



UNIVERSITY OF PIRAEUS

1) GENERAL

SCHOOL	ECONOMICS, BUSINESS AND INTERNATIONAL STUDIES		
ACADEMIC UNIT	ECONOMICS		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	ΔΕΜΑΘ33	SEMESTER	4
COURSE TITLE	OPERATIONAL RESEARCH		
INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS	CREDITS	
Lectures	4	5	
COURSE TYPE	SCIENTIFIC EXPERTISE		
PREREQUISITE COURSES	-		
LANGUAGE OF INSTRUCTION and EXAMINATIONS	GREEK		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES		
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/ODE175/		

2) LEARNING OUTCOMES

Learning Outcomes

Upon successful completion of the course, the students will be able to:

- Understand definitions and basic concepts related to the field of Operational Research.
- Identify and analyze different business problems.
- Choose and apply methodologies to solve decision problems.
- Analyze decision problems and construct mathematical models (problem modeling), taking into account the parameters, basic assumptions and limitations of the problem.
- Identify the steps to solve a decision problem by applying appropriate methodological approaches and algorithms.
- Analyze and interpret the results of data processing and the solution of a problem.
- Form and control alternative scenarios or solutions.
- Use software tools to process and resolve Business Research problems.

General Competences

- Search, analysis and synthesis of data and information using appropriate technologies,
- Decision-making
- Individual/Independent work
- Teamwork
- Development of free, creative and inductive thinking

3) SYLLABUS

The course describes and examines basic concepts and issues related to the field of Operational Research and to the use of quantitative methods in Management Decision Making.. The aim of the course is to analyze different operational research problems, to describe their methodologies and mathematical models and interpret their results to support decision-making in the field of business management..

- Decision Making Process,
- Linear Programming (Model Configuration - Simplex Method - PC Solutions - Applications),
- Sensitivity Analysis - Dual Theory,
- Transportation Problems,
- Network Modelling,
- Dynamic Programming
- Case Studies Analysis

4) TEACHING and LEARNING METHODS

DELIVERY	In-class lecturing
USE OF INFORMATION AND	<ul style="list-style-type: none">• Use of ICT in lectures and labs

COMMUNICATION TECHNOLOGY	<ul style="list-style-type: none"> • Use of ICT to inform or communicate with students 	
TEACHING METHODS	Activity	Semester workload
	Lectures	52
	Individual work /Teamwork	6
	Study	65
	Exams	2
	Total	125
STUDENT PERFORMANCE EVALUATION	Language of evaluation is Greek. The final grade of the course is formed by 100% of the written examinations, two-hour duration.	
ATTACHED BIBLIOGRAPHY	<p>Books:</p> <ul style="list-style-type: none"> • «Επιχειρησιακή Έρευνα για τη λήψη Διοικητικών Αποφάσεων» Γ. Οικονόμου – Α. Γεωργίου, Έκδοση Β', εκδ. Ε. Μπένου, Αθήνα 2016, (59383641) • «Επιχειρησιακή Έρευνα: Μέθοδοι & τεχνικές λήψης αποφάσεων», Π. Υψηλάντης, 5η έκδοση (ανανεωμένη), εκδ. Προπομπός, Αθήνα, 2015 (50659326) <p>Journals:</p> <ul style="list-style-type: none"> • European Journal of Operational Research • Journal of the Operational Research Society • Operational Research 	