Universitat de Lleida

DEGREE CURRICULUM

ADVANCED TECHNOLOGY OF LEATHER FINISHING 1

Coordination: BACARDIT DALMASES, ANNA

Academic year 2022-23

Subject's general information

Subject name	ADVANCED TECHNOLOGY OF LEATHER FINISHING 1
Code	103118
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION
Typology	Degree: Master's Degree in Leather Engineering; Course: 1; Character: COMPULSORY; Modality: Blended learning
Course number of credits (ECTS)	6
Type of activity, credits, and groups	Query has returned no results
Coordination	BACARDIT DALMASES, ANNA
Department	COMPUTER SCIENCE AND INDUSTRIAL ENGINEERING
Teaching load distribution between lectures and independent student work	Self study: 150 hours
Important information on data processing	Consult this link for more information.
Language	Catalan Spanish English

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
BACARDIT DALMASES, ANNA	anna.bacardit@udl.cat	0	

Subject's extra information

The subject will have two important focus:

- Acquisition of all the concepts and methodologies explained both in the master classes and in the practical classes.
- To promote the contact of the students with companies and events related to the search of the tannery sector.

Among the methodology that will be used in the subject there is organization of workshops, incorporation of audiovisual materials and contact with experts. Individual and group exercises will also be introduced on research work, extracted from conferences in International Congresses and indexed magazines.

• If you do not carry out any of the activities of the laboratory or continuous evaluation, it will be considered as not evaluated.

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
- Chemical 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

When finishing the subject the student must be able to:

-Design what is the completion of a finish and what goals it has.

-Define the factors that must be taken into account when finishing.

-Recognize the different types of products that are used in finishing and how they have to be mixed to obtain different properties and characteristics that define the finished leather.

-To develop a general finishing formulation.

Competences

- Basic competences

B06. To be original in the development and / or application of ideas, often in a research context.

B07. To apply the acquired knowledge and have the ability to solve problems in new or unfamiliar environments in broader (or multidisciplinary) contexts related to their area of study.

B10. To have the learning abilities that allows to continue studying in an autonomous way.

- General competences

CG3. Investigate, develop and innovate.

- Specific competences

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

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

CE5. Identify the main industrial processes of the manufacture of leather in its three phases: beamhouse, tanning and retanning, and finishing.

Subject contents

Topic 1. Introduction

Topic 2. Products used in leather finishing

- 2.1. Pigments
- 2.2. Dyes
- 2.3. Binders and resins
- 2.4. Crosslinkers
- 2.5. Auxiliary products

Topic 3. General considerations of the finish and its requirements

- 3.1. Adhesion
- 3.2. Flexibility
- 3.3. Stability
- 3.4. Resistance to water and solvents
- 3.5. Behavior of finishing on bending
- 3.6. Effect of the particle size
- 3.7. Film forming mechanism
- 3.8. Optical effect of finishing

Topic 4. Physicochemical aspects of prebottoms and impregnations

- 4.1. Surface tension
- 4.2. Viscosity

Topic 5. General formulation.

- 5.1. Dyeing
- 5.2. Prebottom / impregnation
- 5.3. Basecoat
- 5.4. Intermediate coats and tops

Methodology

This subject only gives the right to carry out written tests and evaluate a written work.

Development plan

The first partial exam will be held during the week of November 7 to 11.

The second partial exam will be held during the weeks of January 9 to 27.

The make-up exam will be held during the week of January 30 to February 3.

Evaluation

Evaluation	Proportion
Exercices	10%
Study case resolution	30%
Written test	60%

Bibliography

MAIN:

- Bacardit, A.; Ollé, Ll. (2000). *El acabado del cuero*. Igualada: EUETII-ESAI.

ADITIONAL:

- Adzet, J.M.; et al. (1985). *Química Técnica de Tenería*. Igualada: s.n.
- Adzet, J.M.(coord.); et al. (1995). *Tecnología del Cuero*. Barcelona: Cícero.
- Adzet, J.M.; et al. (1988). *Acabado de la piel*. Barcelona: AQEIC. 2 vols.
- Crestani, M. (1992). *La rifinizione del cuoio*. Rescaldina, Editma cop.
- Morera, J.M. (2000). *Química Técnica de Curtición*. Igualada: EUETII-ESAI.
- Soler, J.(2000). *Procesos de curtidos*. Igualada: EUETII-ESAI.
- Boletines técnicos: *AQEIC, Mecanipiel., World Leather, JSLTC, JALCA, CPM*.