

**Applied Game Theory  
(30 hours, 10 units)**

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**Abstract**

The course is organized in two parts. In the first part, we shall present the fundamental notions and tools of non-cooperative game theory. In the second part, we shall discuss how these tools can be applied to analyze economic problems where the strategic dimension of agent interaction becomes crucial. In particular, we will discuss economic problems related to coordination, cooperation and conflict.

**Syllabus**

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|------------------|---|
| Lecture #1 (GF)  | Game theory and economics. Cooperative vs. non-cooperative games. Mathematical description of a game. |
| Lecture #2 (GF)  | Rationality and information. Simultaneous-move vs. dynamic games. Analysis.                           |
| Lecture #3 (GF)  | Example. Open issues.   |
| Lecture #4 (LZ)  | Dynamic Games. Nash Equilibrium in Extensive Form Games.  |
| Lecture #5 (LZ)  | Repeated Games and the emergence of cooperation.  |
| Lecture #6 (LZ)  | Behavioral Game Theory: An Introduction.  |
| Lecture #7 (LZ)  | Evolutionary Games, Experimental Economics and Social Preferences.                                    |
| Lecture #8 (GF)  | Coordination and technological adoption. Standard results and open problems.                          |
| Lecture #9 (GF)  | Technological choice and interaction networks. Dynamical models with boundedly-rational agents.       |
| Lecture #10 (GF) | Examples and applications. Concluding remarks.  |

**References**

- Gibbons, “A Primer in Game Theory”, Prentice Hall, available in Italian as: “Teoria dei Giochi”, Il Mulino.
- Additional material will be provided during the course.