

BASIC DETAILS:

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| Subject: | BUSINESS WORKSHOP I | | |
| Id.: | 30407 | | |
| Programme: | GRADUADO EN ADMINISTRACIÓN Y DIRECCIÓN DE EMPRESAS (BOE 26/11/2010) | | |
| Module: | MÓDULO TRANSVERSAL | | |
| Subject type: | OBLIGATORIA | | |
| Year: | 2 | Teaching period: | Primer Cuatrimestre |
| Credits: | 6 | Total hours: | 150 |
| Classroom activities: | 64 | Individual study: | 86 |
| Main teaching language: | Inglés | Secondary teaching language: | Castellano |
| Lecturer: | MUÑOZ YANGÜELA, IÑIGO (T) | Email: | imunoz@usj.es |

PRESENTATION:

The subject Game Theory aims to study the behaviour of individual agents when their utility depends not only on their own actions, but also on the actions of the other agents in the game. This subject studies the possible combinations and outcomes that may happen in any of these games when the agents act rationally and predictably.

One of the main targets of this course will be to understand that the Game Theory has multiple applications, and has been used in making business, economic, political and even military decisions. It is a very useful tool when we try to understand the human behaviour.

Students will have to understand the value of Game Theory, being able to solve the problems and the cases, and to create new ones using the tools provided by this subject. In sum, they will have to demonstrate knowledge of Game Theory, as well as of its tools.

Finally, we will make an introduction of Behavioural Economics theory and how our decisions are affected by social and psychological influences, as well as a rational calculation. We will play games demonstrating how irrational can become given specific circumstances.

PROFESSIONAL COMPETENCES ACQUIRED IN THE SUBJECT:

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| General programme competences | G01 | Ability to analyse and summarise information from several sources. | |
| | G02 | Creative and efficient resolution of problems that arise in day-to-day, in order to ensure the highest levels of quality of professional work. | |
| | G03 | Ability to organise and plan the work in the context of continuous improvement | |
| | G04 | Use of information and communication technologies | |
| | G05 | Ability to work effectively in interdisciplinary teams, integrating and participating in scientific and professional teamwork, contributing ideas and respecting and valuing the diversity of views of other team members. | |
| | G06 | Ability to incorporate ethical principles into the professional culture, giving priority to ethical commitment to customers and society. | |
| | G07 | Ability to work in an international context and innovate and adopt new approaches used in other national contexts. | |
| | G09 | Oral and written communication in English in academic and professional contexts. | |
| | G10 | Ability to apply the acquired knowledge, adapting it to the needs and special features of each situation and person. | |
| | G11 | Ability to come up with new ideas (creativity). | |
| | G13 | Ability to develop learning strategies throughout life to be able to acquire new knowledge, by developing their own academic and professional path. | |
| | G14 | Oral and written communication in native language and in English, according to the needs of their field of study and the demands of their academic and professional environment. | |
| | G15 | Ability to establish and meet the most appropriate quality criteria and apply methodologies and work strategies geared towards continuous improvement. | |
| | Specific programme competences | E01 | Understand the specific aspects of the operation, management and control of the different functional areas of the company. |
| | | E02 | Know and understand the local, national and international socio-economic context in which the |

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| | | companies operate and be able to interpret its impact on them. |
| | E03 | Ability to apply the acquired knowledge of the functional areas of the company and the socio-economic environment. |
| | E04 | Ability to identify related variables and understand their impact on business organisations. |
| | E13 | Know the decision making processes in terms of policy and business strategy. |
| | E14 | Understand the principles of business ethics and be able to design scenarios in which these principles can be put into business practice. |
| | E15 | Propose, plan and lead business innovation projects that ensure the competitiveness of the company. |
| Learning outcomes | R1 | Express themselves confidently in an English language business environment. |
| | R2 | Prepare and give a presentation in English. |
| | R3 | Work as a member of a group in order to solve business related challenges. |
| | R4 | Use a broad English vocabulary and speak English with improved fluency. |
| | R5 | Analyze a business related problem and offer constructive solutions. |
| | R6 | Prepare a business plan. |

PRE-REQUISITES:

Although there are no compulsory pre-requisites, it is highly advisable to have attended the course of mathematics and economics. We will use some mathematical concepts but the Subject is focus on concepts and strategic thinking.

SUBJECT PROGRAMME:

Subject contents:

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| 1 - Introduction to Game Theory |
| 1.1 - Introduction |
| 1.2 - What is a "game"? |
| 1.3 - Introduction to Game Theory |
| 1.4 - Different types of Games |
| 2 - Static Games. Complete Information |
| 2.1 - Introduction |
| 2.2 - Dominance |
| 2.3 - Nash Equilibrium |
| 2.4 - Mixed Strategies. |
| 3 - Dynamic Games. Complete Information |
| 3.1 - Dynamic games Introduction |
| 3.2 - Backward induction |
| 3.3 - Extension of dynamic games |
| 3.4 - Other issues related to dynamic games. Application to a Business Plan |
| 4 - Cooperation |
| 4.1 - Reasons for cooperation |
| 4.2 - Factors influencing cooperation |
| 4.3 - Commitment |
| 5 - Uncertainty. imperfect information |
| 5.1 - Static Games. Auctions |
| 5.2 - Dynamic Games. Uncertainty |
| 6 - Behavioural Economics |
| 6.1 - Economics and Behaviour |
| 6.2 - Motivation and incentives |
| 6.3 - Quick thinking and Risky choices |

Subject planning could be modified due unforeseen circumstances (group performance, availability of resources, changes to academic calendar etc.) and should not, therefore, be considered to be definitive.

TEACHING AND LEARNING METHODOLOGIES AND ACTIVITIES:

Teaching and learning methodologies and activities applied:

The main methodologies used in this course will be:

- Theoretical presentation of the main aspects of the subject. These explanations will be accompanied by practical exercises to reinforce the knowledge. In any case, the active participation of students will always be encouraged.
- Two practical cases to be solved individually at home and in class
- Two practical cases to be solved in groups at home and in class
- Presentation of these cases in class. Students must present these cases in class to their counterparts if so required by the teacher, being able to answer their questions.

COVID-19: Due to covid-19, group cases should be conducted with all sanitary prescriptions, using online tools to develop group discussions and maintaining social distance, the use of masks and other hygienical preventions if groups meet presentially.

Online sessions will be conducted via TEAMS software programme

Group cases will be developed by students as their own intelectual document, complying with intelectual property and the anti plagiarism regulations

Student work load:

| Teaching mode | Teaching methods | Estimated hours |
|-----------------------------|---|-----------------|
| Classroom activities | Master classes | 26 |
| | Other theory activities | 4 |
| | Practical exercises | 14 |
| | Practical work, exercises, problem-solving etc. | 7 |
| | Debates | 4 |
| | Coursework presentations | 5 |
| | Assessment activities | 4 |
| Individual study | Tutorials | 4 |
| | Individual study | 46 |
| | Individual coursework preparation | 15 |
| | Group cousework preparation | 15 |
| | Compulsory reading | 2 |
| | Recommended reading | 4 |
| Total hours: | | 150 |

ASSESSMENT SCHEME:

Calculation of final mark:

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| Final exam: | 50 % |
| Individual coursework 2: | 15 % |
| Individual coursework 1: | 10 % |
| Group coursework 1: | 15 % |
| Group coursework 2: | 10 % |
| TOTAL | 100 % |

*Las observaciones específicas sobre el sistema de evaluación serán comunicadas por escrito a los alumnos al inicio de la materia.

BIBLIOGRAPHY AND DOCUMENTATION:

Basic bibliography:

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| Osborne, M.J. (2009) An Introduction to Game Theory. International Edition, Oxford University Press. |
| Pérez, J., Jimeno, J.L. and Cerdá, E. (2013) Teoría de Juegos, 2ª Ed. Edit. Garceta |
| Baddeley, M (2017) Behavioural Economics: A Very Short Introduction. Oxford University Press. |

Recommended bibliography:

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| Dixit, A. K. y Skeath (2004) Games of Strategy, 2ª Ed. Nueva York: W. W. Norton |
| Harrington, J. (2008) Games, Strategies and Decision Making, Worth Publishers |
| Ochs, J. (1995) Coordination problems, in Handbook of experimental economics (John H. Kagel and Alvin E. Roth, eds.) 195-251. Princeton: Princeton University Press |
| Watson, J. (2008) Strategy: An Introduction to Game Theory, 2ª Ed. Nueva York: W. W. Norton |
| Ariely, Dan (2017) Las trampas del Dinero. Ariel |
| Thaler, Richard (2015): Misbehaving, the making of behavioural economics. Penguin books |

Recommended websites:

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| Game theory | www.gametheory.net |
| Game Theory Society | www.gametheorysociety.org |
| Cleverism | https://www.cleverism.com/applied-game-theory-day-day-business-operations/ |