ECTS

(B) Course information in english

General course information:

Course title:	Chemistry for Engineers	**Course code:**	ΓΚ0105
Credits:	5	**Work load (hours):**	122
Course level:	Undergraduate ☐☐	Graduate ☐☐	
Course type:	Mandatory ☐☐	Selective ☐☐	
Course category:	Basic ☐☐	Orientation ☐☐	
Semester:	1st	**Hours per week:**	4

Course objectives (capabilities pursued and learning results):

Upon completion of the course, the student acquires knowledge on:

- Basic chemistry principles, the periodic table, the chemical elements, chemical reactions and chemical kinetics, as well as the chemistry of various materials;
- Metal corrosion;
- Aquatic solution chemistry;
- Photochemical atmospheric pollution;
- Chemical interactions on environmental problems.

Prerequisites:

None.

Instructor's data:

Name:	Dr. Chrysi Laspidou
Level:	Professor
Office:	Civil Engineering Faculty University of Thessaly Pedion Areos, 38334 Volos, Greece
Tel. – email:	2421074147 / laspidou@uth.gr
Other tutors:	-

Specific course information:

Week No.	Course contents	Hours	
		Course attendance	Preparation
1	Atomic structure (electrons, nucleus)	4	4
2	Elements of inorganic and organic chemistry	4	4
3	Chemical reaction	4	4
4	Types of Concentrations	4	4
5	Properties of Water	4	4
6	Aquatic solution chemistry	4	4
7	Atmospheric Chemistry	4	4
8	Photochemical atmospheric pollution and climate change	4	4
9	Environmental Chemistry I	4	4
10	Environmental Chemistry II	4	4
11	Geochemical Cycles I	4	4
12	Geochemical Cycles II	4	4
13	Metals and metal corrosion II	4	4

Additional hours for:			
Class project	**Examinations**	**Preparation for examinations**	**Educational visit**
		18	

Suggested literature:

- Εισαγωγή στην Περιβαλλοντική Μηχανική, Α.Γ. Κούγκολος, Εκδόσεις Τζιόλα.
- Οικολογία: Οικοσυστήματα και Προστασία του Περιβάλλοντος, Κ. Χατζημπίρος, Εκδόσεις Συμμετρία.
- Εισαγωγή στις Διεργασίες Καθαρισμού, Νερού και Λυμάτων, Κ. Χρυσικόπουλος, Εκδόσεις Τζιόλα
- Βασικές Αρχές Ανόργανης Χημείας, Γ. Πνευματικάκης, Χ. Μητσοπούλου και Κ. Μεθενίτης, Εκδόσεις Αθ. Σταμούλης

Teaching method *(select and describe if necessary -* **weight***):*		
Teaching	☒	80%
Seminars	☐	.....%
Demonstrations	☐	.....%
Laboratory	☐	.....%
Exercises	☒	20%
Visits at facilities	☐	.....%
Other *(describe):* ……	☐	.....%
Total		100%

Evaluation method *(select)-* **weight:**				
	written	*%*	*Oral*	*%*
Homework	☐		☐	
Class project	☐		☐	
Interim examination	☐		☐	
Final examinations	☒	100%	☐	
Other *(describe):* ……	☐		☐	