



## BIOBASED TECHNOLOGIES FOR LEATHER PRODUCTION

**COORDINATION**  
**ASWORTH, CIAN**

**ACADEMIC YEAR**  
2023-2025

### SUBJECT GENERAL INFORMATION

Subject name	BIOBASED TECHNOLOGIES FOR LEATHER PRODUCTION			
Code	4SEM-GC-SUB4			
Typology	4th semester. Continued evaluation.			
Course number of credits (ECTS)	3			
Type of activity, credits, and groups	Degree	Course	Character	Modality
	Joint Master Degree in Leather Technology	1	Compulsory	Blended learning
Coordination	ADIGÜZEL ZENGİN, ARİFE CANDAŞ			
University	EGE			
Language	English			

## LEARNING OBJECTIVES

1. To be able to understand and apply the basic concepts of biobased bioprocesses.
2. To be able to understand and apply the basic analytical methods needed for microbial and biotechnological processes.
3. To be able to understand and apply the basic concepts of microbial and biotechnological bioprocesses.

## 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.

CG3. Research, develop and innovate.

### Transversal

CT03. Propose innovative, creative and entrepreneurial solutions in situations typical of the professional field.

### Specific

CE2. Analyse, 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 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. INTRODUCTION TO BIOBASED TECHNOLOGIES

L1.1 Basic concepts related to biobased technologies; Information about the bioprocess applications in leather engineering

L1.2 Green deal and green chemicals

### 2. BIOBASED TECHNOLOGIES FOR BEAMHOUSE OPERATIONS

L2.1 The main principles of biobased technologies in leather manufacturing

L2.2 The biobased applications performed in soaking till tanning;

L2.3 The substances used in biobased production and their mechanisms

### 3. BIOBASED TECHNOLOGIES FOR WET-END AND FINISHING OPERATIONS

L3.1 The biobased applications performed in tanning till finishing

L3.2 The substances used in biobased production and their mechanisms

L3.3 Future perspectives in biobased applications

## 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.

## EVALUATION

Exam 1	40%
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Exam 2	60%
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