COURSE DESCRIPTION CARD - SYLLABUS

Course name
Production of customized products [N2ZiIP2>PWK]

Course

Field of study
Management and Production Engineering

Year/Semester
2/3

Area of study (specialization)
Production control

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
8

Laboratory classes
8

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

dr inż. Krzysztof Żywicki
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Lecturers

Prerequisites

The student has basic knowledge of production management. Has knowledge of the management and control of production processes. Has basic knowledge of IT systems supporting design work and production control.

Course objective

Learning, understanding and acquiring the ability to apply in practice the principles and tools related to the implementation of processes related to customized products.

Course-related learning outcomes

Knowledge:
The student has structured, theoretically based, detailed knowledge related to the organization of production processes
The student has extended knowledge of designing production systems
The student has theoretically based, detailed knowledge of enterprise management and production processes
The student has structured, theoretically based knowledge of trends in improving the organization of

control and supervision of production processes

Skills:
The student is able to organize production taking into account customer demand and production resources
The student is able to plan and carry out design work related to the organization of the production system.
The student is able to develop forecasts regarding the effectiveness and efficiency of production processes
The student is able to notice and identify problems occurring in systems and production processes, and select and use methods and tools appropriate to solve them.

Social competences:
The student understands the need for continuous learning; can inspire and organize the learning process of team members.
The student is able to think and act in a creative and entrepreneurial way.
The student is aware of the effects of engineering activities in both technical and non-technical areas.
The student is aware of the consequences of decisions made and responsibility for decisions made.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: Knowledge and skills acquired during lectures will be verified on the basis of a colloquium including definitional and problem questions. The test consists of 8-10 open questions and 2-4 computational tasks. The passing threshold is 50%. 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.
Laboratory: pass based on the preparation of a report.

Programme content

Characteristics of products in the era of Industry 4.0 and mass customization. Impact of customization on the implementation of production processes. Issues of implementing mass customization strategies.

Course topics

Lecture: Characteristics of products in the era of the Industry 4.0 concept and mass customization (high frequency of changes, large scale of the assortment, high product variants. The impact of customization on the implementation of production processes. Issues of implementing the strategy of mass customization. Issues and conditions for the implementation of production processes of customized products. IT systems supporting product design variants.
Laboratory: To familiarize students with IT solutions supporting the organization and control of production processes, taking into account the specificity of custom-made products. Familiarizing students with IT solutions supporting the processes of preparing the production of customized products.

Teaching methods

Lecture: multimedia presentation illustrated with examples, solving tasks, discussion
Laboratory: solving practical problems, teamwork, simulation, discussion.

Bibliography

Basic:
Karol Marek Klimczak, Janusz Mleczko, Dorota Więcek, Działalność gospodarcza przedsiębiorstw w warunkach Przemysłu 4.0, PWE 2023
Andrzej Jardzioch, Krzysztof Kalinowski, Sławomir Kłos, Organizacja i planowanie produkcji, PWE 2023
Krzysztof Santarek, Jan Duda, Sylwester Oleszek, Zarządzanie cyklem życia produktu, PWE 2022.

Additional:
Lewandowski Jerzy, Skołud Bożena, Plinta Dariusz, Organizacja systemów produkcyjnych, PWE,

Warszawa 2014r.
Waters Donald, Zarządzanie operacyjne, PWN, 2023

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	16	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	34	1,50