COURSE DESCRIPTION CARD - SYLLABUS

Course name
Technological machines [S1Log2>MT]

Course

Field of study
Logistics

Year/Semester
2/4

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
15

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

Basic knowledge of materials science, machine construction, manufacturing techniques. The student has the ability to think logically, use information obtained from literature and the Internet. Student understands the need to learn and acquire new knowledge.

Course objective

Understanding the construction and operating principles of popular and operating machines and technological devices.

Course-related learning outcomes

Knowledge:
1. Student knows the basic issues of construction, technology and techniques related to logistics [P6S_WG_01]
2. Student knows the basic issues of mechanics, construction and operation of machines related to

logistics [P6S_WG_02]

Skills:
1. Student is able to use appropriate experimental and measurement techniques to solve the problem, including computer simulation in the construction and operation of machines [P6S_UW_03]
2. Student is able to select appropriate tools and methods to solve a problem within the framework of construction and technology, as well as use them effectively [P6S_UO_02]
3. Student is able to identify changes in requirements, standards, regulations, technical progress and labor market reality in the context of technological machines, and on their basis determine the need to supplement knowledge [P6S_UU_01]

Social competences:
1. Student is able to cooperate in a group; is willing to cooperate and work in a group to solve problems in the field of technique and technology [P6S_KR_02]
2. Student is aware of the role of machine technology in the machine's life cycle [P6S_KO_02]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: Knowledge acquired during the lecture is verified by two 45-minute colloquia carried out during the 7th and 15th lectures. Each test consists of 5 questions (test and open), variously scored. Passing threshold: 50% of points. Final issues on the basis of which questions are prepared will be forwarded to students during the lecture preceding the colloquium.
Laboratory: Credit based on an oral or written answer regarding the content of each laboratory exercise, report on each laboratory exercise as directed by the laboratory exercises. All exercises must be passed in order to pass the laboratories (positive assessment of responses and reports).

Programme content

Lecture: General introduction to machine technology. The phases of the existence of a technical object. The essence of technological machines. New trends in the construction of technological machines. Accuracy of forming machining on technological machines, Construction and principle of operation of popular technological machines. Technological instrumentation. Costs. Technologicality of the structure. Elements of computer-aided design of technological machines.

Laboratory:
Construction and operation of injection molding machines.
Construction and operation of extruders.

Construction and operation of eccentric presses.
Construction and operation of press brakes.
Construction and operating principle of automation devices

Course topics

Lecture: General introduction to machine technology. The phases of the existence of a technical object. The essence of technological machines. New trends in the construction of technological machines. Accuracy of forming machining on technological machines, Construction and principle of operation of popular technological machines. Technological instrumentation. Costs. Technologicality of the structure. Elements of computer-aided design of technological machines.

Laboratory:
Construction and operation of injection molding machines.
Construction and operation of extruders.

Construction and operation of eccentric presses.
Construction and operation of press brakes.
Construction and operating principle of automation devices (feeders, sheet metal unwinders)

Teaching methods

Lecture: informative lecture.
Laboratory: laboratory method.

Bibliography

Basic:
1. Golatowski T., Prasy mechaniczne: Konstrukcja, eksploatacj i modernizacja, WNT, Warszawa 1970.
2. Tomczak J., Bartnicki J., Maszyny i urządzenia do obróbki plastycznej, Politechnika Lubelska, Lublin 2012.
3. Boczarow J.A., Prasy śrubowe, WNT, Warszawa 1980.
4. Praca zbiorowa, Prasy mechaniczne stosowane w tłocznictwie, WNT, Warszawa 1959.
5. Kosmol J., Automatyzacja obrabiarek skrawających, WNT, Warszawa 1996 i późniejsze.
6. Wilczyński K., Przetwórstwo tworzyw sztucznych, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2000.
7. Kucharczyk W.,, Żurowski W., Przetwórstwo tworzyw sztucznych dla mechaników, Wydawnictwo Politechniki Radomskiej, Radom 2005.

Additional:
1. Romanowski W.P., Poradnik obróbki plastycznej na zimno, WNT, Warszawa 1976.
2. Czasopisma: PlasticsEurope, Journal of Plastics Technology (Kunststoffe), Polimery (Polymers-Warsaw), CompositesWorld.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	20	1,00