INTERNATIONAL JOINT MASTER IN INNOVATIVE LEATHER TECHNOLOGY

AUTOMOTIVE LEATHER MANUFACTURING

COORDINATION
CIATEC

ACADEMIC YEAR
2023-2025

SUBJECT GENERAL INFORMATION

Subject name	**AUTOMOTIVE LEATHER MANUFACTURING**			
Code	*4SEM-GD-SUB2*			
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	*Beltrán Ramírez, Flora Itzel*			
University	*CIATEC*			
Language	*English*			

LEARNING OBJECTIVES

1- Put the students within a situation where the 4 main problematics of a company come up in order for them to understand the essential bases that make up the priorities of a new CEO.

LEARNING OUTCOMES

Basic

CB010 That students have the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous.

General

CG02. Technically and economically manage projects, facilities, plants, companies and technology centres.

CG04. Lead, plan and supervise multidisciplinary teams.

Transversal

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

Specific

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 CONTENT

1. INTRODUCTION TO AUTOMOTIVE ARTICLES

L1.1 Automotive Leather

Regulations and relevant characteristics

Automotive leather goods or products

L1.2. Leather technology

2. INITIAL STAGES

L2.1 Stages prior to tanning: objectives, materials, factors, processes, controls and associated defects

L2.2. Tanning

Chrome and other inorganic tanning

Organic tanning: vegetable and synthetic

Tanning with Aldehydes and others in use

Wet-White production

L2.3. Machining in tanning

Rest, sammying, splitting, shaving: Objectives, phenomena, associated principles, controls and defects

3. WET FINISHING

L3.1 Introduction to wet finishing, related processes

L3.2. Objective, properties, characteristics, materials, factors, processes, controls and associated defects.

4. DRYING AND CONDITIONING

L4.1 Introduction to the stage and to obtaining the crusted leather

L4.2. Drying, conditioning, staking

L4.3 Objectives, factors, principles, phenomena, process. Controls, failures and associated defects

5. PREFINISHED

L5.1 Sorting and trimming; buffing and shaken.

L5.2 Objectives, factors, devices, controls and associated defects

L5.3 Characteristics and properties of the necessary crust leather and its behaviour in operations. Regulations and substrate quality criteria

L5.4. Work Systems to generate the crust leather

6. AUTOMOTIVE LEATHER FINISH

L6.1 Introduction to automotive leather upholstery

L6.2 Finishing processes and systems

L6.3 Materials, formulas and coatings of the automotive leather finish

7. NORMS, EVALUATIONS AND PROPERTIES

L7.1 Study and analysis of the main specifications of the finish according to the article

L7.2 Properties of materials, preparations and applications

L7.3 Finish coat properties

8. FORMULATION OF FINISHES

L8.1 Formula Analysis

L8.2 Principles, methods and systems to formulate

L8.3 Development of automotive finishes

9. COLOR IN THE AUTOMOTIVE INDUSTRY

L9.1 Theory, principles

L9.2 Colorimetry

L9.3 Parameters and Controls

L9.4 Reproduction

10. FINISH DEFECTS

L10.1 Of the pure materials and of the preparation

L10.2 Application and drying

L10.3 From engraving, staking and drumming

L10.4 Of curing and rest

11. MICROSCOPY AND CHARACTERIZATION OF FINISHES AND FLAWS

L11.1 Optical Light Microscopes

Equipment, Elements and Functions

Uses, Applications and types

L11.2 Evaluations and Characterization of Finishes and Failures

Through images

Chemistry, Physic chemistry

Mechanics and Solidities

METHODOLOGY

THEORY CLASSES

Expository lectures: By the invited professor or instructors, with the explanation of concepts, materials and work plan.

Support material: Course notes and relevant bibliography.

Workplace: Classrooms.

EXERCISES AND SELFSTUDY

General description: Individual exercises, self-study and individual research

Support material: Course notes and relevant bibliography

Deliverable: Exercises at the end of each unit.

PRACTICES IN THE WET FINISHING PILOT PLANT

General description: The different processes and their formulations will be carried out at a pilot level, individually or in small groups. Must have a log for each manufactured item, where to record, the processes, their formulas and modifications, and the products used during development.

Support material: Tanned and machined leathers, retaining, wet finishing formulations, drying, and pre-finishing processes for various items.

Deliverable: At the end of the practices or developments, the student will make a report with all the data, calculations, incidents, observations, evidence, withheld and corresponding counter samples.

EVALUATION

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