POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Organization of Production Preparation [N1IZarz1>OPProd]

Course

Field of study	Year/Semester
Engineering Management	2/4
Area of study (specialization)	Profile of study
–	general academic
Level of study	Course offered in
first-cycle	polish
Form of study	Requirements
part-time	elective

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
10	0	0
Tutorials	Projects/seminars	
12	0	

Number of credit points

3,00

Coordinators

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Lecturers

Prerequisites

The student has knowledge related to the enterprise management, design of technological processes and the basics of machine construction and organization of production. In addition, he can integrate knowledge acquired in other subjects as well as interact and work in a team.

Course objective

To acquaint students with theoretical and practical problems associated with the organization of the new product development process in a manufacturing company

Course-related learning outcomes

Knowledge:
The student describes the basic aspects of the life cycle of industrial products, including stages of design, technological, and organizational preparation for production [P6S_WG_15].
The student identifies methods, techniques, tools, and materials used in the process of preparing and managing production [P6S_WG_16].
The student lists typical industrial technologies and explains their application in the context of modern product design [P6S_WG_17].

The student characterizes the basic principles of safety and occupational hygiene and their importance for production preparation [P6S_WG_18].
The student explains the basic concepts of quality management and business activities in the context of production preparation [P6S_WK_02].

Skills:
The student analyzes tasks in the area of production preparation, considering their systemic, socio-technical, organizational, and economic aspects [P6S_UW_11].
The student performs a critical analysis of technological processes and the organization of production systems, using tools such as CAx [P6S_UW_13].
The student identifies and solves design tasks related to production preparation, including the design of production units [P6S_UW_14].
The student applies techniques for solving production preparation problems, including the integration of CAx technologies [P6S_UW_15].
The student designs the structure and technology of product manufacturing, using modern prototyping methods and life cycle cost simulation [P6S_UW_16].

Social competences:
The student seeks and selects educational and training centers to develop skills necessary for production preparation [P6S_KK_01].
The student substantively contributes to production preparation projects, considering legal, economic, and organizational aspects [P6S_KO_01].
The student is aware of the necessity of a systemic approach in product creation, considering comprehensive technical and economic conditions [P6S_KO_02].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Knowledge acquired during the lecture is verified by short tests conducted after 2,4,6 lecture. The tests consist of 6 closed questions (3 for each lecture). Assessment threshold: 50% of the points (satisfactory). Knowledge acquired as part of the exercise is verified on the basis of solving individual tasks covered by the exercise program. The student receives points for each task. Assessment threshold: 50% of the points (satisfactory).

Programme content

Lecture: Product development and service processes in a manufacturing company. Goals, tasks and functions of product development processes in a manufacturing enterprise. Financial outlays and connections between product development and innovative activity. Construction, technological and organizational development of production. Organization of organizational units of production development in the enterprise. Conditions of modern product design. CAx technologies in computer aided design and manufacture of products and problems of their integration. Modern prototyping technologies. Technical Documentation. Product life cycle curve and product production costs. Life Cycle Costing (LCC) as a product life cycle cost management model.
Exercises: practical verification of methods supporting engineering activities (e.g. Brainstorming, morphological analysis, SCAMPER method), life cycle cost simulation (LCC) for a given product.

Teaching methods

Information lecture in the form of a multimedia presentation, with elements of a conversational lecture. Exercises: problem and activating methods: auditorium exercises, solving case studies and cognitive tasks.

Bibliography

Basic:
1. Jardzioch A., Kalinowski K., Kłos S. (2023). Organizacja i planowanie produkcji, Polskie Wydawnictwo Ekonomiczne, Warszawa
2. Kałkowska J. (2018). Podejście proeksploatacyjne w procesach powstawania pojazdów transportu publicznego, Wydawnictwo Politechniki Poznańskiej
3. Szatkowski K. (2013). Przygotowanie produkcji, PWN, Warszawa

4. Kawecka-Endler A. (2004). Organizacja technicznego przygotowania produkcji prac rozwojowych, Wydawnictwo Politechniki Poznańskiej, Poznań

Additional:
1. Santarek K., Duda J., Oleszek S. (2022). Zarządzanie cyklem życia produktu, Polskie Wydawnictwo Ekonomiczne, Warszawa
2. Szatkowski K. (red.). (2014). Nowoczesne zarządzanie produkcją. Ujęcie procesowe, PWN, Warszawa
3. Brzeziński M., Organizacja produkcji, Wydawnictwo Politechniki Lubelskiej, Lublin 2000
4. Chlebus E., Techniki CAx w inżynierii produkcji, WNT, Warszawa 2000
5. Sosnowska A. (red.), Zarządzanie nowym produktem, Oficyna Wydawnicza SGH, Warszawa 2000

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,00
Classes requiring direct contact with the teacher	25	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	50	2,00