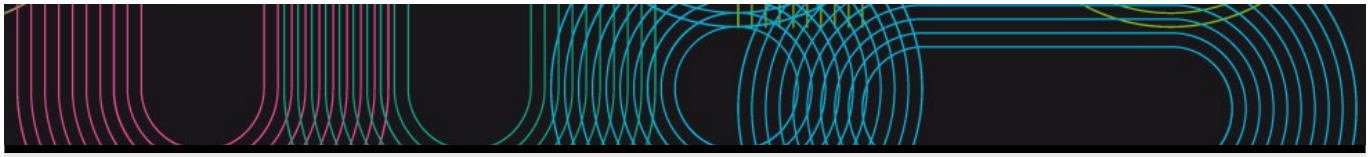
Universidade Vigo

Subject Guide 2011 / 2012



IDENTIFYING DATA				
(*)Xogos Coalicionais				
Subject	(*)Xogos Coalicionais			
Code	V03M044V01204			
Study programme	(*)Máster Universitario en Economía			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Optional	1st	2nd
Teaching language	Spanish			
Department				
Coordinator	Vidal Puga, Juan Jose			
Lecturers	Lorenzo Picado, Leticia Vidal Puga, Juan Jose			
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General description	Basic notions of theory of coalitional games will be studied and applied to economic models.			

Competencies	
Code	
A1	(*)Conocimiento de las herramientas matemáticas y estadísticas necesarias para manejar con rigor los modelos económicos presentes en la frontera de la investigación económica actual
A2	(*)Conocimiento profundo de los modelos micro y macroeconómicos y su aplicación precisa a situaciones concretas
A4	(*)Capacidad para modelar situaciones económicas concretas y obtener resultados con datos numéricos aplicando las técnicas econométricas pertinentes
B1	(*)Demostrar un entendimiento sistemático del campo de la economia y un dominio de sus destrezas y métodos de investigación
B2	(*)Demostrar la habilidad de de concebir, diseñar, implementar y adaptar un procedimiento o modelo económico con rigor intelectual y científico
B3	(*)Realizar contribuciones que amplíen las fronteras del conocimiento fruto de la investigación original y que sean merecedoras de ser publicadas en publicaciones referenciadas de ámbito internacional
B4	(*)Demostrar la capacidad de análisis crítico, evaluación y síntesis de ideas nuevas y complejas

Learning aims		
Expected results from this subject	Typology	Training and Learning Results
To know the TU and NTU coalitional game applications.	know	A1 A2 B1
To recognize TU and NTU models.	Know How	A1 A2
To know the various solution concepts, their properties and applicability.	Know How	A1 A2 A4 B1 B2
To solve eficienctly problems using the most appropiate tools.	Know How	A1 B1 B2
To know the use of coalitional game theory. Recognize it as a tool to know the research field.	Know be	B2 B3 B4

Contents	
Topic	
1: Transferable Utility (TU) games	The characteristic function. The imputation set.
2. Solution concepts in transferable utility games	Core. Stable sets. Kernel and prekernel. Nucleolus and prenucleolus. The Shapley value. Axiomatic caracterizations.
3. Aplications	Simple games. Power indices: Shapley-Shubik and Banzhaf. Bankruptcy problems. Airport game. Minimum cost spanning tree problems.
4. Non-Transferable Utility (NTU) games	The characteristic function. Properties. Solutions in NTU games. Bargaining problems and hyperplane games. Examples.
5. Solutions in bargaining problems	Nash solution. Kalai-Smorodinsky solution. Egalitarian solution. Axiomatic characterization.
6. Solutions in general NTU games	The core. The Harsanyi value. The Shapley lamdba-transfer value. The Maschler-Owen consistent value. Axiomatic characterization.

Planning			
	Class hours	Hours outside the classroom	Total hours
Master Session	10	20	30
Troubleshooting and / or exercises	5	10	15
Group tutoring	10	5	15
Autonomous troubleshooting and / or exercises	2	13	15
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Methodologies	
	Description
Master Session	Classes explaining the theoretical bases and guidelines for the exercises.
Troubleshooting and / or exercises	Activities based on problems or exercises.
Group tutoring	Follow-up of the work of the students.
Autonomous troubleshooting and / or exercises	Final exam.

Personalized attention	
Methodologies	**Description**
Group tutoring	During the tuition classes, the students will be able to ask questions.

Assessment		
	Description	Qualification
Troubleshooting and / or exercises	Problems and/or exercises.	60
Autonomous troubleshooting and / or exercises	Final exam.	40

Other comments on the Evaluation

Second call: Exam (100%)

Sources of information

G. Owen, **Game Theory**, 1995,

J. Pérez, J.L. Jimeno, E. Cerdá, **Teoría de Juegos**, 2004,

M. Osborne, A. Rubinstein, **A course in Game Theory**, 1994,

R. Myerson, **Game Theory. Analysis of Conflict**, 1991,

J. Eichenberg, **Game Theory for Economists**, 1993,

J. Friedman, **Game Theory with apllications to economists**, 1986,

R. Gardner, **Juegos para empresarios y economistas**, 1996,

F. Vega-Redondo, **Economía y Juegos**, 2000,

G. González Díaz, J. García Jurado, G. Fiestras Janeiro, **An introductory course on mathematical game theory**, 2010,

Recommendations