

Course Unit Title:	Mathematics for Economists
Course Unit Code:	ECO230
Type of Course Unit: (Compulsory/Optional)	Compulsory
Level of Course Unit: (first, second or third cycle)	Bachelor (1 st Cycle)
Year of Study:	2
Semester when the unit is delivered:	4
Number of ECTS credits allocated:	6
Name of lecturer(s):	TBA
Learning Outcomes of the course unit:	
<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none"> • Identify the key elements of simple economic problems and be able to formulate such problems in mathematical terms; • Select, and apply appropriate mathematical techniques in order to solve such problems; • Interpret the results of solution methods in both economic and graphical terms. • Analyze simple economic problems using the mathematical techniques expounded in lectures; • Discuss how economic problems can be addressed using a suitable mathematical framework; • Explain elementary matrix algebra in a form suitable for application to econometrics and optimization; • Identify calculus of several variables, including optimization of functions of several variables, and be able to apply their knowledge to simple economic problems; • Assimilate mathematical and other technical material from undergraduate textbooks and recommended readings. 	
Mode of Delivery:	Face- to- face
Prerequisites and co-requisites:	ECO101, ECO102
Recommended optional program components:	None

Course Contents:**Objective:**

To equip students with knowledge and understanding of the fundamental of mathematics.

To equip students with the mathematical tools and methods which are used frequently in most economic modules and to demonstrate how they are applied;

To familiarize students with the role of mathematical techniques in economic analysis and econometrics.

Description:

Introduction: Mathematics in Economic Theory; Economic Models.

One-Variable Calculus: Foundations and Applications in Economics

Static (Or Equilibrium) Analysis: Equilibrium Analysis in Economics; Linear Models and Matrix Algebra; Applications in Economics and Econometrics.

Comparative-Static Analysis: Comparative Statics and the Concept of Derivative; Rules of Differentiation and Their Use in Comparative Statics; Comparative-Static Analysis of General-Function Models.

Optimization Problems: Optimization and Equilibrium Analysis; Optimization with Equality Constraints; Applications in Economics.

Dynamic Analysis: Economic Dynamics and Integral Calculus; First-Order Differential Equations; Applications in Economics.

Linear Programming and its Applications in Economics.

Nonlinear Programming and its Applications in Economics.

Recent developments and contemporary issues pertaining to the subject-matter of the course.

<p>Recommended or required reading:</p>	<p>Ernest F. Haeussler, Richard, S. Paul and Richard J. Wood: INTRODUCTORY MATHEMATICAL ANALYSIS FOR BUSINESS, ECONOMICS AND THE LIFE AND SOCIAL SCIENCES , Prentice Hall, 12th Edition</p> <p>Nickels, McHugh and McHugh : Understanding Business, McGraw Hill</p> <p>Boone & Kurtz: Contemporary Business, The Dryden Press</p> <p>Rachman, Mescon, Borre/Thill: Business Today, McGraw Hill</p> <p>Musselman/Jackson : Introduction to Modern Business, Prentice Hall</p> <p>Nickels, McHugh and McHugh : Understanding Business, McGraw Hill</p> <p>Rachman, Mescon, Borre/Thill : Business Today, McGraw Hill</p> <p>Hastings : Introduction to Business, McGraw Hill</p> <p>Alpha Chiang, C.: FUNDAMENTAL METHODS OF MATHEMATICAL ECONOMICS McGraw-Hill, Latest Edition</p> <p>Simon C./Blume L.: MATHEMATICS FOR ECONOMISTS Norton</p> <p>Dowling/Edward T. : MATHEMATICS FOR ECONOMISTS McGraw-Hill</p> <p>Intriligator/Michael D.: MATHEMATICAL OPTIMIZATION AND ECONOMIC THEORY, Prentice Hall</p> <p>Ian Jacques : MATHEMATICS FOR ECONOMICS AND BUSINESS, Prentice Hall</p>				
<p>Planned learning activities and teaching methods:</p>	<table border="1"> <tr> <td data-bbox="607 1654 1036 1745">Class Instruction</td> <td data-bbox="1036 1654 1469 1745">42 Hours</td> </tr> <tr> <td data-bbox="607 1745 1036 1841">Consultation</td> <td data-bbox="1036 1745 1469 1841">15 Hours</td> </tr> </table>	Class Instruction	42 Hours	Consultation	15 Hours
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Assessment methods and criteria:	<table border="1"> <tr> <td data-bbox="617 226 1177 262">Mid – Term Examination</td> <td data-bbox="1177 226 1404 262">40%</td> </tr> <tr> <td data-bbox="617 262 1177 298">Final Examination</td> <td data-bbox="1177 262 1404 298">50%</td> </tr> <tr> <td data-bbox="617 298 1177 333">Assignments / Class Participation</td> <td data-bbox="1177 298 1404 333">10%</td> </tr> <tr> <td data-bbox="617 333 1177 369"></td> <td data-bbox="1177 333 1404 369">100%</td> </tr> </table>	Mid – Term Examination	40%	Final Examination	50%	Assignments / Class Participation	10%		100%
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Final Examination	50%								
Assignments / Class Participation	10%								
	100%								
Language of Instruction:	English								
Work Placement(s):	No								
Place of Teaching:	Regular Classroom European University Cyprus, Nicosia								