INTERNATIONAL JOINT MASTER IN INNOVATIVE LEATHER TECHNOLOGY

LEATHER PRODUCTION TECHNIQUES

COORDINATION

ASLAN, AHMET

ACADEMIC YEAR

2023-2025

SUBJECT GENERAL INFORMATION

Subject name	**LEATHER PRODUCTION TECHNIQUES**			
Code	*2SEM-SUB5*			
Typology	*2nd semester. Continued evaluation.*			
Course number of credits (ECTS)	*6*			
Type of activity, credits, and groups	*Degree*	*Course*	*Character*	*Modality*
	Joint Master Degree in Leather Technology	*1*	*Compulsory*	*Blended learning*
Coordination	*ASLAN, AHMET*			
University	*EGE*			
Language	*English*			

LEARNING OBJECTIVES

1. Understand the chemical fundamentals in wet-end processes.
2. Recognize the environmental impact of each differentiated operation in wet-end processes.
3. Solve technical problems in wet-end processes.
4. Suggest solutions for possible defects and redesign the process.
5. Analyse the variables that affect the leather quality.
6. Recognize and identify of differentiates of the leathers

LEARNING OUTCOMES

Basic

CB6 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.

CB10 That students have the learning skills that allow them to continue studying in a way that will be largely self- directed or autonomous.

General

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

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

CG3. Research, develop and innovate.

Specific

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

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

CE5. Identify the main industrial processes of leather manufacturing in its three phases: beamhouse, tanning and post-tanning and finishing.

CE9. Project, calculate and design products, processes, facilities and plants, related to the field of leather engineering.

SUBJECT CONTENT

1. **LEATHER PRODUCTION PROCESSES, VARIABLE PARAMETERS, EQUIPMENTS**

   L1.1 Introduction of the Course: Content, Importance, Rules, and Requirements. Definition of raw hide, raw hide sources, presence of animal in Turkey and the World, leather production. Slaught and flay of animals, important aspects, mistakes and the effect on leather quality.

   L1.2 Conservation of Hides and Skins. What is conservation, importance, preparation of raw hides for conservation, conservation methods, effective factors on conservation, conservation mistakes.

2. **GARMENT LEATHER PRODUCTION**

   L2.1 Histological structure of raw hide: Generalities

   L2.2 Fibrillar structure of leather: Generalities

   L2.3 Structural properties of skins: Generalities

   L2.4 Structural properties of fur leathers and reptile animal's leathers. Generalities

3. **UPPER LEATHER PRODUCTION**

   L3.1 General compounds of raw hide: Proteins, wool, hair, lipid and others.

   L3.2 Properties of collagen and importance in terms of leather industry.

   L3.3 Properties of elastin, reticulin, keratin and other globular proteins of raw hide.

4. **PRODUCTION OF LEATHER GOODS**

   L4.1 Degradation of raw hide, factors causing the degradation, bacterium and fungus.

   L4.2 Factors effecting the quality of raw hides.

   L4.3 Classification, packaging and storing of raw hides.

5. **EXOTIC LEATHER PRODUCTION**

METHODOLOGY

THEORY CLASSES

Expository lectures: by the teacher, with the explanation of concepts, materials and work plan. Support.

Material: Course notes and relevant bibliography.

EXERCISES AND SELFSTUDY

General description: Individual exercises, self-learning and individual study. Support material: Course notes and relevant bibliography.

Deliverable: Exercises to deliver at the end of every unit via digital campus.

PRACTICES IN THE TANNING PILOT PLANT

General description: Formulations of different processes will be performed on a pilot level, individually or in small groups. It should be performed a notebook where to recorded all the modifications of the process and used products during the process.

Support material: Practices are held at the tanning pilot plant. All materials and reagents are in the same pilot plant. The scripts of the processes will be provided by the teacher in charge of monitoring practices.

Deliverable: At the end of these practices the student shall deliver the practices report, which will content note of all the data, calculations, incidents, and observations.

EVALUATION

Exercices	15%
Practices	30%
Exam 1	20%
Exam 2	35%