



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Material processing control [N1ZiIP2>SPPM]

### Course

Field of study

Management and Production Engineering

Year/Semester

3/6

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

part-time

Requirements

elective

### Number of hours

Lecture

8

Laboratory classes

16

Other

0

Tutorials

0

Projects/seminars

0

### Number of credit points

3,00

### Coordinators

### Lecturers

### Prerequisites

Basic knowledge acquired during studies in the field of basic manufacturing technology, machine construction, material processing technology, including methods of selection and measurement of physical quantities.

### Course objective

Learning about possible methods of material processing with particular emphasis on the control of manufacturing processes.

### Course-related learning outcomes

Knowledge:

1. The student is able to identify the processes of manufacturing products in basic waste and non-waste technologies.
2. The student is able to explain the processes occurring during the manufacturing of products.
3. The student is able to select methods of controlling the manufacturing processes of products.

Skills:

1. The student is able to analyze the course of the manufacturing process.
2. The student is able to define possible causes of disruptions in the course of material processing.

3. The student is able to select technological parameters of the manufacturing process.
4. The student knows the basic principles and methods of controlling the manufacturing process.

Social competences:

1. The student is aware of the role of manufacturing processes in the economy and human life.
2. The student demonstrates an active attitude in creating manufacturing processes.
3. The student is able to assess the quality and cost-effectiveness of manufacturing processes.
4. The student is determined to achieve the goals set for him.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: Credit based on a written exam consisting of general questions (credit if at least 3 questions are answered correctly. Assignment of grades to percentage ranges of results: <90-100> very good; <80-90) good plus; <70-80) good; <60-70) satisfactory plus; <50-60) satisfactory; <0-50) unsatisfactory.) conducted at the end of the semester. It is possible to be exempted from credit based on high grades in laboratory classes.

### Programme content

1. Control of manufacturing processes.
2. Material processing.
3. Selection of technological parameters with regard to control/technological limits.

### Course topics

Lecture:

1. Manufacturing processes used in modern technologies.
2. Phenomena occurring as a result of the implementation of various manufacturing processes.
3. Specificity of individual manufacturing processes and possibilities of their applications in industrial practice.
4. Influence of technological parameters of manufacturing processes on the properties of obtained products.

Exercises:

1. Selection of appropriate manufacturing technologies depending on the final properties of the product and its acceptance conditions.
2. Selection of technological parameters for various manufacturing processes.
3. Selection of machines, devices and tools for the implementation of the selected manufacturing process.
4. Implementation of a case study for various cases of manufacturing process control, taking into account real databases from the industry.

### Teaching methods

Lecture: discussion, multimedia presentation illustrated with examples given on the board, solving selected case study problems.

Laboratories: solving practical and in-depth problems in the field of material processing, searching for sources, teamwork, discussion

### Bibliography

Basic:

1. Banaszak Z., Kłos S., Mleczko J., Integrated management systems, PWE Warsaw, 2011.
2. A. Tabor, Foundry, Cracow University of Technology Publishing House, Cracow 2007.
3. Pfohl H-Ch., Logistic systems. Basics of organization and management, Institute of Logistics and Warehousing Publishing House, Poznań, 2001.
4. Dembińska-Cyran I., Gubała M.: Basics of transport management in examples. Institute of Logistics and Warehousing. Poznań 2003.

Additional:

1. Hamrol A., Quality management with examples. Second Edition, ed. PWN, Warsaw, 2009.

2. Perzyk M., Soroczyński A., Comparison of selected tools for creating engineering knowledge for foundry production, Archives of Foundry Engineering, Katowice, 2008, vol. 8 Issue 3.
3. Lewandowski Jerzy, Skołud Bożena , Plinta Dariusz, Organization of production systems, PWE, Warsaw 2014.

#### Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,00
Classes requiring direct contact with the teacher	24	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	51	2,00