



Academic Year  
2020-21  
Syllabus  
Game Theory  
CFU 6  
Prof. Bruno Chiarini

### Course Description

The course is an introduction to game theory. The criterion of dominance and the equilibrium of Nash will be analysed with pure strategies and mixed strategies, as well as different refinements of the equilibrium (Backwards Induction, subgame perfect Nash equilibrium). An introduction to Bayesian equilibrium and repeated games will also be provided. The lessons use several examples in the field of economics, politics and economic policy.

### Duration, Timetable and Period of the Course

The course consists of 18 lessons (on 10 topics) of 2 or 3 hours. Students are asked to always be present at lessons in order to avoid delays and repetitions. There will also be 4 recitations sessions of 2 hours by Dott. ssa Lorè.

### Teaching Method

Lectures will make use of oral presentations. Analysis will also be presented at the board, and used for open discussion. Interaction between teacher and student will be encouraged. **All this remains valid, both if the frontal lesson is possible, or if for the Covid emergency one proceeds with the lessons remotely.**

### Schedule of Topics

<b>Topic 1</b>	Normal form and Extensive form
<b>Topic 2</b>	Strategy dominance and Nash Equilibrium
<b>Topic 3</b>	Complete Information (perfect and imperfect)
<b>Topic 4</b>	Mixed strategies and equilibrium interpretation
<b>Topic 5</b>	Coordination problem (prisoner dilemma; stag hunt; chicken game...)
<b>Topic 6</b>	Public goods and free-riding phenomenon
<b>Topic 7</b>	Backward induction and subgame perfection
<b>Topic 8</b>	Games of incomplete information Bayesian equilibrium
<b>Topic 9</b>	Cournot with Complete and Incomplete information
<b>Topic 10</b>	Repeated Games

### Textbook and Materials

The teacher will refer the student, by the end of each week, to the relevant material on the basis of the above topics:

Pdf lessons of the teacher, downloadable.

One of the following volumes:

- Gibbons A. Primer in Game Theory, Prentice Hall
- Osborne M. Introduction to Game Theory: International Edition, OUP Oxford

### Assessment

*If the students are always present at the lessons, it will be possible to take a mid-course test, valid for the final evaluation. Non attending students will have to perform the same written exam on the whole program. Even if the Covid-19 emergency persists, the exam can be carried out in a written way remotely using the available software (Moodle, zoom etc.).*

**Office hours**

By appointment: [bchiarini56@gmail.com](mailto:bchiarini56@gmail.com) . You can usually talk to the teacher after class.

**E-mail**

bchiarini56@gmail.com

**NOTE:** Since the course is provided for a limited number of students, **Erasmus or non-Global Governance students** who would like to attend the course need to contact the Secretariat of Global Governance by e-mail [global.governance@uniroma2.it](mailto:global.governance@uniroma2.it) for registration and inform the Professor of the course. They are required to sign a code of conduct like all Global Governance students, accepting all values and rules. Please read it carefully before enrolling and notice that attendance is required from the very first lesson.