

# COURSE SYLLABUS

<b>University</b>	<b>UNIVERSITY OF ORADEA</b>
<b>Faculty</b>	<b>FACULTY OF ENERGY ENGINEERING AND INDUSTRIAL MANAGEMENT</b>
<b>Study program*</b>	<b>INDUSTRIAL ECONOMICAL ENGINEERING</b>

## I. Course Name: Computer aided design in footwear

## II. Course Details

		No of hours/week				
Code	Semester	Credits	Lecture	Seminar	Laboratory	Project
<b>IEMI-0525</b>	<b>VII</b>	<b>5</b>	<b>2</b>	<b>-</b>	<b>2</b>	<b>-</b>

## III. Course coordinator (title, name, surname, e-mail):

Associate Professor PhD. Eng., Albu Adina-Victoria, adina\_victoria@yahoo.com

## IV. Course objectives

- mastering the general principles of development and familiarizing students with the basic concepts and notions in the field of computer-aided design necessary for obtaining leather products.
- acquiring skills in understanding processes and developing documentation that comply with international standard norms

## V. Course content

**No. of hours**

### V.1. Lecture (chapters/subchapters and paragraphs)

General aspects of footwear product design	2
1.1. Development of design techniques using CAD/CAM systems.	2
Designing footwear products using the copy method	2
2.1. Conventional average last development - average copy.	2
Drawing the construction network on the conventional average development of the footing	2
3.1. Drawing the pulling reserve	2
Development of standard constructions for various types of footwear	2
4.1. Principles underlying the development of standard constructions	2
Detailing the basic drawing	2
5.1. Adoption of technological reserves	2
5.2. Detailing symmetrical marks	2
Defining the graphic shape of the outlines of the marks by extracting them from the base drawing	2
Mathematical modeling of the contours of footwear components	2
Software product for constructing interpolating curves that approximate the contour of a landmark	2
Grading patterns of a footwear product designed for the average size	2
Dimensional variation of footwear products	2
Analysis of dimensional variation of patterns within the size series	2
Establishing the correspondence between the basic dimensions of patterns within the size series	2
Software product for multiplying patterns of a footwear product	2
Development of theoretical models for framing patterns on the surface of the cutting material	2
Determining the optimal variant of framing a landmark in a translation system	2
Determining the optimal variant of framing a landmark in a roto-translation system	2
Determining the theoretical material consumption norms for a unit of footwear product	2
Waste classification and their influence on the theoretical consumption norm	2
Calculation of the theoretical consumption norm for a unit of footwear product	2
<b>V.2. Laboratory/Seminar/Project:</b>	
Designing footwear products using the AutoCAD software package in interface with specialized software products.	2
Footprint marking	2
AutoCAD work session for drawing the construction network	2

Drawing base and auxiliary lines in AutoCAD	2
Development of the basic design for the footwear assortment "men's shoes", the over-the-vamp version	2
AutoCAD work session for drawing joint allowances and processing edges	2
AutoCAD work session for determining the geometric parameters of the constructed landmark	2
Software product for mathematical approximation of the contours of the parts of a footwear product with B-spline interpolating functions	2
AutoCAD work session for digitizing pattern outlines	2
Editing the graphic shape of digitized pattern outlines	2
Footwear product measurement systems	2
AutoCAD work session for grading patterns of a footwear product	2
Software product for automatically obtaining variants for fitting patterns of a footwear product with determination of the optimal fit factor	2
Assessing the economic efficiency of a footwear product "men's shoes" designed	2

## VI. Bibliography

1. Albu Adina-Victoria, Computer-aided design of footwear, Course notes, E-Learning, e.uoradea.ro, Oradea, 2025
2. Albu Adina-Victoria – Constructive and technological development of footwear last, University of Oradea Publishing House. 2011
3. Mariana Cocea, Dan Florin Croitoru: “CAD procedures for footwear design”, “Gh. Asachi” Publishing House, Iași, 2003
4. Costea M., Footwear modeling and rapid prototyping of prophylactic components. Performantica Publishing House, IAȘI, 2015
5. Harnagea F., Technology of Leather Goods, Performantica Publishing House, Iași, 2002
6. Mălureanu G., Mihai A., Basics of Shoe Design, Performantica Publishing House, Iași, 2003
7. <https://shoemaster.com>
8. Romans Cad
9. Crispin Dynamics Cad

## VII. Grading criteria

Activities	Assessment	% of final grade
Exam	<p>Written exam:</p> <p>1. Requirements to get the minimum grade for passing the exam Knowledge and understanding of the course content at the level of basic ideas. For the minimum grade, the student must correctly solve 5 questions on the final exam. Solving at least half of the quizzes in the written exam.</p> <p>2. Requirements for the maximum grade Knowledge and understanding of the course content at the level of high ideas. For the minimum grade, the student must correctly solve 10 questions on the final exam. Solving all the quizzes in the written exam.</p>	70%
Seminar/Laboratory/Project	The evaluation of the laboratory activity is based on tests (10%), the paper produced and presented (10%), and the method of active participation in debates (10%).	30%

## VIII. Learning outcomes:

The student/graduate has knowledge of information regarding CAD software and programs used in the footwear, leather clothing and leather goods industry, by applying knowledge of computer-aided design.

Done on the date: 20.09.2025

Approved in the FC meeting: 24.09.2025

Course coordinator,

**Associate Professor PhD. Eng., Albu Adina-Victoria**