a) General			
School	ENGINEERING		
Academic unit	MECHANICAL ENGINEERING		
Level of studies	Undergraduate		
Course code	MM006Y05	*Semester*	6
Course title	**Techno-economic analysis**		

Independent teaching activities	*Weekly teaching hours*	*ECTS*
Lectures	3	6.5
Laboratory exercises	2	

Course type	Special background
Course category	Compulsory
Prerequisite courses	-
Language of instruction and examinations	Greek
Is the course offered to Erasmus students	Yes
Course website (url)	https://ops.mech.uniwa.gr/

b) Learning outcomes and general competences

b1. Learning outcomes

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

- Assess the feasibility and the profitability of enterprises and projects
- Familiarise with economic evaluation criteria, like Simple PayBack Period, Rate-on-Return, Net Present Value, Break Even Analysis
- Understand balance sheets and financial indicators
- Utilise the basic network design principles, CPM -PERT method
- Develop skills on organising, planning and controlling a wide variety of technical plans

b2. General competences

- Adapting to new situations
- Decision-making
- Working independently
- Team work
- Working in an interdisciplinary environment
- Project planning and management

c) Syllabus

The course emphasizes on the systematic, techno-economic evaluation of projects, aspiring to provide the students with a wide range of useful tools and methods both in the field of economic analysis and of Project Management as well. Therefore, in the engineering economics part of the course concepts like cash-flows, interests' rates as well as more evaluation criteria, like Simple PayBack Period, Rate-on-Return, Net Present Value, Break Even Analysis are studied. Furthermore, the basic points for an integrated engineering assessment, by reading and explaining balance sheets and Profit and Loss Accounts, also takes place. In the part of Project Management, the basic network design principles, CPM -PERT method are analysed and implemented in projects' case studies, providing the students with special skills on organising, planning and controlling a wide variety of technical plans.

d) Teaching and learning methods - Evaluation

Delivery	Face-to-face, Software Labs, Workshops

Use of information and communications technology	- Commercial/free/open source software - MS Teams/Moodle - Open courses	
Teaching methods	*Activity*	*Semester workload*
	Lectures	26
	Tutorials	13
	Laboratory exercises	26
	Computational exercises	13
	Individual work	26
	Course total	156
Student performance evaluation	Written examination, micro-projects elaboration, team-work assignment	

e) Suggested bibliography

1. Peters S. Max, Timmerhaus D. Klaus, West E. Roland, [Δημήτριος Μαρίνος - Κουρής, Μαγδαληνή Κροκίδα, Ζαχαρίας Μαρούλης] 2017, "DESIGN of CHEMICAL INDUSTRIES and PROCESSES [ΣΧΕΔΙΑΣΜΟΣ και ΟΙΚΟΝΟΜΙΚΗ ΜΕΛΕΤΗ ΕΓΚΑΤΑΣΤΑΣΕΩΝ για ΜΗΧΑΝΙΚΟΥΣ]", ISBN: 9789604188611, Ed. Tziola, Greece
2. Pepall L., Richards D., Norman G. 2016, "INDUSTRIAL ORGANIZATION [ΒΙΟΜΗΧΑΝΙΚΗ ΟΡΓΑΝΩΣΗ]", ISBN: 9789604185054, Ed. Tziola, Greece
3. Harvey Maylor, [Κώστας Καρανικολός, Παναγιώτης Σταυρόπουλος], 2005, "PROJECT MANAGEMENT [ΔΙΑΧΕΊΡΙΣΗ ΈΡΓΩΝ]", ISBN: 9602098538, Ed. Klidarithmos, Greece
4. Burke Rory, 1993, "PROJECT MANAGEMENT PLANNING and CONTROL", ISBN:9781118561256, Ed. J. Wiley
5. Lewis James, 2002, "FUNDAMENTALS on PROJECT MANAGEMENT", 2nd Edition, ISBN: 0814471323, Ed. AMACOM
6. Burton V. Dean, 1985 "PROJECT MANAGEMENT: METHODS and STUDIES". ISBN: 0444877428, Ed. Elsevier
7. Kerzner Harold, 1989, "PROJECT MANAGEMENT: a SYSTEMS APPROACH to PLANNING, SCHEDULING and CONTROL". Ed. Van Norstrand Reinhold, N. York