COURSE DESCRIPTION CARD - SYLLABUS

Course name
Introduction to management and production engineering [N2ZiIP2>WDZIP]

Course

Field of study
Management and Production Engineering

Year/Semester
1/1

Area of study (specialization)
–

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
part-time

Requirements
elective

Number of hours

Lecture
24

Laboratory classes
24

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

6,00

Coordinators

Lecturers

Prerequisites

The student has knowledge of the application of information technology in an enterprise. Can operate a computer, distinguish between strategic, tactical and operational decisions. The student has knowledge related to the fundamentals of management in organizations, is aware of the importance of quality in the operation of enterprises and of the role of an enterprise in the economic system. The student should have knowledge in the field of operation of a production enterprise.

Course objective

The aim of the course is to: 1. supplement knowledge in the area of the functionality of management information systems for students who did not complete the field of Management and Production Engineering in the first cycle of study. As part of the course, the student will learn theoretical and practical issues related to the construction of management information systems and their basic functionality. 2. transfer knowledge and skills in the field of management of process organizations, pro-quality activities of enterprises and economic aspects in production. 3. become familiarized with the basic areas of production management: production preparation, planning and production control.

Course-related learning outcomes

Knowledge:
The student knows the evolution of IT management systems.

The student has knowledge in the field of the construction and functionality of IT management systems and knowledge covering the implementation of modern management standards in IT systems.
The student has theoretically based knowledge of business management and production processes.
The student has theoretically based knowledge of the use of IT systems in business management and production processes of IT systems.
The student has basic knowledge of the economic aspects of the functioning of a production enterprise.
The student knows the characteristics of the production system and process.
The student knows the elements of the production system (production structure, types of production cells).
The student knows the differences in production types (unit, low-volume, serial, mass).
The student knows the basic forms of production organization.
The student knows the basic parameters of the production flow.
The student knows the methods of production control in a different approach to the organization of production systems.

Skills:
The student can obtain information from IT management systems.
The student can model and define the production process in the management IT system.
The student can manage the production process using computer tools, configure the product and prepare the necessary data for the IT system.
The student can notice and identify problems appearing in production systems and processes and select and use methods and tools appropriate for solving them.
The student can communicate within a team with subordinates and superiors.
The student can calculate and interpret indicators characterizing basic and auxiliary processes.
The student can take into account internal and external factors affecting the adoption of specific production capacity.
The student can calculate the parameters of the production flow.

Social competences:
The student can independently develop knowledge in the subject and think and act in an entrepreneurial way.
The student is aware of the role of computerization in engineering activities in the area of production management.
The student has knowledge necessary to understand the social, economic, legal and other non-technical conditions of the engineering activity.
The student is aware of the effects of engineering activities both in technical and non-technical areas.
The student is aware of the effects of decisions made and is responsible for them.
The student understands the importance of production organization for the functioning of an enterprise.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative assessment:
laboratory class: based on the assessment of the current progress of laboratory tasks,
lecture: based on the answers to questions about the material discussed in previous lectures.
Summative assessment:
laboratory class: credit on the basis of tasks performed during laboratory classes and obtaining a positive assessment of the completed report on the conducted exercises for each substantive part.
lecture: credit test in the form of questions for each of the three substantive parts of the lectures. Credit in the written or oral form on the basis of scored questions (credit in the case of obtaining 51% of points. Assignment of grades to percentage ranges of results: <90–100> very good; <80–90) good plus; <70–80) good; <60–70) satisfactory plus; <50–60) satisfactory; <0–50) unsatisfactory.) carried out at the end of the module of classes.

Programme content

Management in organizations. Production management. Integrated management systems.

Course topics

Lecture:
Part 1
1. Functions and tasks of integrated management systems.
2. Fundaments of management theory and work organization implemented in IT systems.
3. International business management standards, including MRP/MRP II approach, architectures and information technologies used in implementations.
4. Characteristics of data structures in management IT systems.
5. BOM structure.
6. Features of IT management systems.
7. Modular construction of integrated management systems.
Part 2:
1. Management - origins, essence, functions and processes.
2. Management system as an information and decision-making system.
3. Organizational structures of enterprises.
4. The essence of managerial work and management of other resources.
5. Examples of management methods and techniques.
6. Enterprise environment.
7. Contemporary trends and concepts in management.
8. The place of an enterprise in the economic system, micro and macroeconomic relations.
9. Financial management in an enterprise.
10. Quality management, quality management strategies.
11. Analysis of economic efficiency.
Part 3:
1. Production system, production process, type of products.
2. Sequential and concurrent engineering.
3. Product life cycle. Processes in production systems.
4. Production flow. Forms of production flow. Production structure. Sockets and production lines.
5. Types of production. Strategies for meeting demand.
6. Production planning. Production scheduling.
7. Production control.
8. Cost accounting systems. Cost calculation methods. Traditional cost accounting.
Laboratory class:
Part 1:
1. Introduction to the laboratory class, company assignment, discussion of tasks to be performed.
2. Familiarization with the construction of the IFS integrated management system.
3. Entering basic data into the system (manufactured products, enterprise structure, means of production, human resources, technological processes, suppliers, customers, etc.).
4. Entering customer order data.
5. Launching the MRP procedure and calculating material demand for a production order.
6. Carrying out the procedure for ordering materials.
7. Production order management.
Part 2:
1. Introduction to the laboratory class, discussion of tasks to be performed.
2. -7. Simulation of the production system, with particular emphasis on management processes and quality management, planning and organizing processes in a dynamic economic environment.
Part 3:
1. Introduction to the laboratory class, discussion of tasks to be performed.
2. -7. Simulation of the production system where students become acquainted with the functioning of a production enterprise.

Teaching methods

Lecture: multimedia presentation illustrated with examples given on a board, solving tasks, discussion
Laboratory classes: solving tasks using a computer, practical exercises, discussion, solving practical problems, teamwork, simulation.

Bibliography

Basic:
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4. Chlebus E., Techniki komputerowe CAx w inżynierii produkcji, WNT, Warszawa 2000
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Additional:
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2. Durlik I., Inżynieria zarządzania, Tom 1 i 2, Wydawnictwo Placet, 1996
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Breakdown of average student's workload

	Hours	ECTS
Total workload	150	6,00
Classes requiring direct contact with the teacher	48	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	102	4,00