



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Operational production planning and control [S2ZiIP2-STPR>OPISP]

### Course

Field of study

Management and Production Engineering

Year/Semester

1/2

Area of study (specialization)

Production control

Profile of study

general academic

Level of study

second-cycle

Course offered in

Polish

Form of study

full-time

Requirements

elective

### Number of hours

Lecture

30

Laboratory classes

30

Other

0

Tutorials

0

Projects/seminars

15

### Number of credit points

6,00

### Coordinators

dr inż. Paulina Rewers

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### Lecturers

### Prerequisites

The student should have basic knowledge of the operation of a manufacturing company, including production planning and scheduling and the tasks of functional units in the company. He should also be able to identify processes implemented in enterprises and assess their impact on the company's operations as a whole.

### Course objective

The aim of the course is to familiarize the student with advanced methods of production planning and scheduling, the possibilities of IT support for production planning and to enable testing of production flow control solutions dedicated to various forms of production organization in simulation conditions.

### Course-related learning outcomes

Knowledge:

The student knows the concepts of production planning and scheduling.

The student is able to indicate the role of production planning in the organization of an enterprise.

The student has knowledge of advanced production planning and scheduling methods.

The student knows the IT systems used during production planning.

The student knows production control methods from various perspectives of the organization of production systems.

**Skills:**

The student is able to carry out the process of planning and scheduling production.

The student is able to develop a production schedule.

The student is able to conduct a discussion on production planning.

The student is aware of the importance of production planning in the organization of a production company.

The student is able to propose a production control method for a given form of production organization.

**Social competences:**

The student is able to assess the feasibility of the production plan and schedule.

The student is creative in selecting methods and preparing production schedules.

The student understands the impact of the applied production control method on the organization of work in the production plant

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The knowledge and skills acquired during the lecture will be verified on the basis of a final test during the last classes of the semester. The colloquium consists of 5-7 open questions, scored differently.

Passing 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.

The knowledge and skills acquired during project classes will be verified based on the presentation of the completed project during the last class of the semester.

The skills acquired during laboratory classes will be verified by preparing a report on the classes.

## Programme content

Production planning and scheduling, demand forecasting

Production flow control

## Course topics

**Lecture:**

1. Production planning and scheduling - introductory issues, planning and production strategies
2. Demand forecasting, material requirements planning
3. Planning areas, including S&OP, DRP, FAS, etc., advanced production scheduling methods
4. Production flow control in practice (using WBL, KANBAN)
5. Reporting (and visualization) of production data for production planning and control purposes
6. Production flow control in selected enterprises

**Project:**

1. Production plan optimization
2. Production schedule optimization
3. Application of APS class systems
4. Production control methods - debate
5. Organization of production flow - simulation
6. WBL in practice
7. KANBAN in practice

**Laboratories:**

1. Demand forecasting
2. Production planning taking into account production types
3. Production planning taking into account product types: standard/customized/personalized
4. Material requirements planning
5. Advanced production scheduling methods
6. Application of priority rules.
7. Analysis of production data (reporting and visualization)

## 8. Practical control of production flow for different production strategies

### Teaching methods

Lecture: multimedia presentation, discussion, online presentations.

Project: multimedia presentation illustrated with examples given on the board, solving tasks, practical exercises, discussion, workshops, case studies, flipped classroom, Oxford debate.

Laboratories: multimedia presentation, solving practical problems, searching for sources, team work, discussion, simulation game.

### Bibliography

Basic:

Kłos S., Jardzioch A., Kalinowski K.: Organizacja i planowanie produkcji, PWE, Warszawa, 2023

Pajak E.: Zarządzanie produkcją. Produkt, technologia, organizacja. PWN Warszawa 2006

Waters D., Zarządzanie operacyjne, PWN Warszawa 2012

Brzeziński M., Organizacja i sterowanie, Wyd. Placet 2002

Goldratt E.M., Cel I: Doskonałość w produkcji, MINT Books, Warszawa 2017

Additional:

Kulińska E., Busławski A., Zarządzanie procesem produkcji, Wyd. Delfin 2019

Liddell M., Niebieska książeczka o harmonogramowaniu, DSR.S.A 2020

Stadtler H., KilgerCh., editors, Supply Chain Management and Advanced Planning, Springer Berlin 2008

Durlik I., Inżynieria zarządzania, AW Placet, Warszawa 1993

### Breakdown of average student's workload

	Hours	ECTS
Total workload	150	6,00
Classes requiring direct contact with the teacher	77	3,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	73	3,00