

**COURSE DATA****Data Subject**

Code	44718
Name	Assessment of environmental quality
Cycle	Master's degree
ECTS Credits	4.5
Academic year	2019 - 2020

Study (s)

Degree	Center	Acad. year	Period
2227 - M.U. en Ingeniería Ambiental	School of Engineering	1	First term

Subject-matter

Degree	Subject-matter	Character
2227 - M.U. en Ingeniería Ambiental	1 - Fundamentals of environmental engineering	Obligatory

Coordination

Name	Department
SECO TORRECILLAS, AURORA	245 - Chemical Engineering

SUMMARY

Professor UPV: María Pachés Giner

The Assessment of environmental quality is taught in the first semester of the Environment Engineering Master with 4.5 compulsory credits.

To achieve the objectives proposed students undertake theoretical lessons to develop their knowledge about the impacts of environmental pollution in water, air and soils and the monitoring environmental systems.

Laboratory studies are also programmed to provide practical experience in measures of water, air and soil pollution.

The success of the subject enables the students to establish the criteria for the assessment of environmental impacts on water, air and soil and management.



PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

No previous knowledge needed

OUTCOMES

2227 - M.U. en Ingeniería Ambiental

- Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.
- Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.
- Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.
- Students should demonstrate self-directed learning skills for continued academic growth.
- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Identify and apply technologies, tools and techniques in the field of environmental engineering.
- Assume with responsibility and ethics the Environmental Engineer role in a professional context.
- Adapt to changes, being able to apply the principles of Environmental Engineering to unknown cases and use new and advanced technologies and other relevant developments, with initiative and entrepreneurial spirit.
- Identify, declare and entirely analyze environmental problems.
- Evaluate the environmental quality of air, water and soil from a global point of view, especially when there is a risk to public health.
- Apply standard methodologies for the analysis and evaluation of environmental risks.
- Apply different tools and environmental management systems.
- Evaluate the environmental quality of water from a global point of view, especially when there is a risk to public health.
- Evaluate the environmental quality of soils from a global point of view, especially when there is a risk to public health..



- Be able to characterize the emissions to air, coming from the anthropogenic activity.
- Be able to characterize the emissions to water, coming from the anthropogenic activity.
- Be able to characterize the emissions to soils, coming from the anthropogenic activity.

LEARNING OUTCOMES

- 1 Know the origins of environmental pollution in water, air and soil.
- 2 Know the effects of pollution in water, air and soil.
- 3 Establish the criteria for the evaluation of water, air and soil quality.
- 4 Know the procedures and techniques for measuring environmental contaminants.
- 5 Be able to manage and interpret specifications, regulations and environmental quality standards.
- 6 Know the operation of the environmental monitoring systems and be able to interpret the information obtained.
- 7 Acquire experience at the laboratory level for the measurement of pollutants in water, air and soil.

DESCRIPTION OF CONTENTS

1. Introduction

2. Water

1. Sources and effects of water pollution
2. Measurement of water pollution
3. Environmental quality standards and water monitoring network

3. Soil

1. Sources and effects of soil pollution
2. Measurement of soil pollution
3. Environmental quality standards and soil monitoring network

4. Air

1. Sources and effects of air pollution
2. Measurement of air pollution
3. Environmental quality standards and air monitoring network

**5. Laboratory practices**

1. Basic techniques in an Environmental testing laboratory
2. Water sample characterization (I)
3. Water sample characterization (I)
4. Soil sample characterization
5. Analysis of air data and quality criteria

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	28,00	100
Laboratory practices	14,00	100
Theoretical and practical classes	3,00	100
Study and independent work	30,00	0
Readings supplementary material	5,50	0
Preparing lectures	15,00	0
Preparation of practical classes and problem	17,00	0
TOTAL	112,50	

TEACHING METHODOLOGY

The training activities will include:

Theoretical activities:

In the theoretical lessons the topics will be taught providing a global vision of the contemporary problems encouraging student participation

Practical activities:

Description: these activities complement the theoretical lessons with the aim of applying the concepts and develop them with the knowledge and experience that they acquire during the practical works. They include the following types:

- Environmental problem sessions
- Environmental Software-specific management practices
- Oral presentation

Individual and group tutorship Personal student work: performed out of classroom timetable based on bibliographic research, monographic works, problem resolution, etc. This task will be carried out individually and enhance the autonomous work of students. Small groups work: in 2 to 4 student's small groups, problems, technical questions are solved. These tasks boost the individual work, and encourage the students' integration. Assessment: performed an individual evaluation questionnaire in the classroom.



The e-learning platform (Virtual Classroom of the Universitat de València and / or PoliformaT of the Polytechnic University of Valencia) will be used as a communication support with the students. Through it students will have access to the subject material used in both theoretical and practical sessions.

EVALUATION

The rating will be obtained from four sections that must be overcome:

Section 1: Written test of open response covering theoretical lessons (60%). It is necessary 4.5 out of 10 to pass the subject.

Section 2: Written test of open response covering lab sessions (10%). It is necessary 4.5 out of 10 to pass the subject.

Section 3: Academic work (20%)

Section 4: Continuous assessment based on the observation, participation and implication grade in the learning process (10%).

Laboratory sessions are compulsory.

Not presenting any of the sessions will result in failing the course.

Attendance requirements: 40% maximum absence in Classroom Theory.

REFERENCES

Basic

- Manual de prácticas de laboratorio : evaluación de la calidad ambiental (Pachés Giner, María Aguas Vivas - Martínez Guijarro, María Remedios - Aguado García, Daniel)
- Kiely, Gerard. Ingeniería ambiental : fundamentos, entornos, tecnologías y sistemas de gestión.
- Standard methods for the examination of water and wastewater - 1995
- Mirsal, Ibrahim A. Soil pollution : origin, monitoring and remediation.
- Wark, Kenneth. Contaminación del aire : origen y control.

ADDENDUM COVID-19



This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

English version is not available

