



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Organization of Production and Logistics in Automotive Industry

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### Course

Field of study

Engineering Management

Area of study (specialization)

Year/Semester

3/6

Profile of study

Level of study

First-cycle studies

Form of study

full-time

Course offered in

English

Requirements

elective

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### Number of hours

Lecture

15

Laboratory classes

Other (e.g. online)

Tutorials

15

Projects/seminars

**Number of credit points**

2

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### Lecturers

Responsible for the course/lecturer:

Monika Kosacka-Olejniki Ph.D.,Eng.

Responsible for the course/lecturer:

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### Prerequisites

Basic knowledge of production and logistics organization.

Perception and interpretation skill in case of phenomena occurring in organizations. Know-how in IT tools use in the area of management. Ability to search for information from selected sources.

Awareness of the consequences of the decisions and readiness to take social responsibility for decisions.

Willingness to cooperate in a team.

### Course objective

To introduce students with the essence and basic principles of organization of production and logistics in the automotive industry.

### Course-related learning outcomes

#### Knowledge

has basic knowledge about the vehicle's life cycle and about the relationship between the technical and economic sphere of the organization of production and logistics in the automotive industry

[P6S\_WG\_15]

knows the basic methods, techniques, tools and materials used in solving problems in the field of planning, production control, supply management in the automotive industry, can explain these issues

[P6S\_WG\_16]

knows typical concepts and methods of material flow management in the automotive industry and assembly technologies [P6S\_WG\_17]

#### Skills

is able to formulate and solve tasks through interdisciplinary integration of knowledge from the fields and disciplines used to design logistics systems in the automotive industry [P6S\_UW\_10]

can assess the usefulness and possibility of using new achievements (techniques and technologies) in logistics and areas which are functionally related to the functioning of the automotive industry

[P6S\_UW\_11]

can formulate and test hypotheses in relation to issues in the field of logistics production system design in the automotive industry [P6S\_UW\_12]

can analyze the problem within the organization of production and logistics in the automotive industry [P6S\_UW\_13]

#### Social competences

is aware that the production in the automotive industry requires a systematic approach taking into account technical, economic, marketing, legal, organizational and financial issues [P6S\_KO\_02]



is aware of the importance and understands the non-technical aspects and effects of production and logistics processes from the automotive industry, including the environmental impact and related corporate social responsibility [P6S\_KR\_01]

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture:

1. Presentation in a group of 2-4 people on a topic agreed with the teacher related to the content of the lecture (50 points).
2. Final test during the last class (50 points). The test consists of closed questions, scored differently, depending on the level of difficulty. The issues for the final test are shared with students.

Passing threshold: 51 points.

Tutorials:

As part of the tutorials, students develop problem tasks during class. Tutorials are carried out in groups of 2-3 people or alone, depending on the problem task. Each of the problem tasks, depending on the degree of difficulty and scope of work, is assigned an adequate score. The total score for the tasks is 100 points.

Passing threshold: 51 points.

### Programme content

Lecture:

The lecture begins with the presentation of the state of art of the the automotive industry in Poland and around the world, and the history of the development of the automotive industry, presenting current industry trends. Then the car is presented as an industrial product (complexity, technologies used, basic assemblies). The car design process is discussed. Typical assembly systems, assembly line organization and organization of the car manufacturing plant are presented. The process of planning and controlling production in a car manufacturing plant is discussed. The process of planning material requirements in the production of cars is presented. Various supply options are discussed, including JIT, JIS. Possible vehicles recovery options are discussed. In addition, the latest technology in the automotive industry related to the concept of Industry 4.0 are presented.

Tutorials:

The tutorials concern the following problem tasks:

1. Identification of activities, material flows, internal transport means in the vehicels production
2. Monitoring parametres
3. Production planning



4. Disturbance management
5. Supply management
6. Waste identification in the vehicle life cycle
7. Analysis of vehicle recovery options

### Teaching methods

Lecture: informative lecture combined with problem, movie presenting terms related to the scope of course, case study method

Tutorials: tutorial method, brainstorming, games, case study method

### Bibliography

#### Basic

1. Golińska P., Fertsch M., Organizacja produkcji i logistyki w przemyśle samochodowym, Wydawnictwo Politechniki Poznańskiej, 2012 (in polish)
2. Golinska P. (Ed.), Environmental issues in automotive industry, Springer Science & Business Media, 2013

#### Additional

1. Monden Y., Toyota Production System, Industrial Engineering and Management Press, Norcross, USA, 1983
2. Golinska-Dawson P., Kübler F. (Eds.), Sustainability in Remanufacturing Operations, Springer, 2017.
3. Kosacka M., Werner-Lewandowska K. Perspektywy rozwoju sieci recyklingu Pojazdów Wycofanych z Eksploatacji (PWE) w Polsce, Gospodarka Materiałowa i Logistyka, 2017 (in polish)
4. Kosacka-Olejnik, M. (2019). How manage waste from End-of-Life Vehicles?-method proposal. IFAC-PapersOnLine, 52(13), 1733-1737.
5. Andrzejczak B., Outsourcing usług logistycznych w niemieckim przemyśle samochodowym, Ekonomiczne problemy usług, 131(2/2), 2018, s. 9-17.
6. Meißner H. R., Łuka P., Woźniak H., Problematyka innowacji w łańcuchach dostaw (na przykładzie przemysłu motoryzacyjnego w Polsce), Logistyka, 6/2014, s. 12876-12890.
7. Andrzejczak B., Logistyka sieci dostaw w niemieckim przemyśle samochodowym, Ekonomiczne Problemy Usług, 126(1/1), 2017, s. 19-26.
8. Pałucha K., Proces realizacji zamówień klienta w przemyśle samochodowym. Zeszyty Naukowe. Organizacja i Zarządzanie/Politechnika Śląska, 120/2018, s. 153-162.



9. Janczewski J., Wybrane problemy logistyki zwrotnej w branży usług motoryzacyjnych, ZlwGiB, 1(14), 2012, s. 131-142.

### Breakdown of average student's workload

	Hours	ECTS
Total workload	60	2,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (preparation for final test from lecture, preparation a presentation for lecture, preparation for class, consultation) <sup>1</sup>	30	1,0

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