



Universitat de Lleida

DEGREE CURRICULUM  
**ENVIRONMENTAL  
MANAGEMENT**

Coordination: CHEMISANA VILLEGAS, DANIEL

Academic year 2019-20

## Subject's general information

<b>Subject name</b>	ENVIRONMENTAL MANAGEMENT			
<b>Code</b>	103113			
<b>Semester</b>	2nd Q(SEMESTER) CONTINUED EVALUATION			
<b>Typology</b>	<b>Degree</b>	<b>Course</b>	<b>Character</b>	<b>Modality</b>
	Master's Degree in Leather Engineering	1	COMPULSORY	Attendance-based
<b>Course number of credits (ECTS)</b>	3			
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRAULA		TEORIA
	<b>Number of credits</b>	0.5		2.5
	<b>Number of groups</b>	1		1
<b>Coordination</b>	CHEMISANA VILLEGAS, DANIEL			
<b>Department</b>	ENVIRONMENT AND SOIL SCIENCES			
<b>Teaching load distribution between lectures and independent student work</b>	Classroom lessons 36 hours Autonomous work 41 hours			
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.			
<b>Language</b>	Catalan Spanish English			
<b>Distribution of credits</b>	Theory credits: 2,5 ECTS Praula credits: 0,5 ECTS			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
CHEMISANA VILLEGAS, DANIEL	daniel.chemisana@udl.cat	3	

## Learning objectives

At the end of the course, the student must be able to:

- Recognize the environmental impact of each of the operations in the beamhouse and tanning phases, the nature of the waste generated in the process and its basic management.
- Know the problem of the use of water in the tanning industry and plan its management.
- Identify the general pollution parameters, the most common limits of discharge and their influence on the environment.
- Analyse the pollutant loads of the different tannery processes and plan the reduction methods.
- Know and manage wastewater treatment methods.
- Interpret the legal aspects, in anticipation of procedures and business obligations.
- Know the regulations and basic environmental legislation regarding industrial waste, especially those of the tanning sector, both at the level of solid waste, residual effluents, and emissions to the pollutant atmosphere.

## Competences

### Basic

B06 To possess and understand knowledge that provides a basis or opportunity to be original in the development and / or application of ideas, often in a research context.

B10 That students have the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous.

### General

CG3. To investigate, develop and innovate.

CG4. To direct, plan and supervise multidisciplinary teams.

### Specific

CE1. To analyze the different raw materials, intermediate and final products in the leather manufacturing process.

CE3. To apply basic knowledge and applications of environmental technologies and sustainability in the field of leather engineering.

CE10. To design strategic planning and apply it to production systems, quality and environmental management in the field of leather engineering.

## Subject contents

- Water management in the industry.
- Parameters and legislation.
- Polluting loads of different processes

- Decrease of loads for modification of processes and specific treatments.
- Sewage treatment:
  - Pretreatments
  - Homogenization and primary treatments
  - Secondary treatments

## Methodology

- Theory in classes of large groups: Expositive classes by the teacher, with the explanation of concepts, materials and the work plan.
- For each module, exercises will be proposed individually and autonomously, which will be evaluated by the teacher.
- Preparation of a topic, with presentation and oral and written communication.
- Visits to sewage treatment plant

Students also have the responsibility to reinforce their knowledge independently, based on the didactic material facilitated and / or recommended by the teacher.

## Development plan

Week	Methodology	Temary	On-site hours	Hours of autonomous work
1-8	Master class / exercises	Lessons 1 a 3	16	22
9	Written test (E1))	Lessons 1 a 3	2	
10-15	Master class / exercises	Lessons 4-5	14	21
10-15	Visits to sewage treatment plant		2	
16	Written test (E2)	Lessons 4-5	2	

## Evaluation

In the middle of the semester there will be an eliminatory partial test (E1) that corresponds to the matter taught during this first part. At the end of the semester there will be another test (E2) also eliminatory with the rest of the contents. In addition there will be a note of exercises (P), and a note of assessment of the teacher (A).

The final grade will be:

$$FG = 0.65 ((E1 + E2) / 2) + 0.30 P + 0.05A$$

In order to be able to apply, a minimum of 3 is needed in the eliminatory partial exams.

Those who have not passed the subject at the first opportunity may take a final recovery exam (ER) that will include the exams not passed. The final grade of the subject will be calculated using the same formula,

Tests E1, E2, and ER will be carried out on the dates set by the Studies Departement

## Bibliography

- Teacher notes

- Adzet, J.M. (coord.). *Tecnología del Cuero*. Barcelona: Cíceros, 1985
- Salmerón, J. *Generación y tratamiento de residuos en la industria del curtido de Valencia*. Valencia: CEV, 1995
- Metcalf & Eddy. *Ingeniería sanitaria : tratamiento, evacuación y reutilización de aguas residuales*. 3a ed. Barcelona: Labor, 1994. ISBN 84-335-6421