



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Production flow control

### Course

Field of study

Management and Production Engineering

Area of study (specialization)

Production Systems

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

4/7

Profile of study

general academic

Course offered in

Polish

Requirements

elective

### Number of hours

Lecture

15

Laboratory classes

15

Other (e.g. online)

Tutorials

Projects/seminars

### Number of credit points

3

### Lecturers

Responsible for the course/lecturer:

Justyna Trojanowska, PhD. Eng.

Responsible for the course/lecturer:

email: justyna.trojanowska@put.poznan.pl

ph. +61 665 5991

Faculty of Mechanical Engineering

Piotrowo Street 3, 60-965 Poznan

### Prerequisites

Student has a fundamental knowledge in the field of production planning and control. Student can logically associate facts and use information obtained from available sources of knowledge. Student understands the need to acquire new knowledge.

### Course objective

An understanding of theoretical and practical issues in the field of production flow control.

### Course-related learning outcomes

Knowledge

Student knows production planning method.



Student knows methods of production scheduling.

Student knows functions of production flow control.

Student knows methods of production flow control in different aspects of organization of production systems.

#### Skills

Student can define the material demand for a production program.

Student knows how to prepare a production schedule for the type and form of production.

Student can design flow of production using kanban system and theory of constraints.

#### Social competences

Understands the importance of production organization for the functioning of a company.

Can independently develop knowledge on the subject.

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

Learning outcomes presented above are verified as follows:

Lecture: Verification of knowledge based on a colloquium consisting of 5 general questions (pass in the case of a correct answer to at least 3 questions) carried out at the end of the semester.

Laboratory: Knowledge and skills verified on the basis of partial reports.

#### Programme content

##### Lecture

Definition of production flow control. Types and forms of production organization. Information in the production flow control system. Types of production plans. Material resource control (optimal purchase, bill of materials, planning of product demand, material requirements planning, inventory model).

Control of production resources (production capacity, economy of scale, orders and production capacity parameters). Operational scheduling; methods of scheduling. Material flow control. Modern methods of production flow control (kanban, just in time, lean manufacturing).

##### Laboratoria

Determination of basic parameters characterizing flow of production. Calculation of inventory in the manufacturing process. Methods of production scheduling. Control of production flow by using pull system and drum-buffer-rope tool.

#### Teaching methods

Lecture: multimedia presentation enriched with film material, case study, crossword.

Laboratory: practical exercises on computers, discussion, workshops.



## Bibliography

### Basic

1. Organizacja i sterowanie, Marek Brzeziński, AW Placet, Warszawa, 2002
2. Zarządzanie produkcją. Produkt, technologia, organizacja, Edward Pająk, PWN, Warszawa, 2006

### Additional

1. Inżynieria zarządzania, Ireneusz Durlik, AW Placet, Warszawa, 1993
2. Cel I: Doskonałość w produkcji, Eliyahu M. Goldratt, MINT Books, Warszawa 2017

## Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,0
Classes requiring direct contact with the teacher	45	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	30	1,0

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