COURSE OF STUDY *Economics and Management*
ACADEMIC YEAR *2024-2025*
ACADEMIC SUBJECT *Game Theory for strategic decisions*

General information	
Year of the course	2nd year
Academic calendar (starting and ending date)	2nd semester (2025/02/24-2025/06/13)
Credits (CFU/ETCS)	8 CFU
SSD	SECS-P/01 Economia Politica
Language	Italian
Mode of attendance	Elective

Professor/Lecturer	
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Telephone	
Department and address	Department of Economics, Management and Corporate Law
Virtual room	Virtual room on Microsoft Teams (code *74ve323*)
Office Hours	By appointment, in presence or in the virtual room on Microsoft Teams (code *hotmpkw*)

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours / Self-study hours
64	64		
CFU/ETCS			
8	8		

Learning Objectives	The course aims at providing students with the fundamentals of Non-Cooperative Game Theory, which is the study of interactive decision making by rational agents. Concepts will be presented through examples and real world applications, ranging from auctions, to oligopolistic competition, to bargaining and vertical relations.
Course prerequisites	Basic mathematics, microeconomics and industrial organization.

Teaching strategies	Lectures and tutorials. To facilitate understanding, real or realistic examples will be illustrated.

Expected learning outcomes in terms of	

Knowledge and understanding on:	By the end of the course, students should have a good command of the basic concepts of Game Theory, in particular the various equilibrium concepts.
Applying knowledge and understanding on:	By the end of the course, students should be able to interpret an interactive economic or managerial problem in game-theoretic terms, identifying strategies and their effects on payoffs.
Soft skills	**Making informed judgments and choices**: by the end of the course, students should be able to make informed judgments on the complex relationships among economic agents. **Communicating knowledge and understanding**: by the end of the course, students should be able to use the language of Game Theory appropriately. **Capacities to continue learning**: by the end of the course, students should be able to autonomously investigate interactive economic and managerial problems.
Syllabus	- Games: definitions and classifications. - Dominance, strong and weak, iterated dominance. Applications: second-price auctions. - Static games and Nash equilibrium. Applications: oligopolistic competition, Diamond model. - Dynamic games and Subgame-Perfect Nash Equilibrium. Applications: bargaining, brand proliferation, product differentiation, entry deterrence, predatory pricing. - Repeated games. Applications: collusion, vertical relations.
Texts and readings	- GIBBONS R. Teoria dei Giochi. Il Mulino, 2005. - DIXIT A., SKEATH S, REILEY D.H. Games of Strategy, W.W. Norton & Company, 2015.
Notes, additional material	The two textbooks above are not compulsory.
Repository	Additional material (lecture notes, exercises, previous exams) will be uploaded in the virtual room on Microsoft Teams (code *74ve323*).

Assessment	
Assessment methods	The final exam is written and is made of a few exercises, aimed at verifying the ability to understand, interpret and solve a realistic problem of strategic interaction.
Assessment criteria	Students' evaluation will be based on their ability to properly manage the technical language, to comprehend the economic problem at hand, to properly manage the game-theoretic concepts in order to achieve the solution
Final exam and grading criteria	The final exam is written. The grade is given in number of points out of 30. The exam comprises questions and exercises, each with its own points, for a total of 32 points. The exam is passed if at least 18 points

	are obtained. Those who get more than 30 points will be acknowledged the *cum laude*. To evaluate the exam, not only the achievement of the right solution will be considered, but also how the problem was setup and reasoned upon, and whether the proper language was used.
Further information	