Game Theory

Course Outline
Academic Semester: 2025/26

1. General

School	**School of Finance and Statistics**		
Academic Unit	**Department of Banking and Financial Management**		
Level of Studies	**Undergraduate**		
Course Code	**ΧΡΜΘΠ02**		
Semester	**5th or 7th**		
Course Title	**Game Theory**		
Idependent Teaching Activities		Weekly Teaching Hours	Credits
	Lectures	**4**	**7,5**
Course Type	**Special Background**		
Prerequite Courses			
Language of Instruction and Examinations	**Greek**		
Is the course offered to Erasmus Students?			
Url (Eclass)	**https://eclass.unipi.gr/courses/XTD227/**		

2. Learning Outcomes

Learning Outcomes

This course presents the core ideas of game theory. Game theory provides a logical apparatus designed to help us understand the decision-making if economic agents interact. The game theory models are highly abstract; therefore, the domain of applications is vast. Here we present the main toolkit of game theory and its application in fundamental issues of microeconomic theory.

With the successful completion of the course, students will be sufficiently capable to:

- comprehend game theory techniques in a generic decision-making environment.
- assess the microeconomic foundations of economic phenomena in a strategic setting
- undertake strategic decisions in real-life situations.

General Competences

- Decision making,
- Working independently,
- Production of new research ideas

3. Syllabus

- Strategic Games – Nash Equilibrium, Strategic Dominance, Mixed-Strategy equilibrium, Bayesian Games in strategic form, Pre-Play Communication, Correlated Equilibrium
- Extensive Games – Sequential Decision Games with complete information, Backward Induction, Subgame Perfect Nash Equilibrium, Games with Incomplete Information, Sequential Equilibrium, Games with Imperfect Information, Bayesian Nash Equilibrium, Forward Induction, Screening Games.

- Repeated Games – Repeated Games with Perfect Recall, Repeated Games with Discounting, Folk Theorem, Strategies as Automata.
- Bargaining Theory – Nash Solution, Other forms of solution.
- Cooperative Games – The Core, The Shapley value, The Bargaining Set

4. Teaching and Learning Methods - Evaluation

Delivery	**Face-to-face**	
Use of Information and Communications Technology	**Interaction in class with students**	
Teaching Methods	**Activity**	**Semester Workload**
	Lectures	52
	Independent Study	73,5
	Problems Sets	62
	Course Total	**187,5**
Student Performance Evaluation	Final exam 100%	

5. Attached Bibliography

Suggested Bibliography

- Βολιώτης Δημ. Διαλέξεις στην Θεωρία Παιγνίων. Πληροφορία και Λήψη Αποφάσεων. Εκδόσεις Πεδίο, 2015
- Felix Munoz-Garcia and Daniel Toro-Gonzalez, Strategy and Game Theory. Practice Exercises with Answers, Springer, Second Edition, 2019

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