

COURSE LAYOUT

1. GENERAL

SCHOOL	APPLIED ECONOMIC AND SOCIAL SCIENCES		
DEPARTMENT	AGRICULTURAL ECONOMICS & RURAL DEVELOPMENT		
STUDY LEVEL	<i>Undergraduate</i>		
COURSE CODE	307	SEMESTER	2nd
COURSE TITLE	MATHEMATICS FOR ECONOMISTS II		
TEACHING STAFF	CHRYSOVALANTIS MALESIOS		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	ECTS
Lectures		5	5
COURSE TYPE	Background (mainly)		
PREREQUISITES:			
LANGUAGE	Greek		
IS THE COURSE OFFERED for ERASMUS STUDENTS?	Yes		
COURSE WEB PAGE	The course will be presented together with notes and other supporting material in the e class of GPA (http://openeclass.aua.gr/)		

2. LEARNING OUTCOMES

Learning Outcomes

The purpose of the course is to provide students with mathematical knowledge that has particular importance in economic analysis and agricultural economic analysis. Students will perform and learn applications of these methods both in formulating and investigating theory, and in solving specific economic problems faced by business or policy making. Students will understand the necessity of the previous mathematical knowledge they have acquired and which they will apply again, and they could judge and decide which are the specific mathematical methods taught in this course and appropriate for solving specific problems. They will practice their correct application, supported by exercises and examples.

Applications of these mathematical methods are expected to:

- improve the student's perception of theoretical and practical problems as well as their judgment for solving optimization problems with applications especially in agricultural economics.
- being able to communicate information, results and solutions based on the application of appropriate mathematical optimization methods (maximization / minimization problems) to both specialized and non-specialized audiences.
- In addition, to acquire the necessary basic knowledge in mathematical optimization that will undoubtedly be needed by those who decide to continue with postgraduate / doctoral studies and research.

General Competences

Students have developed those knowledge acquisition skills that they need to pursue further studies with a high degree of autonomy.

3. COURSE CONTENT

- Linear models and matrix algebra with applications on input-output problems and Markov chains.
- Structure of optimization problems, conditions for existence of solutions, total solution, unique solution, etc.
- Lagrange method and applications on the theory of demand and production.
- Differential and difference equations – applications in economics.
- The case of linear programming, Simplex algorithm, methods for maximization and minimization problems.

4. TEACHING and LEARNING METHODS - Evaluation

TEACHING METHOD	Lectures in the class and meetings with students
USE OF INFORMATICS and COMMUNICATION TECHNOLOGIES	<ul style="list-style-type: none">• Computer and interactive whiteboard will be used in teaching.• Learning process support through the electronic platform e-class.

	<ul style="list-style-type: none"> Communication with students will be done on a personal level, also using e-mail and direct telecommunication (e.g. skype). 	
TEACHING ORGANISATION	<i>Activity</i>	<i>Work Load</i>
	Lectures	65
	Independent study	27
	Homework	33
	<i>Course total (25 hours of student work load per ECTS)</i>	125
STUDENTS EVALUATION	Written final exams (100%)	

5. BIBLIOGRAPHY

Suggested bibliography:

- Κουτρομανίδης, Θ., Ζαφειρίου, Ε. και Μαλέσιος, Χ. (2016). Εφαρμοσμένα μαθηματικά στη γεωπονική επιστήμη. Εκδόσεις Τζιόλα, Θεσσαλονίκη.
- Chiang, A. and Wainwright, K. (2009). Μαθηματικές μέθοδοι οικονομικής ανάλυσης. Εκδόσεις Κριτική, Αθήνα.
- Μάνος Β. (2009). Μέθοδοι ποσοτικής ανάλυσης. Εκδόσεις Ζήτη, Θεσσαλονίκη.