



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Traditional and modern manufacturing systems

### Course

Field of study

Logistics

Area of study (specialization)

Corporate Logistics

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

1/1

Profile of study

general academic

Course offered in

polish

Requirements

elective

### Number of hours

Lecture

30

Tutorials

Laboratory classes

Projects/seminars

30

Other (e.g. online)

### Number of credit points

5

### Lecturers

Responsible for the course/lecturer:

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Responsible for the course/lecturer:

### Prerequisites



The student knows the basic concepts related to the design, implementation and operation of production systems in mechanical engineering industries. He should also be able to obtain information from specified sources and be willing to cooperate as part of a team.

### Course objective

Mastering the student's knowledge, skills and social competences related to the essence, scope of application and methods of designing and implementing modern production systems.

### Course-related learning outcomes

#### Knowledge

1. dependencies in the given area and their relations with logistics [P7S\_WG\_01]
2. issues in the field of production engineering and its connections with the field of logistics [P7S\_WG\_02]
3. extended concepts for logistics and its detailed problems and supply chain management [P7S\_WG\_05]
4. detailed methods, tools and techniques characteristic for studied subject on the course of logistics [P7S\_WK\_01]

#### Skills

1. collect on the basis of the literature of the subject and other sources (in Polish and English) and in an orderly manner, provide information on the problem within the framework of logistics and its specific issues and supply chain management [P7S\_UW\_01]
2. communicate using appropriately selected resources in a professional environment and in other environments as part of logistics and its specific issues as well as supply chain management [P7S\_UW\_02]
3. assess the suitability and the possibility of using new achievements (techniques and technologies) in the field of logistics and functionally related areas [P7S\_UW\_06]
4. formulate and solve tasks through interdisciplinary integration of knowledge from different fields and disciplines used to design logistics systems [P7S\_UO\_01]

#### Social competences

1. recognize causal relationships in achieving the set goals and grading the significance of alternative or competitive tasks [P7S\_KK\_01]
2. responsibility for own work and readiness to comply with the rules of working in a team and taking responsibility for the tasks carried out jointly [P7S\_KR\_01]

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:  
assessment based on a team-developed project,



grade based on written credit (exam)

### Programme content

The lecture begins with a reminder of typical production system design methods and techniques used in classic production systems - the balance model and assembly line balancing model, and the classification of classic production units according to the American-European model. Next, the methods of designing production systems according to the JiT concept (0 inventory), lean production systems and agile production systems are discussed.

During design classes, students design, according to the teacher's instructions, a selected production system

### Teaching methods

1. Lecture: multimedia presentation, illustrated with examples on the board.
2. Projects: multimedia presentation illustrated with examples given on the board and performance of tasks given by the teacher.

### Bibliography

#### Basic

1. Sure D.R., Manufacturing Facilities. Location, Planning and Design , third edition, CRC Press, Taylor & Francis Group, Boca Raton, London, New York, 2009
2. Fertsch M., Pawlak N., Stachowiak A., Współczesne systemy produkcyjne, Wydawnictwo Politechniki Poznańskiej, 2011
3. Golińska P., Tradycyjne i nowoczesne systemy produkcyjne, Wydawnictwo Politechniki Poznańskiej, 2011
4. Brzeziński M., Organizacja i sterowanie produkcją. Projektowanie systemów produkcyjnych i procesów sterowania produkcją, Agencja Wydawnicza Placet, Warszawa 2002.
5. Mazurczak J., Projektowanie struktur systemów produkcyjnych, Wydawnictwo Politechniki Poznańskiej, 2002.

#### Additional

1. Podstawy zarządzania produkcją. Ćwiczenia, Kosieradzka A., (red.), Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 2008
2. Boszko j., Struktura organizacyjna przedsiębiorstwa i drogi jej optymalizacji, WNT, Warszawa 1973



### Breakdown of average student's workload

	Hours	ECTS
Total workload	125	5,0
Classes requiring direct contact with the teacher	60	2,5
Student's own work (literature studies, preparation for tests/exam, project preparation) <sup>1</sup>	65	2,5

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