Syllabus

Environmental Engineering

1. Subject:

Environmental Concepts in Civil Engineering

Degree

Degree in Civil Engineering

Code

7379

2. Unit/Module:

Unit: Unit I Module: UBU Specific

3. Department:

Chemistry

4.a Professor :

Mª Nieves González Delgado

4.b Coordinator :

Mª Nieves González Delgado

5. Course and semester in which the subject is taught:

2nd Course, 4th Semester

6. Course Type : (introductory, mandatory or elective)

Elective

7. Number of ECTS credits for course:

3

8. Competences that the student must acquire when taking the subject:

Basic and General Competences: CB1; CB2; CB3; CB4; CB5 Transversal Competences: I.01; I.03; I.06; I.07; P.01; P.06 S.01; S.08 A.03; A.04; A.06

9. Course Overview:

9.1- Objectives
1. Acquire basic knowledge about the main problems of contamination of the hydrosphere, lithosphere and atmosphere. 2. Interrelate the pollution phenomena in the different media. 3. Learn the main methods of correction and treatment of pollution in its different areas: water, air and soil. 4. Solve theoretical-practical questions. 5. Learn to carry out simple laboratory practices and their relationship with the knowledge acquired in the classroom.
9.2- Teaching units
Environmental Concepts in Civil Engineering **1.** The ecological balance **2.** Water **3.** Composition, contamination and indicator parameters. Water treatment. Quality criteria **4.** The atmosphere **5.** Regions and composition. Air pollution. Control of atmospheric contamination. Quality criteria **6.** Soil and waste **7.** Soil contamination. Characteristics and management of different types of waste

9.3- Bibliography
Bibliography
Colin Baird, (2001) Environmental Chemistry, Reverté S.A, 84-291-7902-X, Manahan, S., (2007) Introduction to Environmental Chemistry, Reverté, UNAM, 84-291-7907-0, Nemerov, N.L. and Dasgupta, A., (1998) Treatments of hazardous industrial spills, Díaz de Santos, Madrid, Orozco, C., González, M.N., Alfayate, J.M., Pérez A., Rodríguez F.J. , (2002) Environmental Pollution: Issues and Resolved Problems, Thomson-Paraninfo, Madrid, Orozco, C., Pérez, A., González, M.N., Rodríguez, F. J., Alfayate J.M. , (2011) Environmental Pollution: A view from Chemistry, Paraninfo, Madrid,
FURTHER READING
Mulder, Karel, (2007) Sustainable development for engineers, EDICIONS UPC, Barcelona, UNEP, World Environment Outlook, GEO-2, GEO-3, GEO-4 and GEO-5, Mundi-Prensa, http: // www .pnuma.org / educamb /. Tyler Miller Jr. G., (2002) Introduction to Environmental Science, sustainable development of the Earth, Thomson-Paraninfo, Madrid,

10. Teaching and learning methodology and its relationship with the skills that the student must acquire::

Methodology	Related competency	Contact hours	Out-of-class hours	Total
Theoretical	CB1, CB2, CB3, CB4, CB5, I01, I06, P06, S01, S08, A03, A06	10	18	28
Practical	CB1, CB2, CB3, CB4, CB5, I01 I06, I07, P01, P06, S01, S08, A03, A06	12	22	34
Seminars, Debates, Tutorials, Completion of work, Reports	CB1, CB2, CB3, CB4, CB5, I01, I03, I06, I07, P01, P06, S01, S08, A06	2	8	10
Evaluations	CB1, CB2, CB3,	3	0	3

	CB4, CB5, I01, I03, I06, I07, P01, P06, S01, S08, A06			
Total		27	48	75

11. Grading System:

To pass the course it will be necessary to obtain a minimum of 4 points out of 10 in each of the indicated procedures and the final average must be equal to or greater than 5 points out of 10.
Second call:
The continuous evaluation of the activities is not recoverable in the second call, keeping the grade obtained in the first.

Assessment	First call evaluation	Second call evaluation
Continuous evaluation of face-to-face activities	35 %	35 %
Practical	15 %	15 %
Final theory test	25 %	25 %
Final test	25 %	25 %
Total	**100 %**	**100 %**

Exceptional evaluation:

For students who opt for exceptional evaluation, the procedure for both 1st and 2nd Call will be:
Final written theory test: 30%
Final written test of practical exercises: 30%
Laboratory test: 20%
Individual work: 20%
To pass the course it will be necessary to score a minimum of 4 out of 10 in each of the tests and the final average must be equal to or greater than 5 out of 10.

12. Learning resources and tutorial support:

Whiteboard and projectors
Laboratory
Related web pages
Bibliography available in the Library and in the Interactive Applications Department on the UBUvirtual Platform

Individualized or group tutorials at the request of the students

13. Calendars and schedules:

According to the official calendar approved by the School Board and schedule established by the Center's Management

14. Language of instruction:

Spanish