



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Machine Technology and Design of Production Processes 2

### Course

Field of study

Engineering Management

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

3/5

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

### Number of hours

Lecture

15

Tutorials

Laboratory classes

15

Projects/seminars

15

Other (e.g. online)

### Number of credit points

4

### Lecturers

Responsible for the course/lecturer:

Ph.D., D.Sc., Eng. Józef Gruszka, University

Professor

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Phone: 665 33 77

Responsible for the course/lecturer:

Faculty of Engineering Management

ul. J. Rychlewskiego 2, 60-965 Poznań

### Prerequisites

Basic knowledge about the life cycle of machines



Has knowledge of technologies used in the construction and operation of machines (sem. 4)

### Course objective

-The aim of the course is to familiarize students with theoretical and practical issues in the field of manufacturing techniques applied in the machine industry, with particular emphasis on market economy conditions.

- developing a project on machine technology

### Course-related learning outcomes

#### Knowledge

has basic knowledge of machine life cycle[P6S\_WG\_14]

knows the basic methods, techniques, tools and materials used to solve simple engineering tasks in the field of machine construction and operation [P6S\_WG\_16]

knows typical industrial technologies, knows in depth the technologies of machine construction and operation[P6S\_WG\_17]

#### Skills

can make a critical analysis of the technological processes of machine production and organization of production systems[P6S\_UW\_13]

is able to identify design tasks and solve simple design tasks in the field of machine construction and operation[P6S\_UW\_14]

can apply typical methods to solve simple problems in the field of machine construction and operation[P6S\_UW\_15]

is able to design the construction and technology of simple machine parts and subassemblies, and design the organization of first-degree complexity production units [P6S\_UW\_16 ]

#### Social competences

is aware that creating products that meet the needs of users requires a systematic approach taking into account technical, economic, marketing, legal, organizational and financial issues[P6S\_KO\_02]

is aware of the importance and understands the non-technical aspects and effects of engineering activities, including its impact on the environment, and the associated responsibility for the decisions taken[P6S\_KR\_01]

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formative assessment:

a) in terms of laboratories: on the basis of an assessment of the current progress of the tasks.



b) in lectures: on the basis of answers to questions about material modified in previous lectures.

Summary:

a) lecture - written test on the basis of previously prepared questionnaire

b) written laboratory pass.

### Programme content

lectures:

- Introduction to the subject of lectures.
- The outline of metallurgy,
- Molding,
- Plastic working,
- Plastic processing,
- Welding,
- Thermal treatment,
- Routing and hand-
- Machining (turning, planing, chiseling, tugging, drilling, tapping, milling, boring, - Abrasive).

Laboratories: Getting acquainted with production techniques in the conditions of production plants

### Teaching methods

lectures; monographic with the use of a computer with the division of the content of the program into separate thematic issues in connection with the subject of the laboratory

Laboratories: visits to production plants in the scope of selected technological processes

Project - Stage verification of the project

### Bibliography

Basic

1. red. Erbel J. Encyklopedia technik wytwarzania stosowanych w przemyśle maszynowym tom I i II Oficyna Wydawnicza PW W-wa 2001
2. Szreniawski J. Techniki wytwarzania. Odlewnictwo. PWN Warszawa 1989
3. Szweyger M Metalurgia skrypt PP Poznań 1993



4. Sikora R. Przetwórstwo tworzyw wielkocząsteczkowych Wyd. Żak W-wa 1993
5. Gruszka J. Studium rozwoju technologii produkcji tulei cylindrowych. Monografia- Modelowanie warstwy wierzchniej s.53-66,Wydawca IBEN Gorzów Wlkp.,2014

Additional

1. Feld M. Technologia budowy maszyn WNT W-wa 2004
2. Gruszka J.Światowe tendencje w technologii produkcji tulei cylindrowych. Silniki Spalinowe nr 3,2011

**Breakdown of average student's workload**

	Hours	ECTS
Total workload	100	4,0
Classes requiring direct contact with the teacher	50	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests, project preparation) <sup>1</sup>	50	2,0

<sup>1</sup> delete or add other activities as appropriate