

SUBJECT TEACHING GUIDE

G2094 - Mathematics for Economists II

Double Degree in Administration and Business Management and Economics First Degree in Economics

Academic year 2025-2026

1. IDENTIFYING DATA					
Degree	Double Degree in Administration and Business Management and Economics First Degree in Economics			Type and Year	Compulsory. Year 2 Compulsory. Year 2
Faculty	Faculty of Economics and Business Studies				
Discipline					
Course unit title and code	G2094 - Mathematics for Economists II				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Knowledge Field	Economic sciences, administration and business management, marketing, commerce, accountancy and tourism				
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. ECONOMIA
Name of lecturer	VALERIANO MARTINEZ SAN ROMAN
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Office	Edificio de las Facultades de Derecho y Ciencias Económicas y Empresariales. Planta: + 1. DESPACHO (E125)
Other lecturers	VANESA JORDA GIL LUIS ANTONIO ARTEAGA MOLINA XOSE LUIS FERNANDEZ LOPEZ

4. OBJECTIVES

Understand and apply fundamental mathematical tools to analyze economic phenomena in a rigorous and structured manner.

Formulate and solve real economic problems using appropriate mathematical tools.

Relate mathematical language to economic interpretation, developing a critical understanding of the limitations and scope of quantitative models.

Become familiar with basic computational tools to solve, simulate, and graphically represent mathematical models applied to economics.

Integrate prior mathematical knowledge with new analytical tools in an applied and progressive context.

6. SUBJECT PROGRAM

CONTENTS

1	<p>MATRIX ALGEBRA</p> <p>T1. Introduction to matrix algebra and matrix operations. T2. Inverse of a matrix and its interpretation. T3. Systems of linear equations in matrix form. T4. Economic applications of matrix algebra.</p>
2	<p>INTEGRAL CALCULUS</p> <p>T5. Introduction to summations and basic properties. T6. Fundamentals of integral calculus. T7. Double integration: calculation and economic interpretation. T8. Economic applications of integral calculus.</p>
3	<p>DIFFERENTIAL EQUATIONS</p> <p>T9. Introduction to ordinary differential equations. T10. Linear differential equations: solution and economic interpretation. T11. Difference equations. T12. Economic applications of differential equations.</p>

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
Computer Lab Sessions	Laboratory evaluation	No	Yes	10,00
Midterm Exam Unit 1	Written exam	No	Yes	30,00
Midterm Exam Unit 2	Written exam	No	Yes	30,00
Midterm Exam Unit 3	Written exam	No	Yes	30,00
TOTAL				100,00
Observations				
<p>To pass the course in the regular exam session, the student must obtain at least the minimum grade in each assessment test for each module (4 points). In addition, the weighted average grade of all assessment tests must be equal to or higher than 5 points.</p> <p>If the student does not pass or fails to reach the minimum grade in any of the partial exams for the course modules, they will have the opportunity to retake the exams for the content not passed during the regular exam session.</p> <p>If the student does not pass the course after the regular exam session, they may take a comprehensive exam covering all the course content in the extraordinary exam session (regardless of the grades obtained in the partial exams). The weight of this exam will be 100%.</p>				
Observations for part-time students				
<p>Part-time enrolled students may choose to follow the same assessment process as full-time students or opt to take exams covering all the course content in the official exam sessions. Part-time students must inform the course instructor of their choice prior to the date of the first continuous assessment test. This communication must be made via email.</p>				

8. BIBLIOGRAPHY AND TEACHING MATERIALS
BASIC
Sydsaeter, K. y Hammond, P. (2006). Matemáticas para el análisis económico. Prentice Hall. Madrid.
Wooldridge, J. (2015). Introductory econometrics: a modern approach (6th ed.). South Western Educational Publishing.
Costa Reparaz, E. (2003). Matemáticas para el análisis económico. Ediciones Académicas S.A. Madrid.
Costa Reparaz, E. y López, S. (2004). Problemas y cuestiones de matemáticas para el análisis económico. Ediciones Académicas S.A. Madrid.