

1. BASIC INFORMATION

Course	GAME THEORY
Degree program	GLOBAL BACHELOR'S DEGREE IN ENTREPRENEURSHIP AND MANAGEMENT
School	SOCIAL SCIENCES
Year	FOURTH
ECTS	6
Credit type	OPTIONAL
Language(s)	ENGLISH
Delivery mode	PRESENTIAL
Semester	SECOND SEMESTER
Academic year	2025-2026
Coordinating professor	BRUNO BROSETA, Ph.D.

2. PRESENTATION

Game Theory studies simplified models of Strategic interactions in which the optimal decision for an agent depends not only on his/her actions but also of those chosen by other agents. As a result, choosing your best strategy depends on what you think others will do, which in turn depends on what others think that you will do, etc... The Nash equilibrium –and some similar concepts- is the main tool by which we solve this problem and make predictions. Game Theory covers many different situations, representing both conflict and cooperation environments, as for example in industrial organization and business competition, bargaining, auctions or strategic information management.

This is an introductory course in which we will analyze different equilibrium concepts for different environments – normal and extensive form games- and information conditions – complete and incomplete information- and we will study practical applications of Game Theory in economics and business, politics and sociology and international relations. The language of Game Theory is basically a mathematical one, but we will try to focus on the qualitative implications of Strategic situations; however, we will sometimes use some intermediate mathematics when needed.

3. LEARNING OUTCOMES

LEARNING OUTCOMES OF THE DEGREE PROGRAMME

Skills

HAB06: Ability to use the mathematical tools necessary for solving economic problems and the use of basic methods of calculus, algebra and programming.

Competences

CP11: Ability to understand and analyse consumer behaviour: ability to assess and predict behaviours and trends in the different audiences into which consumers are classified in relation to a given product or service, both geographically and culturally or in terms of population segments

CPT01. Create new ideas and concepts from known ideas and concepts, reaching conclusions or solving problems, challenges and situations in an original way.

CPT03. Use information and communication technologies for data research and analysis, research, communication and learning.

CPT06. Integrate analysis with critical thinking in a process of evaluating different ideas or possibilities and their potential for error, based on evidence and objective data that lead to effective and valid decision-making.

CPT07. Adapt to adverse, unexpected situations, and situations that cause stress, whether personal or professional, overcoming them and even turning them into opportunities for positive change.

Subject Learning Outcomes

The subject Game Theory aims for students to understand how decision-making works based on game theory. In this way, the student will be able to:

- To study the behavior of individuals and organizations in situations of interaction.
- Design business strategies.
- Propose models for strategic decision-making.

4. CONTENT

- Unit 1: Introduction
- Unit 2: Static Games
- Unit 3: Dynamic Games
- Unit 4: Games with Incomplete Information
- Unit 5: Practical Applications

5. TEACHING-LEARNING METHODOLOGIES

The types of teaching-learning methodologies used are indicated below:

- Class Lectures
- Cooperative Learning
- Problem-based Learning
- Project-based Learning

6. LEARNING ACTIVITIES

Listed below are the types of learning activities and the number of hours the student will spend on each one:

Campus-based mode:

Learning activity	Number of hours
LECTURES	20
AUTONOMOUS WORK	20
ORAL PRESENTATIONS	15
CASE ANALYSIS AND PROBLEM SOLVING	20
VISITS/EXTERNAL ACTIVITIES	5
TEAM ACTIVITIES	20
GRADES ACTIVITIES/EXAMS	10
TUTORING	20
PAPERS AND PROJECTS	20
TOTAL	150

7. ASSESSMENT

Listed below are the assessment systems used and the weight each one carries towards the final course grade:

Campus-based mode:

Assessment system	Weight
EXAMINATIONS	30%
CASE-BASED AND PROBLEM SOLVING	20%
REPORTS AND WRITING	15%
ORAL PRESENTATIONS	5%
PARTICIPATION IN FORUMS AND DEBATES	5%
PAPERS AND PROJECTS	25%
TOTAL	100%

When you access the course on the *Campus Virtual*, you'll find a description of the assessment

activities you have to complete, as well as the delivery deadline and assessment procedure (rubric) for each one.

7.1. First exam period

The grading policy for the semester is based on continuous evaluation so that if you fail in completing (totally or partially) any of the Assessable Activities above within the specified deadline, the grade for the corresponding activity will be a 0/10, unless explicitly stated otherwise by the instructor on an individual and justifiable basis. Make-up exams will only be given in exceptional, duly justified occasions and when requested at least 24 hours before the exam date. Class attendance will be registered either through the technological devices set by the University or, alternatively, through the attendance registration mechanism determined by the instructor.

In order to pass the course in the first exam period, you will need to have a final weighted average grade of at least 5/10 across all Assessable Activities above, a minimum weighted average of 5/10 in the Examination part and a class attendance of at least 50%. Should you fail to satisfy any of these three requirements, you will fail the course in this period.

7.2. Second exam period

To pass the course in the second exam period, you must obtain a final grade of at least 5 out of 10 (weighted average).

In any case, you will need to obtain a grade of at least 5.0 in the final exam in order for it to count towards the final grade along with all the grades corresponding to the other activities.

The student must deliver the activities not successfully completed in the first exam period after having received the corresponding corrections from the professor, or those that were not delivered in the first place. In each case, the professor will indicate the remedial activities that have to be submitted by the student; these activities will have to be submitted before the final exam date, as instructed

8. SCHEDULE

This table shows the delivery deadline for each assessable activity in the course:

Assessable activities	Deadline
PROBLEM SET 1	2ND WEEK OF FEBRUARY
PROBLEM SET 2	4TH WEEK OF FEBRUARY
PROBLEM SET 3	2ND WEEK OF MARCH
PROBLEM SET 4	4TH WEEK OF MARCH
PROBLEM SET 5	2ND WEEK OF MAY

PROBLEM SET 6	4TH WEEK OF MAY
TEAM PROJECT AND ORAL PRESENTATION	1ST WEEK OF JUNE

This schedule may be subject to changes for logistical reasons relating to the activities. The student will be notified of any change as and when appropriate.

9. BIBLIOGRAPHY

The main contents, cases and exercises of the Course are included in the lecture notes and activities you will be assigned during the semester. Some useful additional sources are:

Basic Bibliography:

- A. Dixit, S. Skeath (2004), *Games of Strategy*, Norton. This is a basic textbook; the level is appropriate for the class, but we will see many more examples and cases in class. Available in the University library.

The recommended Bibliography is:

- A. Dixit, B. Nalebuff (2008), *The Art of Strategy: A Game Theorist's Guide to Success in Business and Life*, W.W. Norton and Company. Not exactly a textbook, but a classic. Available in the University library.
- S. Tadelis (2013), *Game Theory: An Introduction*, Princeton University Press. A good undergraduate text, but mathematically demanding.
- W. Spaniel (2011), *Game Theory 101 The Complete Textbook : A User Friendly Introduction to Game Theory*, self-edited ([Amazon](#)), and the accompanying video tutorials series on [You Tube](#). We will use it sparingly in class.

10. EDUCATIONAL GUIDANCE DIVERSITY AND INCLUSION UNIT

From the Educational Guidance Diversity and Inclusion Unit (ODI) we offer support to our students throughout their university life to help them reach their academic achievements. Other main actions are the students inclusions with specific educational needs, universal accessibility on the different campuses of the university and equal opportunities.

From this unit we offer to our students:

- Accompaniment and follow-up by means of counselling and personalized plans for students who need to improve their academic performance.
- In terms of attention to diversity, non-significant curricular adjustments are made in terms of methodology and assessment for those students with specific educational needs, pursuing an equal opportunities for all students.
- We offer students different extracurricular resources to develop different competences that will encourage their personal and professional development.

- Vocational guidance through the provision of tools and counselling to students with vocational doubts or who believe they have made a mistake in their choice of degree.

Students in need of educational support can write to us at:

orientacioneducativa.uev@universidadeuropea.es

11. ONLINE SURVEYS

Your opinion matters!

The Universidad Europea encourages you to participate in several surveys which help identify the strengths and areas we need to improve regarding professors, degree programs and the teaching-learning process.

The surveys will be made available in the “surveys” section in virtual campus or via e-mail.

Your assessment is necessary for us to improve.

Thank you very much for your participation.

WORK PLAN FOR THE COURSE

HOW TO COMMUNICATE WITH YOUR PROFESSOR

Whenever you have a question about the content or activities, don't forget to post it to your course forum so that your classmates can read it.

You might not be the only one with the same question!

If you have a question that you only want to ask your professor, you can send him/her a private message from the Campus Virtual. And if you need to discuss something in more detail, you can arrange an advisory session with your professor.

It's a good idea to check the course forum on a regular basis and read the messages posted by your classmates and professors, as this can be another way to learn.

PLAGIARISM REGULATION

In accordance with the current student disciplinary regulations at Universidad Europea:

- Plagiarism, in full or in part, of intellectual works of any kind, is considered a very serious offense.
- Very serious offenses relating to plagiarism and the use of fraudulent means to pass assessment tests shall result in exclusion from the exams for the relevant period, as well as the inclusion of the offense and its details in the student's academic record. For more information you can find all information regarding disciplinary regulations at the following link:

USE OF IA REGULATION

The student must be the author of his/her work/activities.

The use of Artificial Intelligence tools (AI) must be authorized by the teacher in each assignment/activity, indicating in what way it uses is permitted. The teacher will inform in advance in which situations AI tools may be used to improve spelling, grammar and editing in general. The student is responsible for clarifying the information given by the tool and duly declaring the use of any AI tool, according to the guidelines given by the teacher. The final decision on the authorship of the work and the appropriateness of the reported use of an AI tool rests with the lecturer and those responsible for the degree.