



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Logistics for operating of technical systems

### Course

Field of study

Logistics

Area of study (specialization)

Level of study

First-cycle studies

Form of study

part-time

Year/Semester

4/7

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

### Number of hours

Lecture

8

Tutorials

Laboratory classes

Projects/seminars

8

Other (e.g. online)

### Number of credit points

2

### Lecturers

Responsible for the course/lecturer:

Prof. Józef Fraś, Ph.D., D.Sc., Eng.,

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Faculty of Engineering Management

ul. J. Rychlewskiego 2, 60-965 Poznań

Responsible for the course/lecturer:

### Prerequisites

The student starting this subject should have general knowledge of the basics of logistics, production



processes, and machine construction and operation. He should also be able to obtain information from the indicated sources and be ready to cooperate as part of a team

### Course objective

Providing students with basic knowledge in the logistics of machinery and equipment operation necessary for the correct design and implementation of machinery and equipment maintenance systems in logistics, and developing students' ability to solve problems in the field of technical system operation

### Course-related learning outcomes

#### Knowledge

1. has a basic knowledge of construction, technology and logistics related techniques [P6S\_WG\_01]
2. The student has basic knowledge of logistics and its specific issues related to the operation and management of technical systems in operation [P6S\_WG\_05]
3. has knowledge of the principles of design and implementation of machine maintenance systems [P6S\_WK\_06]
4. has knowledge of modern methods, techniques and tools for managing the maintenance of machinery and equipment in logistics [P6S\_WK\_07]

#### Skills

1. has the ability to design and build a system for maintaining machinery and equipment and its implementation in the enterprise, taking into account the areas of logistics [P6S\_UW\_07]
2. is able to put into practice management and improvement instruments for maintaining machinery and equipment in logistics [P6S\_UW\_03]

#### Social competences

1. understands that knowledge and skills in the field of logistics of technical systems operation is depreciating very quickly and is aware of lifelong learning [P6S\_KK\_02]
2. is willing to cooperate in a team on solving problems within the scope of logistics of machine and device maintenance [P6S\_KR\_02]

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Knowledge acquired during the lecture is verified by one 45-minute colloquium carried out during the 8th lecture. colloquium consists of 5 open questions and 5 test questions, variously scored. Total points to get 100. Passing threshold: 50% of points. Final issues on the basis of which questions are prepared will be sent to students by e-mail using the university e-mail system

Skills acquired as part of the project classes are verified on the basis of the developed project. Total points to get 100. Passing threshold: 50% of points.

### Programme content



Lecture: Basic concepts, introduction to the field of operation logistics. Factors of choosing machines and devices. Machine operation documentation. Types and characteristics of maintenance and repair works. Systems of caring for the machine park - classic. TPM - Total Productive Maintenance. RCM - Reliability Centered Maintenance. Division of works in operational logistics. Materials management of exploitation logistics. Construction of the operation logistics subsystem. Time horizons for planning maintenance functions. Renovation cycles, components, transferring cycles to renovation plans. Renovation planning and demand for production capacity. Supply logistics for spare parts for repairs. Classification of the causes of failure. Selection of care systems, use of ABC / XYZ analysis in operational logistics

Project: Students design a system for maintaining machines in the machine park defined by the teacher

### Teaching methods

1. Lecture: multimedia presentation, illustrated with examples on the board
2. Project - team implementation of a project task

### Bibliography

#### Basic

1. Frąś J., Zarządzanie i logistyka eksploatacji maszyn, Wydawnictwo Naukowe Politechniki Poznańskiej, Poznań 2021.
2. Legutko S., Eksploatacja maszyn, Wydawnictwo Politechniki Poznańskiej, Poznań 2007.
3. Słowiński B., Inżynieria eksploatacji maszyn, Wydawnictwo Naukowe Politechniki Koszalińskiej, Koszalin 2014.

#### Additional

1. Hirano Hiroyuki, JIT Factory Revolution, Productivity Press, Portland, Oregon, 1988.
2. Moubrey J., Maintenance Management ? A New Paradigm, Maintenance 11, 1996.
3. Frąś J., Normalizacja i zarządzanie jakością w logistyce, Wydawnictwo Naukowe Politechniki Poznańskiej, Poznań 2015.
4. Frąś J., Kompleksowe zarządzanie jakością w logistyce, Wydawnictwo Naukowe Instytutu Technologii Eksploatacji w Radomiu, Radom 2013.



### Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	16	1,0
Student's own work (literature studies, preparation for lecture and project, preparation for tests, project preparation) <sup>1</sup>	34	1,0

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