



Universitat de Lleida

DEGREE CURRICULUM
**ENVIRONMENTAL
MANAGEMENT OF ENERGY
FACILITIES**

Coordination: CHEMISANA VILLEGAS, DANIEL

Academic year 2023-24

ENVIRONMENTAL MANAGEMENT OF ENERGY FACILITIES 2023-24

Subject's general information

Subject name	ENVIRONMENTAL MANAGEMENT OF ENERGY FACILITIES			
Code	102143			
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Character	Modality
	Bachelor's Degree in Energy and Sustainability Engineering	3	COMPULSORY	Attendance-based
	Double bachelor's degree: Degree in Mechanical Engineering and Degree in Energy and Sustainability Engineering	4	COMPULSORY	Attendance-based
Course number of credits (ECTS)	6			
Type of activity, credits, and groups	Activity type	PRAULA		TEORIA
	Number of credits	3		3
	Number of groups	1		1
Coordination	CHEMISANA VILLEGAS, DANIEL			
Department	ENVIRONMENT AND SOIL SCIENCES AND CHEMISTRY			
Important information on data processing	Consult this link for more information.			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
CHEMISANA VILLEGAS, DANIEL	daniel.chemisana@udl.cat	0	
LAMNATOU , CHRYSOVALANTOU	chrys.lamnatou@udl.cat	4,2	
MORENO BELLOSTES, ALEXANDRE	alex.moreno@udl.cat	3	

Learning objectives

- Identify the most important features of the legislation that legislates the evaluation of environmental impact, in the European, state and autonomous areas.
- Describe the procedure and structure of environmental impact assessment studies
- Know the general concepts and analyze the general procedure of an environmental audit based on specific cases.
- Understand electrical and thermal transport and distribution systems and be able to improve their efficiency.
- Know how to identify the different types of energy receptors and use them efficiently.
- Know the current techniques to improve the efficiency of electrical and thermal systems and be able to design and select the most appropriate process.
- Know how to calculate the decrease in environmental impacts as a consequence of the decrease in electrical and thermal consumption.

Competences

Basic

CB2. That students know how to apply their knowledge to their work or vocation in a professional way and possess the skills that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study.

CB3. That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant issues of a social, scientific or ethical nature.

General

CG16. To have basic knowledge and application of environmental technologies and sustainability.

Specific

CE12. To have applied knowledge about renewable energies.

CE15. To acquire the ability to understand, interpret and apply the legislation on energy and environment.

CE16. Acquire capacity to assess the impacts of energy resources through knowledge of the natural environment and conduct energy and environmental audits

Cross-disciplinary

CT2. Master a foreign language, especially English.

Subject contents

Topic 0. Introduction to environmental management

Topic 1. Life cycle assessment

Topic 2. ISO 14001

Fundamental concepts of environmental management systems

Objectives and requirements of the UNE-EN ISO 14001:2015

Apply and plan environmental management according to the UNE-EN ISO 14001:2015

Introduction to the processing and analysis of environmental data in Python

Topic 3. ISO 50001

Fundamental concepts of energy management systems

Objectives and requirements of the UNE-EN ISO 50001: 2015

Apply and plan energy management according to UNE-EN ISO 50001: 2015 Standard

Introduction to the processing and analysis of energy data in Python

Methodology

The development of the subject is based on four actions:

1) Master classes

Exposure of the concepts , principles and relations of each topic

Approach examples illustrating the application

2) Problem resolution classes

Discussion and resolution of problems and applications related to the concepts of each topic

The proposed problems are basically those of the subject collection of problems

3) Lab

Practical demonstration of the concepts reached

4) Work

Group work and oral presentation

Development plan

ENVIRONMENTAL MANAGEMENT OF ENERGY FACILITIES 2023-24

Week	Methodology	Topic	Lecture hours	Autonomous work hours
1	Master class	Introduction Life cycle analysis (LCA)	4	6
2	Master class Problems	Life cycle analysis (LCA)	4	6
3	Master class Problems	Life cycle analysis (LCA)	4	6
4	Master class Problems	Life cycle analysis (LCA)	4	6
5	Master class Problems	Life cycle analysis (LCA)	4	6
6	Master class Problems	Introduction to environmental management systems	4	6
7	Master class Problems	Environmental audits	4	6
8	Master class Problems	ISO 14001	4	6
9		Evaluation. Written exam, Life cycle analysis (LCA)		
10	Master class Problems Practice	Implementation ISO 14001	4	6
11	Master class Problems	Model and energy context	4	6
12	Master class Problems	Energy management systems	4	6
13	Master class Problems	ISO 50001	4	6
14	Group work	Energy Auditor (Functions and responsibilities)	4	6
15	Group work	ISO 50001 implementation	4	6
16		Evaluation. Written exam, ISO 14001 , ISO 50001		
17				
18		Tutoring period		
19		Recovery exams		

Evaluation

Exams:

1st part (30%), it will take place in the regular dates.

2nd part (35%), will take place in the regular dates.

Recovery (65%), will take place in the regular dates.

Laboratory (15%), Experiments complementary to the topics.

Group work (20%). It will be held in groups of up to 4 people and will be delivered / expose at the end of the course.

Bibliography

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HERNANDEZ, A. "Depuración de aguas residuales". CICCIP.Madrid.1994.

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RECUERO,M. "Ingeniería Acústica". UPM.1991.ISBN:84-404-8493-3.

"Legislación Ambiental de Catalunya". Vol.: 3. Generalitat deCatalunya. Departament de Medi Ambient.

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