



COURSE DATA

DATA SUBJECT

Code: 35831

Name: Strategic behaviour

Cycle: Undergraduate Studies

ECTS Credits: 4.5

Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
1313 - Degree in Business Management and Administration	Facultat d'Economia	4	First quarter
1330 - Degree in Business Management and Administration (Ontinyent)	Facultat d'Economia	4	First quarter
1926 - Double Degree Program Tourism and BMA	Facultat d'Economia	5	First quarter
1926 - Double Degree Program Tourism and BMA	Facultat d'Economia	5	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1313 - Degree in Business Management and Administration	Management tools and skills	ELECTIVES
1330 - Degree in Business Management and Administration (Ontinyent)	Herramientas y Habilidades Directivas	ELECTIVES
1926 - Double Degree Program Tourism and BMA	Asignatura optativa de quinto curso	ELECTIVES
1926 - Double Degree Program Tourism and BMA	Asignatura optativa de quinto curso	ELECTIVES

COORDINATION

OLCINA VAUTEREN GONZALO

SUMMARY

This course offers an introductory view of game theory applied to the problems of the corporate and business world. Game theory is a method aimed at the decision making of individuals and companies in an environment of strategic interdependence, that is, when the consequences of their decisions depend on (and have effects on) the decisions of other individuals or companies. Nowadays, knowledge of game theory is an unavoidable necessity for the analysis of economic situations of great importance for companies, such as the functioning of markets in imperfect competition, auctions, bilateral negotiation in an economic exchange, effort incentives and contracts, etc. These tools can be applicable to the most



important markets of modern economies such as labor markets, credit or financial markets, etc....

The emphasis will be on concepts and results. Likewise, a large part of the course will be devoted to the resolution of practical cases and/or the performance of exercises and the study of various applications of the concepts explained to the business world. These applications will have a role almost as relevant as the theory itself: in each topic two or three practical cases and simple applications will be discussed.

The program begins with a series of basic concepts on the elements that characterize a strategic situation (game) involving two or more individuals or companies (topic 1), necessary for the understanding of later topics. Next (topics 2 and 3) we analyze games characterized by an isolated strategic interaction and where the agents make decisions simultaneously, in which there is complete information, and we analyze applications of great economic importance such as auctions, incentives to effort in a production team, etc. For this purpose, solution concepts for this type of strategic situations are introduced and applied.

Subsequently (topic 4), the program analyzes situations that develop over time, sequential or dynamic games, paying special attention to the credibility of the strategic moves that may occur in a framework of perfect information.

Applications of great importance in real life are also studied (topic 5), such as those strategic situations that are repeated in a stationary way (repeated games) over time. Finally, the block of games with private information is analyzed (topic 6). In these games, a detailed analysis of dynamic games is carried out, but when there is incomplete or imperfect information about some important aspect of the game, studying the incentives that agents have to hide or signal information they possess.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

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COMPETENCES / LEARNING OUTCOMES

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Acquire interdisciplinary knowledge of the company and its social, economic, institutional and legal environment, and of the basic elements of the management process, such as organisation and administration, accounting, taxation, operations, human resources, marketing, financing and investment.

Be able to apply analytical and mathematical methods for the analysis of economic and business problems.

Be able to apply and introduce continuous improvement procedures in all areas of the organisation.

Be able to carry out strategic diagnoses in complex and uncertain environments using the appropriate



methodologies to resolve them.

Be able to express oneself in formal, graphic and symbolic languages.

Be able to identify the sources of relevant economic information and their contents, and to understand economic institutions as the result and implementation of theoretical or formal approaches to how the economy works.

Be able to learn autonomously.

Be able to make decisions.

Be able to make decisions under certainty and uncertainty environments.

Be able to solve problems.

Be able to transmit and communicate complex ideas and approaches to both specialised and lay audiences.

Be able to work in a team.

Demonstrate capacity for analysis and synthesis.

Have critical and self-critical capacity.

Have organisation and planning skills.

Show motivation for quality.

DESCRIPTION OF CONTENTS

1. INTRODUCTION

1.1 What is a game?

1.2 What does game theory study?

1.3 Strategic reasoning.

1.4 Game theory and the behavior of firms.

[OCRL], [Ch. 1, 1.1-1.4] and instructor's lecture notes.

2.1 The strategic form of a game and its matrix representation.

2.2 Dominant strategy: the Prisoners' Dilemma.

2.3 Efficiency: the problem of cooperation.



2. TOPIC 2. SIMULTANEOUS GAMES. ANTICIPATING THE OPPONENT'S BEHAVIOR. DOMINANT AND DOMINATED STRATEGIES.

- 2.1 The strategic form of a game and its matrix representation.
- 2.2 Dominant strategy: the Prisoners' Dilemma.
- 2.4 The best response function of a player.
- 2.5 Successive elimination of dominated actions.

[OCRL], [Chap. 2, 2.1-2.5] and instructor's lecture notes.

3. TOPIC 3 NASH EQUILIBRIUM: THE COORDINATION PROBLEM.

- 3.1 Nash equilibria of a game.
- 3.2 Simple properties of Nash equilibria.
- 3.3 The multiplicity of equilibria.
- 3.4 Social Preferences.

[OCRL], [Chap. 3, 3.1-3.7] and instructor's lecture notes.

4. TOPIC 4 SEQUENTIAL GAMES WITH PERFECT INFORMATION. CREDIBILITY AND STRATEGIC PLAYS

- 4.1 The decision tree of a game.
- 4.2 Strategies and action plans.
- 4.3 Strategic moves.
- 4.4 Commitments, threats and credible promises: the principle of sequential rationality.
- 4.5 Backward induction and the Perfect Nash Equilibrium.

[OCRL], [Ch. 4, 4.1-4.6] and instructor's lecture notes.

5. TOPIC 5. REPEATED GAMES AND TACIT COOPERATION

TOPIC 5. REPEATED GAMES AND TACIT COOPERATION

- 5.1 Time preferences.
- 5.2 Threat of punishment and cooperation.

[OCRL], [Ch. 6, 6.1-6.4] and instructor's lecture notes.

- 6.1 Equilibria in games with private information.
- 6.2 The problem of adverse selection: the used car market.



6. TOPIC 6. GAMES WITH PRIVATE INFORMATION

6.1 Equilibria in games with private information.

6.3 Signaling in the market: warranties, advertising and education.

[OCRL], [Ch. [Cap. 7, 7.1-7.5]] and instructor's lecture notes.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	30,00
Classroom practices	15,00
Total hours	45,00

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	0,00
Independent study and work	15,00
Preparation of lessons	10,00
Preparation for assessment activities	20,00
Resolution of case studies	15,00
Total hours	60,00

TEACHING METHODOLOGY

The methodology for teaching the subject of Strategic Behavior, both in theoretical and practical classes, will be oriented to combine the capacity for individual work with that of teamwork. More precisely, this methodology can be described as follows:

Theoretical and practical classes where the professor will explain the most interesting concepts and will develop the most complex instruments for the course. Attendance is essential because it guarantees the correct transmission of knowledge and guides the students in their personal work.

- For the practical classes, students will previously prepare a set of practical cases and exercises to be worked on in the classroom. On the one hand, each student must prepare these tasks individually and, on the other hand, students will be asked (either individually or in groups) to solve and present some of these tasks in the classroom for the rest of their classmates. This is intended to develop the student's ability to organize forms of group work, to solve problems, to communicate orally and in writing. The assigned tasks, whether individual or joint, may give rise to "deliverables" to be evaluated by the teacher.

EVALUATION

The course of Strategic Behavior will be evaluated based on the consideration of the following aspects:



The evaluation of the subject is based on a set of continuous assessment activities and a final exam. The total evaluation is broken down as follows: 40% of the overall grade corresponds to the continuous evaluation tasks and 60% of the overall grade corresponds to the final exam.

The final exam is compulsory and passing it is a prerequisite for passing the course. The test is considered passed when the grade is equal or higher than 3 points out of 6.

The continuous evaluation will consist of individual or group tests in the classroom, solving exercises and problems, handing in questionnaires, active participation in class, exercises to identify strategic situations in real life, etc.

The final grade will be obtained as the sum of the final test grade plus the continuous evaluation grade.

The course will be considered passed if the student obtains 5 points out of 10 in the sum of the final exam and the continuous evaluation.

In the first call, in case of not doing the continuous evaluation tasks, the student will only be able to obtain the points of the final exam (6 maximum), and would need to obtain a grade of 5 out of 6 in the final exam to pass the course.

It is considered that part of the continuous evaluation is recoverable (20%) and the other 30% is not recoverable. This means that in the second and subsequent exams, the student has two options:

- (i) waive the grade of the continuous evaluation (indicating it in the exam) and the final exam will be graded on a maximum of 8 points (being necessary to obtain 5 points to pass the subject); or
- (ii) maintain the grade of the continuous evaluation and the final exam will be graded on a maximum of 6 points.

REFERENCES

- Olcina, G. , Calabuig, V., y Rodriguez-Lara, I., *Introducción a la Teoría de Juegos y la Conducta Estratégica*, , 2018, E. Pearson. [OCRL]
- Gardner, R., *Juegos para empresarios y economistas*, 1999, Antoni Bosch Editor, -Ferreira, J.L., *Game Theory: An applied introduction* , Palgrave Macmillan, 2019. -Dixit, A. y Nalebuff, R., *El arte de la estrategia*, 2012, Antoni Bosch Editor. -Dixit, A. and Skeath, S., *Games of Strategy*, 2004, Norton.