Game Theory
Syllabus

Information at a glance

Course:	Game Theory
Web Site:	<http://virgo.unive.it/licalzi/game-phd.html>
Professor:	Marco LiCalzi (email: licalzi@unive.it)
Lectures:	See schedule below

Purpose of course. This course covers standard content for a first-year graduate-level course in noncooperative game theory.

Prerequisites. You are expected to have a basic knowledge of game theory and some of its economic applications. You might be able to make up a few gaps in your background along the way, but if you are unfamiliar with the notions of strategic and extensive form, pure strategy, dominance, Nash equilibrium, and backwards induction, you will be better off reading beforehand about these topics. There are plenty of choices available. A convenient entry point is getting familiari with Chapters 3-4-5-7-8 from: S. Tadelis (2013), *Game Theory: An Introduction*, Princeton University Press. If you are unfamiliar with basic game theory, these chapters or equivalent material is *strongly recommended summer reading*.

You are also expected to be familiar with standard material in analysis and probability at the level of the mathematical appendix (Chapters A1–A2) from: G.A. Jehle and P.J. Reny (2011), *Advanced Microeconomic Theory*, third edition, Addison-Wesley.

Updates. For updates or more information, trust only the class webpage:
http://virgo.unive.it/licalzi/game-phd.html

Teaching method. There will be twelve meetings (two per week), mixing up lectures and practice sessions.

Examination policy. Grading is comparative. It us going to be based on a final written exam (50%), three homework sets (15% each) and class participation (5%).

Rules for homework: You can discuss the exercises with your colleagues as much as you like. (There is a lot to learn from your fellow students.) Coauthored homework is encouraged, but a set of solutions can have at most two coauthors. If a set of solutions has more than one author, all coauthors get the same grade. A student cannot have the same coauthor in more than one homework. Late homework is not accepted.

Reading material

M. Maschler, E. Solan and S. Zamir (2013), *Game Theory*, Cambridge University Press.
[Chapters 2–9, 12–13.]

Schedule

Class	Day	Time	Topic	Reading material
1	8/11	14:00-16:00	Utility and extensive form	M2–3
2	9/11	9:00-11:00	Strategic form and dominance	M4
3	15/11	14:00-16:00	Nash equilibrium and mixing	M4–5
			Homework 1 out	
4	16/11	9:00-11:00	Information and ESS	M5
5	22/11	14:00-16:00	Behavior strategies and SPE	M6–7
			Homework 1 due	
6	23/11	9:00-11:00	Refinements	M7
7	29/11	14:00-16:00	Correlated equilibrium and knowledge	M8–9
			Homework 2 out	
8	30/11	9:00-11:00	Incomplete information	M9
9	6/12	14:00-16:00	Auctions	M12
			Homework 2 due	
10	7/12	9:00-11:00	SIPV and Envelope theorem	M12
11	13/12	14:00-16:00	Mechanisms and finitely repeated games	M12–13
			Homework 3 out	
12	14/12	9:00-11:00	Infinitely repeated games	M13
	TBD		Homework 3 due and final exam	