



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Production management [S1ZiLP2>ZaP]

### Course

Field of study

Management and Production Engineering

Year/Semester

2/4

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

full-time

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

15

Other

0

Tutorials

15

Projects/seminars

15

### Number of credit points

5,00

### Coordinators

### Lecturers

### Prerequisites

Has basic knowledge of the fundamentals of enterprise management and the design of technological processes for various manufacturing techniques.

### Course objective

Familiarization with the basic areas of operational production management: production preparation, production planning and control.

### Course-related learning outcomes

Knowledge:

The student knows the characteristics of the production system and process.

The student knows the elements of the production system (production structure, types of production cells).

The student knows the differences between production types (unit, small-batch, serial, mass).

The student knows the basic forms of production organization.

The student knows the basic parameters of production flow.

The student knows the methods of production control in various approaches to the organization of production systems.

#### Skills:

The student is able to design the flow of materials (production) in manufacturing processes

The student is able to propose the form and structure of production organization for different types of production

The student is able to take into account internal and external factors influencing the adoption of specific production capacities

The student is able to calculate the parameters of production flow

The student is able to determine the material demand for the production program

#### Social competences:

Understands the importance of production organization for the functioning of the enterprise

Can independently develop knowledge in the subject

Understands the importance of computerization of production for the functioning of the enterprise

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: Exam based on a colloquium consisting of 10 questions. 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.

Exercises: final colloquium during the last class of the semester. The colloquium consists of 3-4 calculation tasks. Pass threshold 50%. 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.

Lab: passing based on the completion of a report.

Project: presenting the project developed by students (in groups) and a discussion on the work.

### Programme content

Characteristics of the production system and process. Production planning, organization of production processes, production control, production improvement. Production management strategies.

### Course topics

#### Lecture:

Definitions: production system, production process. Production capacity; factors determining production capacity planning. Organizational structure of production processes (form of organization, type of production, types of production structure). The concept of production control. Production control functions. Information in the control system: type of information, accuracy of information. Production planning. Material requirements planning MRP I, inventory model, ordering level. Methods and principles of production scheduling. Methods of intra- and inter-cellular control of material flow.

#### Exercises:

Production capacity. Organization of production stations. Material requirements planning. Production cycles. Indicators of evaluation of production processes.

#### Laboratory:

Simulation classes on the organization of selected forms of production organization: cell, production line. Issues: organization of stations, design of work methods, production documentation, work standardization.

#### Project:

The subject of the project is to design a production system for specific input data related to the assortment and demand for products, technological processes, production resources. The project includes the selection of production resources, the adoption of the type and form of production organization, the design of the production space and the production flow control system (material and information flow).

### Teaching methods

Lecture: Multimedia presentation. Solving tasks. Discussion with the group.

Exercises: solving tasks, practical exercises, discussion, workshops, integration games, case studies.

Laboratory: workshops, discussion, teamwork.

Project: solving practical problems, searching for sources, teamwork, discussion.

## Bibliography

### Basic:

Marek Brzeziński, Organizacja i sterowanie, AW Placet, Warszawa, 2002.

Lewandowski Jerzy, Skołud Bożena, Plinta Dariusz, Organizacja systemów produkcyjnych, PWE, Warszawa 2014r.

Mazurczak Jerzy, Projektowanie struktur systemów produkcyjnych, Politechnika Poznańska, Poznań, 2002.

Edward Pająk, Zarządzanie produkcją. Produkt, technologia, organizacja, PWN, Warszawa, 2006

Waters Donald, Zarządzanie operacyjne, PWN, 2019

Banaszak Z., Kłos S., Mleczko J., Zintegrowane systemy zarządzania, PWE, Warszawa 2011r

### Additional:

Senger Zbigniew, Sterowanie przepływem produkcji, Wydawnictwo Politechniki Poznańskiej, 1998r.

## Breakdown of average student's workload

	Hours	ECTS
Total workload	125	5,00
Classes requiring direct contact with the teacher	62	2,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	63	2,50