



DEGREE CURRICULUM
**INNOVATIVE TECHNIQUES
APPLIED IN LEATHER
COMPANIES**

Coordination: COMBALIA CENDRA, FELIP

Academic year 2022-23

Subject's general information

Subject name	INNOVATIVE TECHNIQUES APPLIED IN LEATHER COMPANIES			
Code	103161			
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Character	Modality
	Master's Degree in Leather Engineering	1	OPTIONAL	Attendance-based
Course number of credits (ECTS)	4.5			
Type of activity, credits, and groups	Activity type	PRAULA		
	Number of credits	4.5		
	Number of groups	1		
Coordination	COMBALIA CENDRA, FELIP			
Department	COMPUTER SCIENCE AND INDUSTRIAL ENGINEERING			
Teaching load distribution between lectures and independent student work	This course is taught in Dual training modality so that the formation of the student is developed entirely in the company.			
Important information on data processing	Consult this link for more information.			
Language	Catalan Spanish English			
Distribution of credits	Pracula credits: 4,5 ECTS			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
COMBALIA CENDRA, FELIP	felip.combalia@udl.cat	2	

Subject's extra information

The Dual training program allows the skills development in an entirely professional environment through the participation in real projects and work teams within a company. To follow this course is not required any specific knowledge, but a pro-active attitude, positive and adaptation to new situations and new teams.

It is **COMPULSORY** that the students bring the following elements of individual protection (EPI) to the practices at the laboratory.

- Laboratory gown from UdL
- Protection glasses
- Mechanical protection gloves

They can be purchased through the shop Údels of the UdL:

C/ Jaume II, 67 baixos
Centre the Cultures i Cooperació Transfronterera

<http://www.publicacions.udl.cat/>

There will be a specific service for the *Campus Universitari d'Igualada*.

The use of other elements of protection (for example caps, masks, gloves of chemical or electrical risk, etc.) will depend on the type of practice to be done. In that case, the teacher will inform of the necessity of specific EPI.

Not bringing the EPI's described or not fulfilling the norms of general security that are detailed below imply that the student can not access to the laboratories or have to go out of them. The no realisation of the practices for this reason imply the **consequences in the evaluation** of the subject that are described in this course guide.

GENERAL NORMS OF SECURITY IN LABORATORY PRACTICES

- Keep the place of realisation of the practices clean and tidy. The table of work has to be free from backpacks, folders, coats...
- No short trousers or short skirts are allowed in the laboratory.
- Closed and covered footwear is compulsory in the laboratory.
- Long hair needs to be tied.
- Keep the laboratoy gown laced in order to be protected from spills of chemicals.
- Bangles, pendants or wide sleeves are not allowed as they can be trapped.
- Avoid the use of contact lenses, since the effect of the chemical products is much bigger if they enter between the contact lense and the cornea. Protection over-glasses can be purchased.
- No food or drink is allowed in the laboratory.
- It is forbidden to smoke in the laboratories.
- Wash your hands whenever you have contact with a chemical product and before going out of the laboratory.
- Follow the instructions of the teacher and of the laboratory technicians and ask for any doubt on security.

For further information, you can check the following document of the *Servei de Prevenció de Riscos Laborals de la UdL*: <http://www.sprl.udl.cat/alumnes/index.html>

Learning objectives

1. Understand and apply the innovative techniques.
2. Apply the main systems to process special leathers. Design production systems for the production of special leathers. Apply the best available techniques to the process.
3. Understand and apply the processes of tanning , retanning , dying and fatliquoring on those leathers.
4. Understand the chemical fundamentals for special techniques.
5. Design advanced formulations in this area.
6. Acquire the criteria to analyze formulations of the processes related with special techniques.
7. Recognise the last techniques in this field of study.
8. Acquire the capacity of self study in this field of study.

Competences

Basic

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

B08. That students are able to integrate knowledge and face the complexity of formulating judgments based on information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments.

B09. That students know how to communicate their conclusions –and the knowledge and ultimate reasons that support them– to specialized and non-specialized audiences in a clear and unambiguous way.

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

Generics

CG1. Appropriately apply mathematical, analytical, scientific, instrumental, technological and management aspects.

CG2. Technically and economically manage projects, facilities, plants, companies and technology centers.

CG3. Research, develop and innovate.

Transvers

CT1. Communicate clearly and precisely orally and in writing in Catalan and Spanish and in a third language, especially English.

CT2. Efficiently use digital technologies in their professional field.

CT3. Propose innovative, creative and entrepreneurial solutions in situations typical of the professional field.

CT4. Evaluate the sustainability and social impact of the proposed proposals and act with ethical, environmental and professional responsibility. specific

Specifics

CE2. Analyze, apply and project the main unit operations and the systems that make up the leather manufacturing

process.

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

CE4. Apply theories and principles of leather engineering in order to analyze complex situations and make decisions using engineering resources.

CE6. Broadly identify the main markets of origin and supply of raw leather and the main destinations of finished leather.

CE7. Apply the different evaluation, innovation and communication tools based on the life cycle (ACV).

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

CE12. Recognize the different types of companies, understanding their institutional and legal framework, and identifying the essential aspects for the organization and management of companies.

CE13. Integrate solutions and business processes to meet the information needs of organizations, allowing them to achieve their objectives effectively and efficiently, thus giving them competitive advantages.

Subject contents

The contents of this subject are defined within the context of the company by the company tutor (CT) and validated by the university tutor (UT), as part of the dual training in which they are involved. The CT (see the methodology section to understand the role of each person involved in the training) defines the tasks within the company that the student (ST) will carry out.

These tasks in turn will define the contents that will be treated by the student and must be adjusted to the competencies and objectives to be developed in the subject.

Methodology

The Higher Polytechnic School defines a methodological framework to monitor and evaluate the dual training process. This methodological framework is generic to all the subjects that are carried out within the company in dual training. The tutoring of each student is ensured by two figures who are essential in the success of the methodology: the company tutor (CT) and the university (UT).

The company tutor (CT) is responsible for the practical training of the student. His /Her function consists of welcoming and ensuring a correct integration of the student in the company, contributing to the acquisition of professional skills, monitoring, and evaluating the following: skills, know-how and knowing how to be in a professional environment.

The university tutor (UT) accompanies the student in his/her professional development and gives his/her support in case of difficulty. This role is especially important in the accompaniment and guidance in pedagogical matters. The UT ensures the monitoring process in the company and the relationship the student maintains with the professional environment. In addition, the UT works closely with the CT who is associated with the student's professional development.

Training process

When a student begins the master's degree and decides to do it in dual training, the first step is to explain the methodology to him/her and, therefore, to show the operation mode of the modality in which they will be involved.

This will allow the student to know before the beginning of their training program, how they will work in term of skills

objectives. The dual training subjects within the "Enterprise Integrated Projects" specialty are divided over the three semesters of the master's degree.

The competencies and objectives are carried out through the completeness of tasks defined in the company. In this sense, at the beginning of each semester, through a meeting between the tutors and the student, the tasks, and competencies to be developed are defined. The (CT) will be responsible for making the formal proposal to be reviewed and analyzed by the corresponding TU.

At the end of the meeting, the tasks will be defined and associated with the competencies to be developed. At the end of each semester, a meeting will be held in which the work carried out by the student will be analyzed focused on the tasks defined at the initial meeting of the semester.

This analysis is based on the tracking carried out by the CT in the daily work of the student, as well as the documentation collected by the student in the Memory of Activities. In the activity report, the student describes in detail the tasks performed, the competencies that have been discussed and, the technologies that have been used. In addition, the student performs an analysis of the level of achievement of the skills and the level of learning from a critical point of view.

Based on all this documentation, TE and TU carry out the evaluation of the tasks and the level of achievement of the associated competencies.

All the information associated with the tasks to be performed by the student (description, competencies and objectives worked on) as well as its evaluation are described in the so-called "Learning Notebook". In it, all the authors involved (student, CT and UT) will be able to write their comments associated with each step performed during the dual training period in order to capture and record a personal analysis and assessments throughout the process. The UT will be responsible for guarding the learning notebook throughout the training process.

Development plan

Week	Type	Participants	Objectives
1	Apprenticeship	TU/AP	To know each other. To know the dual training process. To know the functions of all each actor.
2	Apprenticeship	TU/AP	To know each other. To know the dual training process. To know the functions of all each actor.
3	Business training	TU/AP	To know each other. To know the dual training process. To know the functions of all each actor.
4	Business training	TU/AP	To know each other. To know the dual training process. To know the functions of all each actor.
5	First Meeting	TU/TE/AP	To analyze the integration of the ST into the enterprise. To decide the competencies to work in the first period and the activities associated. Issues/Pooling.
6	First Meeting	TU /TE/AP	To analyze the integration of the ST into the enterprise. To decide the competencies to work in the first period and the activities associated. Issues/Pooling. .
7	Second Meeting	TU /TE/AP	To analyze the acquired know-how. To present the Activity Report (MEM1). To evaluate the first period
8	PARTIAL EXAMS		
9	Third Meeting	TU /TE/AP	To analyze the integration of the ST into the enterprise. To decide the competencies to work in the first period and the activities associated. Issues/Pooling.

10	Third Meeting	TU /TE/AP	To analyze the integration of the ST into the enterprise. To decide the competencies to work in the first period and the activities associated. Issues/Pooling.
11	Fourth Meeting	TU /TE/AP	To analyze the acquired know-how. To present the Activity Report (MEM2). To evaluate the second period. This grade corresponds to the subject
12	Fourth Meeting	TU /TE/AP	To analyze the acquired know-how. To present the Activity Report (MEM2). To evaluate the second period. This grade corresponds to the subject
13	Fifth Meeting	TU /TE/AP	To analyze the integration of the ST into the enterprise. To decide the competencies to work in the first period and the activities associated. Issues/Pooling. To define the topic and plan the development of the TFM.
14	Fifth Meeting	TU /TE/AP	To analyze the integration of the ST into the enterprise. To decide the competencies to work in the first period and the activities associated. Issues/Pooling. To define the topic and plan the development of the TFM.
15	Sixth Meeting	TU /TE/AP	To analyze the acquired know-how. To present the Activity Report (MEM3). To evaluate the second period.
16	PARTIAL EXAMS		
17	PARTIAL EXAMS		
18	PARTIAL EXAMS		
19	Seventh Meeting	TU /TE/AP	Overall evaluation of the dual training process.

Evaluation

This subject is included in the Dual training program. The evaluation is oriented based on competencies that the students develops in the company during the evaluation period.

The TE and TU evaluate the student through the Learning Notebook. The final grade of the subject is obtained as a result of weighing the level of acquisition of the competencies of the subject with the level of the development of the skills or appreciation criteria.

The calculation and weight of each of the parts is obtained by the following formula:

$$0.7 * Competences Grade + 0.3 * Skills Grade$$

The level of skills and competences acquisition is measured based on evidences such as daily monitoring, selfcriticism assessment by the student of his/her learning process, detailed documentation of the learning process, activities performed, developed competencies, methodology, technologies, as well as self-assessment of the level of learning.

All this information is provided by the learner through the Learning Notebook and Activity Memories. At the end of the evaluation period, CT, UT, and student hold a meeting in which the conclusions of the learning process and the final qualification is obtained and shared. The information resulting from the evaluation process is reflected in the Learning Notebook to provide all actors with complete information about and serve as evidence of the evaluation process.

Bibliography

Notebook of Dual Training. Available in the virtual campus of Master's degree in Informatics Engineering