

MODULE	SUBJECT MATTER	YEAR	SEMESTER	CREDITS	TYPE
Economics Analysis	Microeconomics III	2	2	6	Compulsory
TEACHING STAFF <sup>(1)</sup>			ADDRESS, TELEPHONE NUMBER, EMAIL, ETC. DIRECCIÓN COMPLETA DE CONTACTO PARA TUTORÍAS (Dirección postal, teléfono, correo electrónico, etc.)		
<ul style="list-style-type: none"><li>Elena Molis Bañales (Groups A, B and C)</li><li>Ángel Solano García (Groups C and D)</li></ul>			Department of Economic Theory and History, 3th floor, Faculty of Economics and Business.  Elena Molis. Office number B-326 Email: <a href="mailto:emolis@ugr.es">emolis@ugr.es</a>  Ángel Solano. Office number B-322 Email: <a href="mailto:asolano@ugr.es">asolano@ugr.es</a>		
			TIMETABLE FOR TUTORIALS OR LINK TO WEBSITE		
			Elena Molis Monday and Tuesday: 10:30 to 13:30  Ángel Solano: Wednesday and Thursday: 10:00 to 13:00		
BELONGS TO UNDERGRADUATE DEGREE PROGRAMME			AND ALSO TO OTHER UNDERGRADUATE DEGREE PROGRAMMES		
Bachelor's Degree in Economics					
PREREQUISITES OR RECOMMENDATIONS (where applicable)					
To have studied and passed Microeconomics I and Microeconomics II					

<sup>1</sup> Consult any updates in Acceso Identificado > Aplicaciones > Ordenación Docente

(∞) This course guide should be filled in according to UGR regulations on assessment of student learning: (<http://secretariageneral.ugr.es/pages/normativa/fichasugr/ncg7121/>)

## BRIEF DESCRIPTION OF CONTENT (ACCORDING TO OFFICIAL VALIDATION REPORT)

Equilibrium; Strategic behavior; Game Theory

## GENERAL AND SPECIFIC COMPETENCES

### General competences:

- Ability to analyse and summarize
- English language written and speaking skills
- Capacity to solve problems
- Capacity for team work in a multidisciplinary team
- Ability to work in an international environment
- Capacity for basic understanding of related knowledge fields
- Capacity for a critical and self-critical reasoning
- Capacity to learn and work alone
- Capacity to apply basic knowledge to practice
- Ability in looking for information and conducting research
- Ability to design and manage projects

### Specific competences:

- Know the basic microeconomic and macroeconomic models
- Know how perfectly and imperfectly competitive markets work.
- Know the basic models of industrial organization.
- Acquire knowledge on Game Theory.
- Contribute to a good management of resource allocation, both in the private and public arena.
- Identify and anticipate relevant economic problems related to resource allocation in general - both in the private and public arena- using the knowledge and concepts provided in the degree.
- Provide rationality to the analysis and the description of any aspect of the economic reality.
- Evaluate the consequences of alternative courses of action and select the best options given the objectives previously set.
- Issue advisory reports on specific situations in the economy (international, national or regional) or in specific sectors
- Understand economic institutions as a result of the application of theoretical or formal representations of how the economy works.
- Read and communicate professionally in more than one language, in particular in English.
- Apply professional criteria to the analysis of professional problems based on the use of theoretical instruments.
- Be able to fluently communicate in an environment where team work applies.
- Establish and ethical commitment at work. Capacity for team work. Critical and self-critical abilities. Work in an international environment.
- Motivation to pursue quality standards.



- Derive from the data relevant information that cannot be recognized by non-professionals.
- Use frequently information and communication technology during the professional performance.

#### OBJECTIVES (EXPRESSED AS EXPECTED LEARNING OUTCOMES)

- The student will be able to understand and model the strategic behaviour of the different agents related to an Economy/Society (consumers, firms, politicians,...)

#### DETAILED SYLLABUS

##### THEORY:

##### TOPIC 1: STATIC GAMES WITH COMPLETE INFORMATION

- 1.1.- Elements of a Game and representation in normal form
- 1.2.- Iterative Elimination of strictly dominated strategies
- 1.3.- Nash equilibrium
- 1.4.- Mixed strategies and Existence of Nash Equilibrium

##### TOPIC 2: DYNAMIC GAMES WITH COMPLETE INFORMATION

- 2.1- Representation of the games in extensive form
- 2.2- Subgame Perfect Nash Equilibrium
- 2.3- Repeated Games

##### TOPIC 3: STATIC GAMES WITH INCOMPLETE INFORMATION

- 3.1- Introduction
- 3.2- Bayesian Nash equilibrium
- 3.3- Applications

##### TOPIC 4: DYNAMIC GAMES WITH INCOMPLETE INFORMATION

- 4.1- Signalling Games
- 4.2- Applications

##### TOPIC 5: GENERAL BALANCE AND EFFICIENCY

- 5.1- General Balance
- 5.2- Efficiency

##### PRACTICAL AGENDA:

Presentation of works prepared by students

##### Laboratory works:

- Practice 1. List 1 of exercises.
- Practice 2 List 2 of exercises.
- Practice 3. List 3 of exercises.
- Practice 4. List 4 of exercises.

#### BIBLIOGRAPHY



#### BASIC READING LIST

- Gibbons, R. (2003): Game Theory for Applied Economists. Princeton University Press

#### COMPLEMENTARY READING

- Ferreira J.L. (2019) Game Theory: An Applied Introduction. Red Globe Press.
- Osborne, M. J. (2004): An Introduction to Game Theory. Oxford: Oxford University Press
- Osborne, M.J and Rubinstein A. (1994): A course in Game Theory. MIT Press

#### RECOMMENDED LINKS

#### TEACHING METHODOLOGY

The teaching methodology followed in this course will consist of:

- 30% of face-to-face teaching in the classroom (45 hours).
- 60% of individualized study of the student, search, consultation and treatment of information, resolution of problems and practical cases, and completion of work and exhibitions (90h.).
- 10% for individual and / or group tutoring and evaluation (15h).

The training activities will be developed from a participatory and applied methodology that focuses on the student's work (face-to-face and non-face-to-face / individual and group). Among the training activities designed for the degree and in charge of organizing the teaching and learning processes (master class, practical activities, seminars or workshops, individual / group activities and academic tutorials), the subject will develop those activities that best suit the contents and skills to be acquired by the students.

#### ASSESSMENT (ASSESSMENT INSTRUMENTS, CRITERIA AND PERCENTAGE VALUE OF FINAL OVERALL MARK, ETC.)

According to the Rules of assessment and grading of the students of the University of Granada (latest changes approved by the Governing Board of 26th October 2016), the assessment of students' academic performance will reflect public, objective and impartial criteria, and will preferably be continuous.

The continuous evaluation will consist of the weighted average of the following tasks:

- Partial exam consisting of a test questionnaire about the first two topics (30%)
- A work in group and its presentation in class (30%)
- Final exam consisting of a test questionnaire including all the topics (40%)

The partial and final exams will be compulsory for the calculation of the weighted average. In addition, the work in groups will be considered for calculating the final mark if the weighted average grade obtained between the two exams (that is, the grade for the partial exam over 10 points \* 0.3 + the final exam grade over 10 points \* 0.4) is greater or equal 3. If the threshold is not reached, the final grade for the course will be the outcome of the previous formula.

All exams will be penalized for wrongly answered answers.

**Extraordinary assessment:** This exam will be a test questionnaire. Wrong answers will penalize. The grade of the extraordinary assessment will be the mark obtained in this exam.



Article 8 of the current Rules for Assessment provides for the taking of a single final assessment, which students may apply for in the first two weeks of teaching of the subject (or two weeks following change of enrolment). Application is to be made through the electronic system, citing and accrediting the reasons for not being able to undergo the system of continuous assessment (reasons of employment, health, disability or any other correctly justified cause), with the understanding that this assessment is undertaken in a single academic act in order to accredit that the student has acquired in full the competencies described.

#### DESCRIPTION OF THE EXERCISES WHICH WILL CONSTITUTE SINGLE FINAL ASSESSMENT AS ESTABLISHED IN UGR REGULATIONS

- This exam will be a test questionnaire. Wrong answers will penalize.

#### SCENARIO A (ON-CAMPUS AND REMOTE TEACHING AND LEARNING COMBINED)

##### TUTORIALS

TIMETABLE (According to Official Academic Organization Plan)	TOOLS FOR TUTORIALS (Indicate which digital tools will be used for tutorials)
The same as in the case of full presentality	Email and Google Meet

##### MEASURES TAKEN TO ADAPT TEACHING METHODOLOGY

On-campus and remote teaching will be combined. The groups will be split in sub-groups to allow some of them go on-campus and other via streaming in a rotatory system. The structure and timing will depend on the measures adopted by the School of Economics and Management and the Department.

##### MEASURES TAKEN TO ADAPT ASSESSMENT (Instruments, criteria and percentage of final overall mark)

###### Ordinary assessment session

- Partial exam will be do online through PRADO, consisting of a test questionnaire about the first two topics (30%)
- A work in group and its presentation in class (30%)
- Final exam consisting of a test questionnaire including all the topics (40%). The test will be, preferably, on campus. If this is not possible, it will be online (Prado).

The partial and final exams will be compulsory for the calculation of the weighted average. In addition, the work in groups will be considered for calculating the final mark if the weighted average grade obtained between the two exams (that is, the grade for the partial exam over 10 points \* 0.3 + the final exam grade over 10 points \* 0.4) is greater or equal 3. If the threshold is not reached, the final grade for the course will be the outcome of the previous formula.

All exams will be penalized for wrongly answered answers.

###### Extraordinary assessment session

- This exam will be a test questionnaire. Wrong answers will penalize. The grade of the extraordinary assessment will be the mark obtained in this exam. The test will be, preferably, on campus. If this is not possible, it will be online (PRADO).



Single final assessment	
<ul style="list-style-type: none"> <li>This exam will be a test questionnaire. Wrong answers will penalize. The test will be, preferably, on campus. If this is not possible, it will be online (PRADO).</li> </ul>	
SCENARIO B (ONCAMPUS ACTIVITY SUSPENDED)	
TUTORIALS	
TIMETABLE (According to Official Academic Organization Plan)	TOOLS FOR TUTORIALS (Indicate which digital tools will be used for tutorials)
The same as in the case of full presentality	Email and Google Meet
MEASURES TAKEN TO ADAPT TEACHING METHODOLOGY	
<ul style="list-style-type: none"> <li>Theoretical lessons by means of recorded videos uploaded to PRADO and some sessions with students through Google Meet.</li> <li>Problem sets and their corresponding solutions available at Prado.</li> <li>Students will present their works through Google Meet.</li> </ul>	
MEASURES TAKEN TO ADAPT ASSESSMENT (Instruments, criteria and percentage of final overall mark)	
Ordinary assessment sesión	
<ul style="list-style-type: none"> <li>Partial exam will be online through PRADO, consisting of a test questionnaire about the first two topics (30%)</li> <li>A work in group and its presentation through Google Meet (30%)</li> <li>Final exam will be online through PRADO consisting of a test questionnaire including all the topics (40%)</li> </ul> <p>The partial and final exams will be compulsory for the calculation of the weighted average. In addition, the work in groups will be considered for calculating the final mark if the weighted average grade obtained between the two exams (that is, the grade for the partial exam over 10 points * 0.3 + the final exam grade over 10 points * 0.4) is greater or equal 3. If the threshold is not reached, the final grade for the course will be the outcome of the previous formula.</p> <p>All exams will be penalized for wrongly answered answers.</p>	
Extraordinary assessment session	
<ul style="list-style-type: none"> <li>This exam will be a test questionnaire. Wrong answers will penalize. The grade of the extraordinary assessment will be the mark obtained in this exam. The test will be online through PRADO.</li> </ul>	
Single final assessment	
<ul style="list-style-type: none"> <li>This exam will be a test questionnaire. Wrong answers will penalize. The test will be online through PRADO.</li> </ul>	
ADDITIONAL INFORMATION (if necessary)	



The Department of Economic Theory and History, in accordance with the Regulations for the attention to students with disabilities and other specific educational support needs (approved by the Governing Board of the University of Granada on 20th September 2016) will promote the right to education under conditions of equal opportunities to students with disabilities and other specific educational support needs. The necessary assistance actions will be established to achieve their full and effective inclusion, guaranteeing their right to inclusive education, in accordance with the principles of non-discrimination, equal opportunities and universal accessibility, so that they can achieve the maximum possible development of their personal and , in any case, the objectives established in general for all students.

The information in this guide may be modified due to supervening circumstances, changes in regulations or new guidelines that may be given by the health authorities, the University, or the Faculty of Economics and Business.

