



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Machine Technology and Design of Production Processes

### Course

Field of study

Safety Engineering

Year/Semester

2 / 4

Profile of study

general academic

Course offered in

polish

Requirements

elective

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

### Number of hours

Lecture

15

Laboratory classes

15

Other (e.g. online)

Tutorials

15

Projects/seminars

### Number of credit points

5

### Lecturers

Responsible for the course/lecturer:

dr hab. inż. Józef Gruszka, prof.PP

email: [jozef.gruszka@put.poznan.pl](mailto:jozef.gruszka@put.poznan.pl)

tel. 665 33 77

Responsible for the course/lecturer:

ul. Jacka Rychlewskiego 2, 60-965 Poznań

### Prerequisites

Basic knowledge about the life cycle of machines

### 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.

### Course-related learning outcomes

Knowledge



P6S\_WG\_01 knows issues related to engineering issues (physics, chemistry, materials science, manufacturing technologies, material strength, mechanics)

P6S\_WG\_06 knows the issues of the life cycle of products, devices, facilities, systems and technical systems

P6S\_WK\_03 knows development trends and best practices in the field of security engineering

#### Skills

P6S\_UW\_01 is able to properly select the sources and information derived from them, making an assessment, critical analysis and synthesis of this information

P6S\_UW\_06 is able to critically analyze the functioning and assess - in conjunction with the Safety Engineering existing technical solutions, in particular machines, devices, objects, systems, processes and services

#### Social competences

P6S\_KK\_03 is aware of the understanding of non-technical aspects and effects of engineering activities, including its impact on the environment and the associated responsibility for the decisions taken

#### 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

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

### 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	125	5,0
Classes requiring direct contact with the teacher	45	4,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	80	1,0

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