

REVISED: 24.07.2011

---

## Game Theory

### SYLLABUS

---

#### Information at a glance

Course:	Game Theory
Web Site:	< <a href="http://venus.unive.it/licalzi/game.html">http://venus.unive.it/licalzi/game.html</a> >
Professor:	Marco LiCalzi (email: <a href="mailto:licalzi@unive.it">licalzi@unive.it</a> )
Office Hours:	After class or by appointment
Lectures:	See schedule below

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

**Prerequisites.** You are expected to be familiar with standard material in analysis and probability at the level of the mathematical appendix in Jehle and Reny (2001) or somewhere below the level of the mathematical appendix in Mas-Colell et al. (1995). No previous formal knowledge of game theory is required, although familiarity with simple examples such as the Prisoners' Dilemma or the Battle of Sexes is assumed.

**Background information.** Compared to the last seven years, there have been a few significant changes. Teaching has been cut down by 20 classes to 15. There is no longer a teaching assistant who can grade the homework. The core of the course was decided by a committee (where I do not take part) to be the content of Chapters 7–9 from Mas-Colell et al. (1995). The content of the exam shall be aligned with a similar class taught in Verona by F. DeSinopoli.

**Teaching method.** There will be fifteen meetings, mixing up lectures and practice sessions. Additional material is available on the class website.

**Examination policy.** Grading is comparative. Due to the changes above, the grading is based on a final written exam, that it is offered only once per year. Homework is proposed, but is not graded.

## Reading material

The textbook for the class are Jehle and Reny (2001) and Mas-Colell et alii (1995). For an alternative presentation of game theory, see Osborne and Rubinstein (1994). A good source of solved exercises is LiCalzi (1995).

J) G.A. Jehle and P.J. Reny (2001), *Advanced Microeconomic Theory*, second edition, Addison-Wesley.

L) M. LiCalzi (1995), *Teoria dei Giochi*, Etas-Kompass.

M) A. Mas-Colell, M.D. Whinston and J.R. Green (1995), *Microeconomic Theory*, Oxford University Press.

O) M.J. Osborne and A. Rubinstein (1994), *A Course in Game Theory*, The MIT Press.

**Schedule.** Pages initialed by “J” refer to Jehle and Reny (2001). Similar notation applies to other sources. Classes are held in Room A, Palazzo Moro.

Class	Day	Time	Topic	Reading material
1	4/10	14:00–15:30	Strategic form games	J267–274
2	7/10	14:00–15:30	Nash equilibrium	J274–280
3	11/10	14:00–15:30	Iterated dominance	M236–245
4	14/10	14:00–15:30	Static oligopoly	M387–394
			Homework 1	
5	18/10	14:00–15:30	Practice session	
6	21/10	14:00–15:30	Games of incomplete information	J280–285, M253–257
7	25/10	14:00–15:30	Extensive form games	J285–292
8	4/11	14:00–15:30	Games of perfect information	J293–297
9	8/11	10:30–12:00	Subgame perfect equilibrium	J297–306
			Homework 2	
10	11/11	14:00–15:30	Weak sequential equilibrium	J306–321, M282–288
11	15/11	14:00–15:30	Sequential equilibrium	M288–292
12	18/11	14:00–15:30	Belief-based refinements	M292–296
13	22/11	14:00–15:30	Signaling games	M450–459
14	29/11	14:00–15:30	Trembling-hand perfection	M258–261, 299–301
			Homework 3	
15	2/12	14:00–15:30	Repeated games	M417–423