



INTERNATIONAL
JOINT MASTER IN
**INNOVATIVE
LEATHER
TECHNOLOGY**

PRODUCT SAFETY AND COMPLIANCE

COORDINATION
ZENGİN, GÖKHAN

ACADEMIC YEAR
2023-2025

SUBJECT GENERAL INFORMATION

Subject name	PRODUCT SAFETY AND COMPLIANCE			
Code	2SEM-SUB6			
Typology	2nd semester. Continued evaluation.			
Course number of credits (ECTS)	3			
Type of activity, credits, and groups	<i>Degree</i>	<i>Course</i>	<i>Character</i>	<i>Modality</i>
	<i>Joint Master Degree in Leather Technology</i>	<i>1</i>	<i>Compulsory</i>	<i>Blended learning</i>
Coordination	ZENGİN, GÖKHAN			
University	EGE			
Language	English			

LEARNING OBJECTIVES

1. Define and classify the hazardous/dangerous chemicals
2. Learn the international regulations and legislations about the use of hazardous chemicals
3. Understand the effects the hazardous or dangerous materials on human health and environment used in beamhouse processes
4. Understand the effects of the chemicals on human health and environment used in finishing process
5. Interpret the effects of chemicals used in leather manufacturing processes on human health and environment

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

CG3 Research, develop and innovate.

Transversal

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

Specific

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

CE11. Apply the necessary legislation in the field of leather engineering.

SUBJECT CONTENT

1. INTRODUCTION TO HAZARDOUS / DANGEROUS CHEMICALS

L1.1 Introduction to Hazardous / Dangerous Chemicals.

L1.2 General information about the waste generating leather manufacturing process.

2. POLLUTION LOADS OF CHEMICALS USED IN BEAMHOUSE OPERATIONS

L2.1 Pollution loads of surface-active agents (NPEO, APEO), salts (NaCl, Na₂SO₄), and other chemicals used in soaking process.

L2.2 Pollution Loads of Conventional Chemicals (Na₂S, lime) used in dehairing and liming processes and their effect on health.

L2.3 Effect of different chemicals used for deliming process on pollution load and the hazardous gases occurred after the reactions of these chemicals.

L2.4 The effect of mineral and organic acids used for pickle process and some of the chemicals used in tanning process on environment and health.

3. POLLUTION LOADS OF CHEMICALS USED IN WET-END AND FINISHING

L3.1 The problems raised due to usage of aldehyde-based chemicals in leather manufacturing processes.

L3.2 The effect of synthetic tanning substances and some by-product's used at processing steps on products and environment.

L3.3 The effect of dyestuff (azo, metal complex) used for dyeing process on environment and health.

L3.4 The effect of binders used for finishing process (polyurethane, cross linker) on environment and health.

L3.5 The environmental impact of finishing solvents (polyurethane, cross linker).

4. REACH AND ZDHM LEGISLATION

L4.1 International limitations of dangerous and hazardous chemicals.

METHODOLOGY

THEORY CLASSES

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

Material: Course notes and relevant bibliography.

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

EVALUATION

Exam 1 20%

Exam 2 35%
