

a) General			
<i>School</i>	ENGINEERING		
<i>Academic unit</i>	MECHANICAL ENGINEERING		
<i>Level of studies</i>	Undergraduate		
<i>Course code</i>	MM01Y06	<i>Semester</i>	1
<i>Course title</i>	<b>Chemistry</b>		
<i>Independent teaching activities</i>		<i>Weekly teaching hours</i>	<i>ECTS</i>
Lectures		2	4.0
Laboratory exercises		2	
<i>Course type</i>	General background		
<i>Course category</i>	Compulsory		
<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>	<a href="http://moodle.puas.gr">http://moodle.puas.gr</a>		
b) Learning outcomes and general competences			
b1. Learning outcomes			
Upon successful completion of this course, the student will be able to:			
<ul style="list-style-type: none"> <li>- distinguish the basic chemical reactions of mechanical interest and performs the relevant calculations.</li> <li>- perform basic physicochemical measurements.</li> <li>- identify the basic physical and chemical processes as well as the production technologies related to its specialty.</li> <li>- apply the appropriate materials and production methods</li> </ul>			
b2. General competences			
<ul style="list-style-type: none"> <li>- Search for, analysis and synthesis of data and information with the use of the necessary technology</li> <li>- Working independently</li> <li>- Team work</li> <li>- Respect for the natural environment</li> <li>- Production of free, creative and inductive thinking</li> </ul>			
c) Syllabus			
Solutions, Chemical reactions, Combustion reactions, incomplete, complete, with excess air, Exhaust gases, Chemical reaction velocity, Chemical equilibrium, pH, Water chemistry, Physicochemical measurements, Mass and energy balances, Process flow diagrams, Reverse osmosis desalination, Electrolysis, Plating, Corrosion and protection of materials, Production technologies related to the specialty of Mechanical Engineering and laboratory exercises.			
d) Teaching and learning methods - Evaluation			
Delivery	Face-to-face		
Use of information and communications technology	- Moodle/eclass		
Teaching methods	<i>Activity</i>	<i>Semester workload</i>	
	Lectures	20	

	Tutorials	6
	Laboratory exercises	26
	Computational exercises	
	Individual work	78
	Course total	130
Student performance evaluation	Written final exam (100%), which includes short answer questions (40%) and problem solving (60%) For the laboratory part of the course, individual work per exercise and a written final exam.	
e) Suggested bibliography		
<ol style="list-style-type: none"> <li>1. Φουντουκίδης Ε. (2015). Εργαστηριακές Ασκήσεις Χημικής και Περιβαλλοντικής Τεχνολογίας. Εκδόσεις Πουκαμισά.</li> <li>2. Σδούκου Α., Πομωνή Φ. (2010). <i>Ανόργανη Χημική Τεχνολογία</i>. Εκδόσεις Τζιόλα.</li> <li>3. Παπαστεφάνου Σ., Λάλια Μ., (2012). <i>Γενική και Ανόργανη Χημεία</i>. Εκδόσεις Ζήτη.</li> <li>4. Ζουμπούλης Δ., Ζουμπούλης Α., Μάτης Κ., Μαύρος Π. (2009). <i>Εισαγωγή στη Χημική Τεχνολογία</i>. Εκδόσεις Τζιόλα.</li> <li>5. Καραγιαννίδης Π. (2008). <i>Ανόργανη Χημεία</i>. Εκδόσεις Ζήτη.</li> </ol>		