UNIVERSITY OF PIRAEUS

FACULTY/SCHOOL	**School of Economics, Business and International Studies**
DEPARTMENT	**Department of Economics**
LEVEL OF STUDY	**Undergraduate**

COURSE UNIT CODE	**ΔΕΜΑΘ33**	**SEMESTER**	**4**

COURSE TITLE	**OPERATIONAL RESEARCH**

WEEKLY TEACHNG HOURS	**4**	**CREDITS (ECTS)**	**5**

COURSE TYPE	Scientific expertise
PREREQUISITE COURSES	

INSTRUCTION LANGUAGE	Greek	**ASSESSMENT LANGUAGE**	Greek

OPEN TO ERASMUS	Yes
LEARNING OUTCOMES	Within the course, basic concepts and issues related to the field of Operational Research are described and examined. The aim of the course is to analyze different operational problems, to describe their methodologies and mathematical models and to interpret their results. 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 for, analysis and synthesis of data and information by the use of appropriate technologies, • Individual/Independent work • Development of free, creative and inductive thinking • Decision-making
COURSE CONTENT	• Administrative Decision Making Process, • Linear Programming (Model Configuration - Simplex Method - PC Solutions - Applications), • Sensitivity Analysis - Dual Theory, • Transmission - Assignment, • Network Analysis, • Dynamic Programming • Case Studies Analysis
USE OF ICT IN TEACHING	Yes

COURSE DESIGN	Activity/Method	Semester workload
	Lectures	52
	Individual work	6
	Study	65
	Exam	2
	Total	125

COURSE ASSESSMENT	Language of evaluation is Greek and English (if it is requested). The final grade of the course is formed by 100% of the written examinations, two-hour duration.
SUGGESTED BIBLIOGRAPHY	Books: • ««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) Journals • European Journal of Operational Research • Journal of the Operational Research Society • Operational Research Journal