



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Control of manufacturing processes

### Course

Field of study

Management and production engineering

Area of study (specialization)

Production systems

Level of study

Second-cycle studies

Form of study

part-time

Year/Semester

2/4

Profile of study

general academic

Course offered in

polish

Requirements

elective

### Number of hours

Lecture

20

Laboratory classes

Other (e.g. online)

Tutorials

20

Projects/seminars

### Number of credit points

4

### Lecturers

Responsible for the course/lecturer:

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Responsible for the course/lecturer:

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Faculty of Mechanical Engineering

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### Prerequisites

Basic knowledge in the field of machine building, material processing technology, physical measurement methods.

### Course objective

Understanding the possible methods of controlling manufacturing processes in waste-free technologies.

### Course-related learning outcomes

Knowledge

1. Student should identify processes of production of products without technology.
2. Student should explain the processes taking place during production of products.



3. The student should choose methods of controlling the processes of production of products.

#### Skills

1. Student is able to analyze the course of the manufacturing process.
2. Student can define possible causes of disturbances in the process of manufacturing the product and can propose the necessary changes in the production system.
3. Student can choose the technological parameters of the manufacturing process.
4. Student can control the production process.

#### Social competences

1. Student is aware of the role of manufacturing processes in economy and human life.
2. Student shows active attitude in creation of product manufacturing processes.
3. Student is determined to achieve his goals.
4. Student is able to evaluate the quality and economics of product manufacturing processes.

#### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture:

Written examination at the end of the semester (credit at least 50.1% correct answers). To 50.0% - 2 (F), from 50.1% to 60.0% - 3 (E) from 60.1% to 70.0% - 3.5 (D) from 70.1% to 80% 4.0(C) from 80.1% to 90.0% - 4.5 (B), from 90.1% - 5.0 (A).

Exercise:

Assignment based on the report of each exercise as instructed by the instructor (positive assessment of all exercises).

Project:

Assignment based on the evaluation of an individual or group project.

#### Programme content

Lecture:

1. Manufacturing processes used in plastics processing and molding technologies.
2. Phenomena occurring as a result of various product manufacturing processes.
3. Specificity of individual manufacturing processes and their applicability in industrial practice.
4. Influence of technological parameters of manufacturing processes on properties of products obtained.



Exercise:

1. Selection of manufacturing technology according to the requirements of the product.
2. Selection of technological parameters for different manufacturing processes.
3. Selection of machines, equipment and tools for the implementation of the selected manufacturing process.

Project:

1. Development of a technological process for the execution of a selected metal product or from polymeric materials.
2. Selection of materials and technological parameters for the selected manufacturing process.
3. Selection of machines and technological devices for the production of the selected product.

Teaching methods

Lecture: multimedia presentation illustrated with examples given on the board, solving problems.

Project: problem solving, practical exercises, discussion, workshops, integration games, case studies

Exercises: solving practical problems, searching for sources, team work, discussion.

Bibliography

Basic

1. Praca zbiorowa. Poradnik „Tworzywa sztuczne”, WNT, Warszawa 2006
2. A. Tabor , Odlewnictwo, Wyd. Politechniki Krakowskiej , Kraków 2007

Additional

1. Haponiuk J.T.; Tworzywa sztuczne w praktyce; Wyd. Verlag Dashofer, Warszawa 2008
2. M.Perzyk i inni , Materiały do projektowania procesów odlewniczych, PWN Warszawa 1990

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,0
Classes requiring direct contact with the teacher	40	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	60	2,0

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