

a) General			
<i>School</i>	ENGINEERING		
<i>Academic unit</i>	MECHANICAL ENGINEERING		
<i>Level of studies</i>	Undergraduate		
<i>Course code</i>	MM908E03	<i>Semester</i>	8
<i>Course title</i>	Mechanical Facilities		
<i>Independent teaching activities</i>	<i>Weekly teaching hours</i>		<i>ECTS</i>
Lectures	4		4.0
Laboratory exercises			
<i>Course type</i>	Knowledge deepening/consolidation		
<i>Course category</i>	Compulsory Elective for Direction 1/2		
<i>Prerequisite courses</i>	-		
<i>Language of instruction and examinations</i>	Greek		
<i>Is the course offered to Erasmus students</i>	No		
<i>Course website (url)</i>	https://eclass.uniwa.gr/		
b) Learning outcomes and general competences			
b1. Learning outcomes			
<p>Upon successful completion of this course the student will be able to:</p> <ul style="list-style-type: none"> • Understands the basics and individual characteristics of Buildings mechanical installations. • Acquires the knowledge based on methods and techniques of the study and management of mechanical installations and systems that are used to ensure techno-economic results. • Distinguishes the main roles in a real case or a case study and assess the role of stakeholders in implementing the system. • Uses and apply the laws of thermodynamics, mechanics of fluids and heat transfer in order to identify key elements for an efficient system. • Evaluates comparing different systems applicable to mechanical installations. • Analyzes and calculates the basics and components of the plant. • Co-operates with fellow students to create and present a plan in a case study involving the design and study of Building mechanical installations. <p>The course is a specialty course in the subject of Mechanical facilities.</p>			
b2. General competences			
<ul style="list-style-type: none"> - Autonomous work - Decision making - Teamwork - Respect the natural environment 			
c) Syllabus			
<p>Plumbing installations for buildings (water - sewage).Facilities natural gas and gaseous fuels. Heating, refrigeration and air conditioning. Fire protection, material behavior, fire detection, fire extinguishing systems and devices, automatic extinguishing systems, fire protection in boilers, tanks and industrial buildings. Regulations and internal installations of buildings standards. Studies of internal mechanical facilities buildings using national technical directives and use of computer packages.</p>			
d) Teaching and learning methods - Evaluation			
Delivery	Face-to-face		

Use of information and communications technology	MS Teams and eclass.	
Teaching methods	<i>Activity</i>	<i>Semester workload</i>
	Lectures	26
	Tutorials	26
	Laboratory exercises	
	Computational exercises	
	Individual work	78
	Course total	130
Student performance evaluation	Final Written examination. Optional job preparation and presentation of up to 20%, less than the proportion of written examination.	
e) Suggested bibliography		
<ol style="list-style-type: none"> 1. Χαρόνης Παν. / Μηχανολογικές εγκαταστάσεις κτιρίων, τόμος Α' / έκδοση σύγχρονη εκδοτική / 2003 / ISBN 9608165-53. 2. Παπανίκας Δ. Γ., Τεχνολογία φυσικού αερίου, Εκδ. Vortex, 1997. 3. Μαχιά Απ./Ηλεκτρομηχανολογικές εγκαταστάσεις / έκδοση ιδίου / 1977. 4. Stein B.-Reynolds J. / Mechanical and electrical equipment for buildings / έκδοση J. Wiley / 1392 ISBN 0-471-52502-2. 5. Sage K. / Εγχειρίδιο εσωτερικών εγκαταστάσεων, τόμος 182 / έκδοση Γκιούρδας / 1971. 6. Schulz K. / οικιακές εγκαταστάσεις υγιεινής / έκδοση Παπασωτηρίου. 7. Βιάζης Γ. Α., Πυροπροστασία - νομοθεσία, μελέτες, Εκδ. Παπασωτηρίου, 1998. 8. Λέφας Κ. Χ., Εισαγωγή στην τεχνολογία του φυσικού αερίου, Εκδ. Φοίβος, 1991. 9. Σελλούντος Β., Πυρασφάλεια: Εφαρμοσμένη πυροπροστασία και στοιχεία πυρόσβεσης, Εκδ. Φοίβος, 1995. 10. Τρουλλινάκης Ν., Τριβέλλας Σ., Θερμοϋδραυλικές Εγκαταστάσεις, Εκδ. Ίων, 1999. 11. Handbook of Solid Waste Management, McGraw Hill, 2001. 12. Brickle S., Θερμοϋδραυλικές Εγκαταστάσεις, Ευρωπαϊκές Τεχνολογικές Εκδ., 1999. 13. Bruenner H., Ο εγκαταστάτης δικτύων αερίων καυσίμων & νερού, Τεχνοεκδοτική, 1997. 14. Eckenfelder HC, 2000, Industrial Water Pollution Control, McGraw Hill, 2000. 		