive Form Games with Imperfect Information	○ Ch. 10.1 - 10.3
MAR 13	s1.11	Review Final Exam	