

COURSE SYLLABUS

University	UNIVERSITY OF ORADEA
Faculty	FACULTY OF ENERGY ENGINEERING AND INDUSTRIAL MANAGEMENT
Study program*	<i>QUALITY MANAGEMENT AND CONSUMER'S PROTECTION IN THE FIELD OF TEXTILES AND LEATHER</i>

I. Course Name: INTEGRATED DESIGN OF PRODUCTION SYSTEMS

II. Course Details

No of hours/week						
Code	Semester	Credits	Lecture	Seminar	Laboratory	Project
IEMI 0656	1	6	2	2		

III. Course coordinator (title, name, surname, e-mail): Assoc prof Gherghel Sabina, sgherghel@uoradea.ro

IV. Course objectives

The objectives of the discipline are related to the highlighting of computer-integrated manufacturing, which is an automated version of the general manufacturing process, in which each function is replaced by a set of automated technologies.

V. Course content

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

	No. of hours
Current status and development trends of production systems.	2
Modern manufacturing systems.	2
Design and implementation of an integrated production system.	2
Equipment integration.	2
Data integration.	2
Product design. New products.	2
Product design simulation process.	2
Systemic integration of the enterprise.	2
Computer Aided Manufacturing - CAM. Computer Aided Planning - CAP.	2
Computer Aided Quality - CAQ. Computer Aided Maintenance - CAM.	2
Functions of the integrated production system.	2
Benefits of applying the CIM concept.	2
Analysis of manufacturing systems.	2
Functional-technological connection between manufacturing systems and production processes.	2
V.2. Laboratory/Seminar/Project:	
Flexible systems. Flexibility criteria. The position of the enterprise in a certain market segment.	2
The role of software applications in the production system.	4
The layout of the manufacturing system.	4
Manufacturing process planning.	2
Lean manufacturing.	4
Just in Time production method.	4
The relationship between the quality function and other functions of the enterprise.	2
Supervision and control of flexible manufacturing processes.	4
Intelligent production system.	2

VI. Bibliography

1. Farhan, U. H., An integrated system to design machine layout for modular special purpose machines, Ph.D. Thesis Cowan University, 2018

2. Gherghel S., *Managementul și ingineria sistemelor de producție, Colecție de lucrări practice*, Editura Universității din Oradea, 2005
3. Gherghel ,S, *Seminar, CISP, 2025*, Platforma e-learning
4. Militaru G., *Managementul producției și al operațiunilor*. Editura All, București, 2008;
5. Steven T. H., *Modele de succes pentru managementul firmelor*. Editura Andreco Educational, București, 2009;
6. Takata, A. O., și, *A knowledge-based mesh generation system for forging simulation*. Kluwer Academic Publishers, 2000
7. Verret, E., și - *Managementul producției și al operațiunilor*, Editura TEORA, București, 2005

VII. Grading criteria

Activities	Assesment	% of final grade
Exam	Oral exam: Theoretical support of a paper on a well-determined topic.	70%
Seminar/Laboratory/Project	Completion of the proposed themes.	30%

VIII. Learning outcomes:

Identification of procedures for design and development of advanced production systems.

Course coordinator,

Assoc prof Gherghel Sabina