COURSE DESCRIPTION CARD - SYLLABUS

Course name

Machine technology

Course

Field of study

Mechanical and Automotive Engineering

Year/Semester

2/2

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

9

Laboratory classes

Other (e.g. online)

Tutorials

9

Projects/seminars

Number of credit points

2

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

Has knowledge of the principles of safety and ergonomics in the design and operation of machines and the threats that machines pose to the natural environment.

Has extensive knowledge of modern machine manufacturing technologies in the field of designing the production process of machine parts and their assembly using computer CAM tools

He has in-depth knowledge of the construction, principles of operation and classification of machines from a selected group.

Skills

He can correctly select the optimal material and its processing technology for typical parts of working machines, taking into account the latest achievements in material engineering.

Can program the technological process of manufacturing machine parts, including the development of a simple program to control the machine tool.

He can advise on the selection of machines for the technological line as part of the specialization.

He can design the technology of exploitation of a selected machine with a high degree of complexity.

Social competences

It is ready to fulfill social obligations, inspire and organize activities for the benefit of the social environment.

Is willing to think and act in an entrepreneurial manner.

Is ready to fulfill professional roles responsibly, taking into account changing social needs, including:

- developing the professional achievements,

- maintaining the ethos of the profession,

- observing and developing the rules of professional ethics and acting towards the observance of these rules.

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	30	2,0
Classes requiring direct contact with the teacher	18	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	12	1,0

[1] delete or add other activities as appropriate