



COURSE DESCRIPTION

1. GENERAL

SCHOOL	ECONOMIC SCIENCES		
DEPARTMENT	TOURISM		
LEVEL	Undergraduate		
COURSE CODE	MAT100	SEMESTER	1 st
COURSE TITLE	Mathematics		
INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS	ECTS	
Lectures	4	5	
COURSE CATEGORY	General Background		
COURSE TYPE	Compulsory		
PREREQUISITES	-		
LANGUAGE OF TEACHING AND EXAMINATIONS	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS			
URL	https://tourism.ionio.gr/en/undergraduate-studies/courses/1158/		
ECLASS			

2. TEACHING RESULTS

Teaching Results
Upon successful completion of the course, students will be able to: -understand the contribution and importance of mathematics in management and economic sciences -understand mathematical concepts, select and apply appropriate mathematical tools and techniques for solving management and economic problems -develop various problem-solving strategies -represent in a clear and comprehensible way the solution of problems
General Skills
<ul style="list-style-type: none">• Seek, analyze and synthesize data• Adaptation to new environments• Freedom of thought

3. CONTENT

<p>The aim of the course is for students to acquire the knowledge and to solve basic problems of calculus and linear algebra. The first part of the course focuses on elements of differential and integral calculus and the second part presents basic concepts of linear algebra. The aim is to familiarize students with the basic concepts of limit, continuity, derivatives of functions of one variable and partial derivatives of multivariable functions, optimization of functions, integrals, matrix theory and solving linear systems and so on through appropriate applications as key tools for studying the behavior of economic functions and models.</p> <p>Differential Calculus: Functions of one variable, Limits and Continuity, Derivatives, Analyzing Functions, Applications of Derivatives, Functions of two or more variables, Differentials, Partial derivatives, Maxima, Minima, and Saddle Points, Constraints and Lagrange Multipliers</p> <p>Integral Calculus: Integrals, Techniques of Integration, Applications</p>
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Linear Algebra: Matrices, Determinants, Systems of Linear Equations

4. TEACHING AND LEARNING METHODS - EVALUATION

TEACHING METHOD	Lectures										
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	<p>Use of ICT in Teaching: Electronic Classroom Management System (Open eClass), PowerPoint Slides, lecture notes in pdf, spreadsheets</p> <p>Use of ICT in Communication: Communication with students is achieved through the use of the Electronic Classroom Management System (Open eClass) and e-mail</p>										
TEACHING STRUCTURE	<table> <tr> <td>Activity</td> <td>Semester Workload</td> </tr> <tr> <td>Lectures</td> <td>52</td> </tr> <tr> <td>Literature Study and Analysis</td> <td>30</td> </tr> <tr> <td>Practice and Preparation</td> <td>43</td> </tr> <tr> <td>Course Total (ECTS: 5)</td> <td>125</td> </tr> </table>	Activity	Semester Workload	Lectures	52	Literature Study and Analysis	30	Practice and Preparation	43	Course Total (ECTS: 5)	125
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EVALUATION OF STUDENTS	<p>Written final examination, of graded difficulty, which may include:</p> <ul style="list-style-type: none"> • Multiple-choice questions. • Short Answer Questions • Problem solving/exercises <p>The individual assessment grades are indicated next to each topic.</p> <p>Interim assessments (progress tests) may be given. Their details (examination format, date, time, subject matter, weighting coefficient, etc.) are announced in good time. Interim assessments do not exempt the student from the final examination.</p> <p>The course calendar, the assessment criteria and weightings will be made known to students at the start of the course. Instructor reserves the right to adjust the pace to accommodate class progress. Students are responsible for keeping up with all adjustments to the course calendar.</p>										

5. BIBLIOGRAPHY

- Fundamental Methods of Mathematical Economics, Alpha C. Chiang, Kevin Wainwright, 2005, Boston, Mass. : McGraw-Hill/Irwin
- Mathematics for Economics, Hoy Michael, Livernois John, McKenna Chris, Stengos Thanasis, 4th Edition, 2022, The MIT Press
- Mathematics for Economics and Business, Jacques Ian, 9th edition, 2018, Pearson Education
- Mathematics for economists: An introductory textbook, Malcolm Pemberton, Nicholas Rau, 4th edition, 2015
- Calculus, Howard Anton, Irl C. Bivens, Stephen Davis, 10th edition, 2012, Wiley