COURSE DESCRIPTION CARD - SYLLABUS

Course name
Machine technology

Course

Field of study
Construction and Exploitation of Means of Transport

Year/Semester
1/2

Area of study (specialization)

Profile of study
general academic

Level of study
Second-cycle studies

Course offered in
polish

Form of study
part-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes

Other (e.g. online)

Tutorials
15

Projects/seminars

Number of credit points

4

Lecturers

Responsible for the course/lecturer:
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Wydział Inżynierii Mechanicznej

ul. Piotrowo 3A, 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

basic knowledge in the field of materials science, machine construction, manufacturing techniques

Course objective

Understanding the basic issues related to the design of technological processes for the production of machine parts and assembly

Course-related learning outcomes

Knowledge

1. The student should characterize the life phases of technical objects - [K2A_W11]

2. The student should be able to define the concepts of the production process, technological process and its components - [K2A_W11]

3. The student should explain the basic concepts of technological equipment - [K2A_W11]

4. The student should be able to select the data for the design of the technological process - [K2A_W11]

5. The student should characterize the factors describing the surface layer - [K2A_W11]

6. The student should characterize the basic factors of technological and operational quality - [K2A_W11]

7. The student should characterize the methods of computer aided design and implementation of technological processes

Skills

1. The student is able to choose a semi-finished product to produce the indicated machine part - [K2A_U06]

2. The student is able to determine machining allowances - [K2A_U06]

3. The student is able to determine the time standard for a technological operation - [K2A_U11]

4. The student is able to develop a technological process for selected classes of parts - [K2A_U11]

5. The student is able to provide the concept of technological equipment for a technological operation - [K2A_U11]

Social competences

1. The student is able to work in a group - [K2A_K03]

2. The student is aware of the role of machine technology in the machine life cycle - [K2A_K06]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: Exam on the basis of a written test consisting of 4 questions graded on a scale from 0 to 1. Passing if a minimum of 2.4 points is obtained.

Laboratory: Credit based on a project developed during the exercises

Programme content

General introduction to machine technology. The phases of the existence of a technical object. The essence of machine technology. New trends in machine technology. Production process. Technological process. Technological documentation. Input data for the design of the technological process. Semi-finished products. Technical standard of working time. Machining bases. Surpluses. Machining accuracy, errors. Product quality. The surface layer and its shaping factors. Technological instrumentation. Costs.

Technological construction. Assembly. Designing technological processes of typical machine parts. Elements of computer-aided design of technological processes.

Teaching methods

Exercises:

1 Methodology for calculating the technical time standard, including examples

2 Methodology of designing special holders with examples

3 Methodology of designing the technological process of manufacturing machine parts

4 Development of the technological process of the indicated machine part

Bibliography

Basic

1. Feld M., Projektowanie i automatyzacja procesów technologicznych części maszyn, WNT, Warszawa,

2. Feld M., Projektowanie procesów technologicznych typowych części maszyn, WNT, Warszawa,

3. Feld. M., Podstawy projektowania procesów technologicznych typowych części maszyn, WNT, Warszawa,

4. Praca zbiorowa: Poradnik inżyniera. Obróbka skrawaniem t. I□III, PWN, Warszawa,

5. Wołk R., Normowanie pracy na obrabiarkach do obróbki skrawaniem, WNT, Warszawa,

Additional

1. Feld M., Technologia budowy maszyn, PWN, Warszawa 2003.

2. Tymowski J. lub Puff T. lub Kornberger Z. lub Kiepuszewski B., Technologia budowy maszyn,

3. Dobrzański T., Rysunek techniczny maszynowy, WNT, Warszawa,

4. Skarbiński M., Skarbiński J., Technologiczność konstrukcji maszyn, WNT, Warszawa,

5. Siecla R. Materiały pomocnicze do projektowania procesów technologicznych (materiały wyjściowe i naddatki technologiczne), Wyd. PP, Poznań 1993, skrypt nr 1747.

Breakdown of average student's workload

	Hours	ECTS
Total workload	60	2,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	30	1,0

[1] delete or add other activities as appropriate