COURSE SYLLABUS

University	UNIVERSITY OF ORADEA
Faculty	FACULTY OF ENERGY ENGINEERING AND INDUSTRIAL MANAGEMENT
Study program*	*INDUSTRIAL ECONOMICS ENGINEERING*

I. Course Name: PRODUCTION SYSTEMS ENGINEERING

II. Course Details

No of hours/week						
Code	Semester	Credits	Lecture	Seminar	Laboratory	Project
IEMI 0242	5	5	3			1

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

IV. Course objectives

Familiarizing students with the specific notions of systems engineering, with the processes, means, tools and procedures of design, creation, implementation, maintenance and development of production systems, able to respond effectively to the multitude of requirements imposed by environmental transformations.

V. Course content	**No. of hours**
V.1. Lecture (chapters/subchapters and paragraphs)	
Introduction. The object of study of systems engineering. System. System function and structure. Hierarchy of systems. Cybernetic system.	3
The industrial company as a complex industrial cybernetic system. The role of the company in the context of the market economy. The company as a cybernetic-industrial system. The adjustment process. Types of adjustments. The cybernetic model of the company. Hierarchy of subsystems. The advantages of approaching companies as a system.	3
Production. Production activity. Production process. Production system. Functions of a production system. The concepts of mechanization, automation, flexibility. Integrated design. Manufacturing subsystem.	6/ 2 lectures
Organization of manufacturing on orders. Flow manufacturing organization. Manufacturing cycle. Manufacturing batch. Ways to reduce the manufacturing cycle	6/ 2 lectures
Production capacity (P_c). Definitions. Factors that determine the size of production capacity. Determination of production capacity. Production capacity calculation relations.	6/ 2 lectures
Degree of production capacity utilization. Capacity balance since the beginning of the year. Balance of production capacity dynamics. Optimizing the use of production capacity.	
Economic efficiency. Determining the level of economic efficiency	3
Productivity indicators. Economic indicators. Profitability indicators. Ways to increase economic efficiency.	3
Production stocks. Inventory functions.	3
Maintenance tasks. Maintenance system. Types of maintenance systems. Organization of maintenance activity.	3
Functions of the logistics subsystem. The structure of the logistics subsystem. Transport function. Storage function. Handling function. Efficiency of logistics subsystem design	3
V.2. Laboratory/Seminar/Project:	
Design of a production system.	14

VI. Bibliography

1. Carabulea A., Gh. Rusitoru- Optimizarea conducerii sistemelor industriale, E.D.P., Bucureşti, 1986
2. Carabulea A.– Management şi inginerie industrială sistemică, U.T.B., 1994
3. Gherghel S., Indrie L.– Bazele şi ingineria sistemelor de producţie, Ed. Univ. din Oradea, 2005
4. Gherghel S., Indrie L.– Bazele şi ingineria sistemelor de producţie, Ed. a II a, Ed. Univ. din Oradea, 2007
5. Maynard H.B.– Manual de Inginerie Industrială, Ed. Tehnică, 1977
6.*** Colecţia revistei Adevărul economic

VII. Grading criteria

Activities	Assesment	% of final grade
Exam	Written exam: 1. Requirements in order to get the minimum grade for passing the exam. For grade 5, correct answer to 10 questions. 2. Requirements for the maximum grade For grade 10, correct answer to 20 questions.	70%
Seminar/Laboratory/Project	Completion and presentation of the project.	30%

VIII. Learning outcomes:

Ability to efficiently solve specific problems related to the choice of equipment, processing methods and general organization of the production system.

Course coordinator,

Assoc prof Gherghel Sabina