



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Construction and operation of machines [S1Log2>BiEM]

### Course

Field of study

Logistics

Year/Semester

1/2

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

full-time

Requirements

elective

### Number of hours

Lecture

15

Laboratory classes

0

Other

0

Tutorials

0

Projects/seminars

0

### Number of credit points

1,00

### Coordinators

dr Katarzyna Kalisz-Szwedzka

katarzyna.kalisz-szwedzka@put.poznan.pl

### Lecturers

### Prerequisites

Basic knowledge of technique.

### Course objective

To familiarize students with the basic principles of construction, operation and operation of general purpose machines and equipment, which are equipped in an industrial plan.

### Course-related learning outcomes

Knowledge:

1. The student knows the basic issues of construction of machines related to logistics [P6S\_WG\_01]
2. knows the basic issues of mechanics, construction and operation of machines related to logistics [P6S\_WG\_02]

Skills:

1. The student is able to apply appropriate analysis techniques to solve a problem related to the construction and operation of machines [P6S\_UW\_03]
2. The student is able to identify changes in requirements, standards and regulations in the field of

machine construction and operation [P6S\_UU\_01]

Social competences:

1. The student is aware of initiating activities related to the formulation and transfer of information about the proper operation of machines [P6S\_KO\_02]
2. The student is aware of cooperation and team work to solve problems related to the operation of machines [ P6S\_KR\_02]

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: Formative assessment: on the basis of answers to questions about material modified in previous lectures. Summary assessment: written test on the basis of previously prepared questionnaire.

### Programme content

Lecture: The genesis of the science of machine construction and operation, Phases of the existence of a technical object, theories of operation. Rules for the construction and operation of equipment. Use of devices. Elements of tribology, friction, wear, surface layer lubrication, Basic issues related to reliability, quality and durability. Machine diagnostics. Types of diagnostic tests. Operation of machinery and equipment related to logistics, Operation of means of transport and storage equipment.

### Course topics

Lecture: The genesis of the science of machine construction and operation, Phases of the existence of a technical object, theories of operation. Rules for the construction and operation of equipment. Use of devices. Elements of tribology, friction, wear, surface layer lubrication, Basic issues related to reliability, quality and durability. Machine diagnostics. Types of diagnostic tests. Operation of machinery and equipment related to logistics, Operation of means of transport and storage equipment.

### Teaching methods

Lecture: monographic with the use of a computer with the division of the content of the program into separate thematic issues in connection.

### Bibliography

Basic:

1. Kijewski J., Maszynoznawstwo, WSiP, Warszawa 2011.
2. Dąbrowski Z., Pakowski R., Maszynoznawstwo, Warszawa 2013.
3. Legutko S., Podstawy eksploatacji maszyn i urządzeń, WSiP, Warszawa 2004.
4. Gruszka J., Technologiczne kształtowanie cech funkcjonalnych warstwy wierzchniej tulei cylindrowych (w silnikach spalinowych), Wydawnictwo Politechniki Poznańskiej, Poznań 2012.

Additional:

1. Legutko S., Eksploatacja maszyn, Wydawnictwo Politechniki Poznańskiej, Poznań 2007.
2. Rutkowski A., Części maszy, WSiP, Warszawa 1992.

### Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	15	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	10	0,50