COURSE DESCRIPTION CARD - SYLLABUS

Course name
Technological preparation of production [S1ZiIP2>TPP]

Course

Field of study
Management and Production Engineering

Year/Semester
2/3

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
15

Other
0

Tutorials
0

Projects/seminars
15

Number of credit points

4,00

Coordinators

dr inż. Przemysław Zawadzki
przemyslaw.zawadzki@put.poznan.pl

Lecturers

Prerequisites

Basic knowledge of: manufacturing techniques, material technology and interpretation of design and technological documentation (knowledge of technical drawing). Ability to use CAD system. Ability to independently search for knowledge from literature sources and the Internet.

Course objective

Familiarization with the basics of designing technological processes in the area of technical preparation of production, including parts, finished products and production tools, using CAx class systems.

Course-related learning outcomes

Knowledge:
1. The student knows the concept of technical preparation of production and knows the role and importance of the technology design process.
2. The student knows the structure of the technological process.
3. The student knows what tools and methods are used in the technology design process.

Skills:

1. The student is able to define the framework technological process for the selected part.
2. The student is able to develop technological documentation, select semi-finished products, machines, calculate the value of the technical time standard and the values of machining parameters for selected parts using the selected CAx system

Social competences:
1. The student is able to engage in solving the problems posed.
2. The student is open to implementing modern information technologies in science and technology.
3. The student is able to take responsibility for the tasks assigned to him and the results obtained.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: exam based on a colloquium consisting of closed and open questions scored on a scale of 0-2; the colloquium is passed after obtaining at least 51% of the points. The colloquium is held at the end of the semester.
Laboratory classes: based on an assessment of the current progress in the implementation of tasks from the instructions.
Project: assessment based on a report prepared for the project, discussion and defense of the project.
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.

Programme content

The program covers issues related to the characteristics and importance of designing technological processes used in the manufacturing industry, as a stage of technical preparation of production. The issues discussed include the structure of the technological process, definitions of basic concepts, discussion of the role of the designer/technologist, as well as the methods and tools used in the field of CAx systems.

Course topics

Lecture:
1. Introduction to designing technological processes.
2. Manufacturing technologies in the automotive industry.
3. Structure of the technological process.
4. Methods and tools used in the process of designing the technological process.
5. Standardization of the technological process.
6. Computer systems supporting the design of technologies.
7. Designing the technological process in selected industries.
Laboratory classes:
1. Tasks on the operation of a selected CAx class system according to the instructions.
Project:
1. Preparation of a technological process project on a selected example.

Teaching methods

Lecture: multimedia presentation illustrated with examples.
Laboratory classes: practical exercises, solving problems at a computer station.
Project: individual or team work, design consultations.

Bibliography

Basic:
1. T. Dobrzański, Rysunek Techniczny Maszynowy, WNT, Warszawa 2021
2. J. Bajkowski, J.M Bajkowski, Podstawy Zapisu Konstrukcji, PWN, Warszawa 2019
3. Pikoń A., AutoCAD 20214 PL. Pierwsze kroki, Helion, 2023 Gliwice
4. Feld M., Podstawy projektowania procesów technologicznych typowych części maszyn, WNT, Warszawa 2003,
5. Gawilk E., Gil S., Zagórski K., Projektowanie procesów technologicznych obróbki skrawaniem, AGH 2019

Additional:
1. Jaskulski A., Autodesk Inventor 2020 PL, Podstawy metodyki projektowania, Wydawnictwo Naukowe PWN, Warszawa 2019
2. T. Dobrzański, Rysunek Techniczny Maszynowy, WNT, Warszawa 2021
3. M. Sydor, Wprowadzenie do CAD. Podstawy komputerowo wspomaganego projektowania, PWN, 2019

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	47	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	53	2,00