



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Management and work organization

### Course

Field of study

Mechatronics

Area of study (specialization)

Level of study

First-cycle studies

Form of study

part-time

Year/Semester

4/8

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

### Number of hours

Lecture

10

Laboratory classes

0

Other (e.g. online)

0

Tutorials

8

Projects/seminars

0

### Number of credit points

1

### Lecturers

Responsible for the course/lecturer:

Phd. Eng. Krzysztof ŻYWICKI

Responsible for the course/lecturer:

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### Prerequisites

The student has basic knowledge about the production and manufacturing processes carried out in the production and service plants of the electromechanical industry

### Course objective

Acquaintance with the basic areas of operational management of production: production preparation, production planning and control, as well as methods of calculating production costs.

### Course-related learning outcomes

Knowledge

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

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



The student knows the differences in types of production (unit, small-lot, serial, Mass)

The student knows the basic forms of organization of production

The student knows the basic parameters of the production flow.

The student knows the methods of production control in different terms, the organization of production systems

#### Skills

The student knows how to design the flow of materials (production) in the production processes

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

The student knows how to take into account internal and external factors affecting the adoption of specific production capacity

The student can design elements of the production structure (form type) and management of production space (system of production cells)

The student knows how to calculate the parameters of the production flow The student is able to determine the need for material production program

#### Social competences

Understands the importance of organizing production for the enterprise

Can independently develop knowledge on the

Understands the importance of computerization of production for the enterprise

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

Learning outcomes presented above are verified as follows:

Lecture: Assessment based on a test consisting of 10 questions (credit for a correct answer for min. 6 questions: <6 - ndst, 6 - dst, 7 - dst + 8 - db, 9 - db +, 10 - vg) carried on the end of the semester.

#### Programme content

Lecture:

Definitions: a production system, production process.

The production capacity; factors determining capacity planning.

The structure organizational processes (form of organization, type of production, types of production structure).



The principles of spatial organization of production systems (lay-out), infrastructure and technical equipment of production systems. Taking into account the situation of project (modernization or development of new systems).

The concept of production control. Functions of production control. The information in the control system. The information in the control system: the type of information, accuracy of information. Production plans and operational. material requirements planning and MRP, inventory model, the level of ordering).

Methods mobile within and between the material flow control.

Tutorials:

Production plans: aggregate and operational. Production capacity. Arrangement of workstations. Production cycles - development of schedules. Planning material requirements. Organization of workstations - 5S.

### Teaching methods

Lecture: multimedia presentation illustrated with examples given on a board, problem solving.

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

### Bibliography

Basic

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

Lewandowski Jerzy, Skołod 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., Mleczo J., Zintegrowane systemy zarządzania, PWE, Warszawa 2011r

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

Additional

Januszewski A., Funkcjonalności informatycznych systemów zarządzania, PWN, Warszawa 2008.

Inżynieria zarządzania, Ireneusz Durlik, AW Placet, Warszawa, 1993



### Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,0
Classes requiring direct contact with the teacher	20	0,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	5	0,5

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