

## DATOS BÁSICOS DE LA GUÍA DOCENTE:

<b>Materia:</b>	BUSINESS WORKSHOP I		
<b>Identificador:</b>	32260		
<b>Titulación:</b>	GRADUADO EN ADMINISTRACIÓN Y DIRECCIÓN DE EMPRESAS (CA)		
<b>Módulo:</b>	MÓDULO TRANSVERSAL		
<b>Tipo:</b>	OBLIGATORIA		
<b>Curso:</b>	2	<b>Periodo lectivo:</b>	Primer Cuatrimestre
<b>Créditos:</b>	6	<b>Horas totales:</b>	150
<b>Actividades Presenciales:</b>	58	<b>Trabajo Autónomo:</b>	92
<b>Idioma Principal:</b>	Inglés	<b>Idioma Secundario:</b>	Castellano
<b>Profesor:</b>	FERNANDEZ DE NAVARRETE GONZALEZ VALERIO, JUAN ANTONIO (T)	<b>Correo electrónico:</b>	jafernandeznavarrete@usj.es

## PRESENTACIÓN:

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.

## COMPETENCIAS PROFESIONALES A DESARROLLAR EN LA MATERIA:

<b>Competencias Generales de la titulación</b>	G01	Capacidad de análisis y síntesis de las informaciones obtenidas de diversas fuentes	
	G02	Resolución creativa y eficaz de los problemas que surgen en la práctica diaria, con el objetivo de garantizar los niveles máximos de calidad de la labor profesional realizada	
	G03	Capacidad de organización y planificación del trabajo en el contexto de la mejora continua	
	G04	Uso de las tecnologías de la información y la comunicación	
	G05	Capacidad de trabajar de forma eficaz en equipos interdisciplinares, participando e integrándose en los trabajos del equipo en sus vertientes científicas y profesionales, aportando ideas y respetando y valorando la diversidad de criterios de los miembros del equipo	
	G06	Capacidad de incorporar a la cultura profesional los principios éticos y deontológicos, teniendo como prioridad de actuación el compromiso ético con los clientes y la sociedad.	
	G07	Capacidad de trabajar en un contexto internacional y de aproximarse a las innovaciones y nuevos enfoques empleados en otros contextos nacionales	
	G09	Capacidad para comunicarse en inglés en contextos académicos y profesionales.	
	G10	Capacidad de aplicar los conocimientos adquiridos, adaptándolos a las exigencias y particularidades de cada situación y persona	
	G11	Capacidad de generar nuevas ideas (creatividad)	
	G13	Capacidad de desarrollar estrategias de aprendizaje a lo largo de toda la vida para que sea capaz de adquirir nuevos conocimientos, a través del desarrollo su propio itinerario académico y profesional	
	G14	Capacidad de comunicación oral y escrita en el idioma materno y en inglés, según las necesidades de su campo de estudio y las exigencias de su entorno académico y profesional.	
	G15	Capacidad de establecer y cumplir los criterios de calidad más apropiados y emplear metodologías y estrategias de trabajo orientadas a la mejora continua.	
	<b>Competencias</b>	E01	Conocer los aspectos específicos relativos al funcionamiento, gestión y control de las

<b>Específicas de la titulación</b>		diferentes áreas funcionales de la empresa.
	E02	Conocer y comprender el contexto socioeconómico local, nacional e internacional en el que se desenvuelven las empresas y ser capaz de interpretar su impacto en las mismas
	E03	Capacidad de aplicación de los conocimientos adquiridos sobre las áreas funcionales de la empresa y el entorno socioeconómico
	E04	Capacidad de identificar las variables relacionadas y entender su impacto sobre las organizaciones empresariales
	E13	Conocer los procesos de toma de decisiones en materia de política y estrategia comercial
	E14	Comprender los principios de ética empresarial y ser capaz de diseñar escenarios en los que dichos principios puedan llevarse a la práctica empresarial
	E15	Proponer, planificar y liderar proyectos de innovación empresarial que aseguren la competitividad de la empresa
<b>Resultados de Aprendizaje</b>	R01	Expresar adecuadamente en inglés en un entorno laboral
	R02	Prepararse para realizar una presentación en inglés
	R03	Trabajar como miembro de un grupo para resolver retos empresariales
	R04	Utilizar vocabulario y hablar con fluidez en inglés
	R05	Analizar un problema empresarial y proporcionar soluciones constructivas
	R06	Preparar un plan de negocios.

### REQUISITOS PREVIOS:

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

### PROGRAMACIÓN DE LA MATERIA:

Observaciones:

Game theory studies situations of conflict and cooperation that we call games, in which rational individuals interact, analyzing the behaviors and results that are hopefully, either through individual decisions (in the case of non-cooperative games), or through agreements between the participants (case of cooperative games). Game Theory has provided analysis instruments (among them the balance of Nash) that have been effective and enriching in the study of many situations of an economic nature (in the study, for example, of oligopolistic markets, of public tenders or market regulation), and also of many situations social, political and legal. This has been reflected in economics study programs and the social sciences in general.

### Contenidos de la materia:

<b>1 - Introduction to Game Theory</b>
1.1 - Introduction
1.2 - What is a "game"?
1.3 - Introduction to Game Theory
1.4 - Different types of Games
<b>2 - Static Games. Complete Information</b>
2.1 - Introduction
2.2 - Dominance
2.3 - Nash Equilibrium
2.4 - Mixed Strategies
<b>3 - Dynamic Games. Complete Information</b>
3.1 - Introduction
3.2 - Backward induction
3.3 - Extension of dynamic games
<b>4 - Cooperation</b>
4.1 - Reasons for cooperation
4.2 - Factors influencing cooperation
4.3 - Commitment
<b>5 - Uncertainty. Imperfect information</b>
5.1 - Static Games. Auctions
5.2 - Dynamic Games. Uncertainty

<b>6 - Behavioural Economics</b>
6.1 - Economics and Behaviour
6.2 - Motivation and incentives
6.3 - Quick thinking and Risky choices

La planificación de la asignatura podrá verse modificada por motivos imprevistos (rendimiento del grupo, disponibilidad de recursos, modificaciones en el calendario académico, etc.) y por tanto no deberá considerarse como definitiva y cerrada.

### Previsión de actividades de aprendizaje:

Semana	Unidad/Bloque/Tema	Sesiones presenciales	Horas	Actividades de trabajo autónomo	Horas	
1	12/09/2022	1.Introduction to Game Theory	Welcome to CESUGA. Introduction	4	Review of the study guide and topic	2
2	19/09/2022	1.1.Introduction 1.2.What is a "game"?	Master class	4	Individual study of the main components of Game Theory, and their mathematical representation	5
3	26/09/2022	1.3.Introduction to Game Theory 1.4.Different types of Games	Master class; Problem solving	4	Individual study and resolution of exercises	4
4	03/10/2022	2.Static Games. Complete Information 2.1.Introduction 2.2.Dominance	Master class. Problem solving	4	Individual study and resolution of exercises	4
5	10/10/2022	2.3.Nash Equilibrium	Master class, Individual Case	2	Individual study and Case preparation	4
6	17/10/2022	2.4.Mixed Strategies	Master class, Problem solving	4	Individual study and resolution of exercises	4
7	24/10/2022	3.Dynamic Games. Complete Information 3.1.Introduction	Master class	4	Individual study and reading	4
8	31/10/2022	3.2.Backward induction 3.3.Extension of dynamic games	Master class; Problem solving; Individual Case	2	Individual study, resolution of exercises and Case preparation	4
9	07/11/2022	4.Cooperation 4.1.Reasons for cooperation	Master class	4	Individual study and reading	4
10	14/11/2022	4.2.Factors influencing cooperation 4.3.Commitment	Master class	4	Individual study and reading	4
11	21/11/2022	5.Uncertainty. Imperfect information 5.1.Static Games. Auctions 5.2.Dynamic Games. Uncertainty	Master class and case studies	4	Individual study and resolution of exercises	6
12	28/11/2022	1.Introduction to Game Theory 2.Static Games. Complete Information 3.Dynamic Games. Complete Information 4.Cooperation 5.Uncertainty. Imperfect information	Group Project submission	4	Group work	4
13	05/12/2022	1.Introduction to Game Theory 2.Static Games. Complete Information 3.Dynamic Games. Complete Information 4.Cooperation 5.Uncertainty. Imperfect information	Oral presentations	2	Group work	4
14	12/12/2022	6.Behavioural Economics 6.1.Economics and Behaviour	Master class	4	Individual study and reading	4
15	19/12/2022	6.2.Motivation and incentives 6.3.Quick thinking and Risky choices	Master class	2	Individual study and reading	4
16	26/12/2022	2.Static Games. Complete Information 3.Dynamic Games. Complete Information 4.Cooperation	Christmas Break	0	Individual work	6
17	02/01/2023	5.Uncertainty. Imperfect information 6.Behavioural Economics	Christmas Break	0	Individual work	4
18	09/01/2023	1.Introduction to Game Theory 2.Static Games. Complete Information 3.Dynamic Games. Complete Information 4.Cooperation 5.Uncertainty. Imperfect information	Course review	4	Individual study and reading	6

		6.Behavioural Economics				
19	16/01/2023	1.1.Introduction 2.Static Games. Complete Information 3.Dynamic Games. Complete Information 4.Cooperation 5.Uncertainty. Imperfect information 6.Behavioural Economics	Final Exam. The date will be officially communicated	0	Individual work	10
20	23/01/2023	1.Introduction to Game Theory 2.Static Games. Complete Information 3.Dynamic Games. Complete Information 4.Cooperation 5.Uncertainty. Imperfect information 6.Behavioural Economics	Final Exam. The date will be officially communicated	2	Individual work	4
21	30/01/2023	1.Introduction to Game Theory 2.Static Games. Complete Information 3.Dynamic Games. Complete Information 4.Cooperation 5.Uncertainty. Imperfect information 6.Behavioural Economics	Final exams week	0		1
<b>HORAS TOTALES PRESENCIALES:</b>				58	<b>HORAS TOTALES T. AUTÓNOMO:</b> 92	

### Observaciones para alumnos exentos a la asistencia obligatoria por circunstancias justificadas:

Those students who are unable to attend 80 % of classes during the semester due to justified reasons (previously communicated to the Programme Coordinator) will make an appointment with the teacher to explain the practical cases and answer questions by 26st of September. Anyway, those students will have to send via email the cases before the deadline. If they cannot meet with their peers, they will have the option to prepare the group project on their own, always with the permission of the teacher.

### METODOLOGÍAS Y ACTIVIDADES DE ENSEÑANZA Y APRENDIZAJE:

#### Metodologías de enseñanza-aprendizaje a desarrollar:

The **main methodologies** used in this course will be:

- Master classes. Theoretical presentations 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.
- Tutorials. The main purpose of the tutorials is to provide the students with the opportunity to resolve their queries regarding Game Theory, as well as to guide them with the preparation of their group projects.
- Two practical cases to be solved individually at home and in class.
- Group Projects to be developed throughout the semester.
- Presentation of the group projects in class. Students must present their projects in class to their counterparts if so required by the teacher, being able to answer their questions.

The **complementary teaching and learning methodologies and activities** of this subject will be very varied, from the resolution of cases to visiting companies or attending seminars, always providing solutions to real problems and under a common theme, which is Game Theory.

#### Integración de lengua inglesa en la materia:

This course is taught in **English**.

Internationalization is one of the main objectives of CESUGA. The teaching staff will be gradually

introducing materials, texts, audio-visual media and other content through English in the subjects they teach. This course of action is included in the principles of the European Area of Higher Education (EAHE). The aim is for students to naturally and effectively use English in authentic situations while studying subjects included in their degree programs. Exposure to the English language forms an intrinsic part of each degree programme's plan of studies.

#### Volumen de trabajo del alumno:

Modalidad organizativa	Métodos de enseñanza	Horas estimadas
Actividades Presenciales	Clase magistral	26
	Casos prácticos	12
	Resolución de prácticas, problemas, ejercicios etc.	6
	Debates	4
	Exposiciones de trabajos de los alumnos	2
	Proyección de películas, documentales etc.	2
	Asistencia a charlas, conferencias etc.	2
	Otras actividades prácticas	4
Trabajo Autónomo	Asistencia a tutorías	2
	Estudio individual	50
	Preparación de trabajos individuales	17
	Preparación de trabajos en equipo	15
	Lecturas obligatorias	4
	Lectura libre	4
<b>Horas totales:</b>		150

#### SISTEMA DE EVALUACIÓN:

##### Obtención de la nota final:

Trabajos individuales:	25 %
Trabajos en equipo:	25 %
Prueba final:	50 %
<b>TOTAL</b>	<b>100 %</b>

##### Observaciones específicas sobre el sistema de evaluación:

**Practical Cases and Group Projects:** In both individual cases and group projects, it will be evaluated not only the correct resolution of the cases, but also the capability to answer the questions made by the counterparts and the teacher, if required by the teacher. Moreover, it will be considered the body language and the language fluency. Thus, there may be differences in the marks obtained by each member of the group (in the case of group projects).

**Final Exam:** The exam will be formed by all the issues of the subject. It will be out of 10 points, and it will be necessary to obtain at least 5 points to pass the subject, irrespective of the marks obtained in the practical cases and group projects. This exam will consist of theoretical and practical exercises related to the material studied in the subject during the semester.

**In the second call, the mark of the practical cases and group projects will be maintained.** It will also be necessary to obtain at least 5 points in the exam to pass the subject, irrespective of the marks obtained in the practical cases and group projects. This exam will consist of theoretical and practical exercises related to the material studied in the subject during the semester.

**Important:** If the student gets a mark higher than 5 in the entire subject, but having failed the final exam, the final mark of the subject will be the same mark obtained in the final exam. As explained before, the mark of the practical cases and group projects are maintained for the second call.

**Spelling:** Within the evaluation criteria, the University considers spelling a priority issue. Under the protection of the changes in the language standard in the Spanish language included in the Spelling of

the Spanish Language (2010), published by the Real Academia Española, CESUGA has established some correction criteria related to this work that will be applied in all tests of the matter. The document that includes the set of criteria and its sanction is published in the University Teaching Platform (PDU) of the subject. The same applies if English is the main language. Refer to unacceptable grammar errors.

**Plagiarism:** Likewise, and in accordance with the University's Good Practices manual, the commission of plagiarism in any of the work carried out will be considered a very serious offense, since it violates the deontological code of any profession.

**Electronic devices** that disturb the attention and the correct development of the subject will not be allowed in class, unless expressly mentioned by the lecturer and those provided by the University.

**Absences:** Failure to attend class more than 20 % of the stipulated hours without authorization may lead to the loss of the evaluation on first call.

#### Métodos de evaluación:

Instrumento de evaluación	Resultados de Aprendizaje evaluados	Criterios de evaluación	%
Individual coursework	R01 R02 R04 R05	Well-resolved cases; quality of presentation: structure, fluency, body language, audiovisual support; answering questions; spelling and presentation; knowledge of the subject.	25
Group coursework	R01 R02 R03 R04 R05 R06	Well-resolved cases; quality of presentation: structure, fluency, body language, audiovisual support; answering questions; spelling and presentation; knowledge of the subject.	25
Final exam	R01 R05	Well-resolved cases; knowledge of the subject.	50
<b>Peso total:</b>			100

#### Observaciones para alumnos exentos a la asistencia obligatoria por circunstancias justificadas:

As explained before, those students who are exempt from compulsory attendance due to special circumstances will make an appointment with the teacher to explain the practical cases and answer questions. Anyway, those students will have to send via email the cases before the deadline. If they cannot meet with their peers, they will have the option to prepare the group project on their own, always with the permission of the teacher.

#### BIBLIOGRAFÍA Y DOCUMENTACIÓN:

##### Bibliografía básica:

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.

##### Bibliografía recomendada:

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  
Ariely, Dan (2017) Las trampas del Dinero. Ariel

##### Páginas web recomendadas:

Expansión	<a href="http://www.expansion.com">www.expansion.com</a>
Bolsas y Mercados Españoles	<a href="http://www.bolsasymercados.es">www.bolsasymercados.es</a>
Servicio de Información Empresarial ARDAN	<a href="http://www.ardan.es">www.ardan.es</a>

The Economist	<a href="http://www.theeconomist.com">www.theeconomist.com</a>
Bloomberg	<a href="http://www.bloomberg.com">www.bloomberg.com</a>
Forbes	<a href="http://www.forbes.com">www.forbes.com</a>

**OBSERVACIONES:**