COURSE DESCRIPTION CARD - SYLLABUS

Course name
Fundamentals of Working Machines Exploitation [S2MiBP1-MR>PEMR]

Course

Field of study
Mechanical and Automotive Engineering

Year/Semester
1/1

Area of study (specialization)
Heavy-duty Machines

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
0

Other
0

Tutorials
15

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

KNOWLEDGE: the student has basic knowledge about the construction of the surrounding world and the laws that govern it SKILLS: the student is able to integrate the obtained information, interpret it, extract it conclusions, formulate and substantiate opinions SOCIAL COMPETENCES: the student is aware of the social and economic importance of protection environment

Course objective

Understanding the basic processes of use and refurbishment of working machines in the aspect of maximization their productive use.

Course-related learning outcomes

Knowledge:
He has in-depth knowledge of the construction, principles of operation and classification of machines from a selected group.
Has extended knowledge of the standards for working machines in the field of methods of calculating and testing machines, safety, including road safety, environmental protection as well as mechanical and electrical interface.

He knows the main development trends in the field of mechanical engineering.

Skills:
He can estimate the cost of making a working machine or a vehicle with a high degree of complexity from a selected group of machines.
Can plan and carry out experimental research of specific processes taking place in machines and routine tests of a working machine or a vehicle from a selected group of machines.
He can design the technology of exploitation of a selected machine with a high degree of complexity.

Social competences:
He is ready to critically assess his knowledge and received content.
Is ready to recognize the importance of knowledge in solving cognitive and practical problems and to consult experts in case of difficulties in solving the problem on its own.
It is ready to initiate actions for the public interest.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
Assessment of discussions and activity during classes. Passing the written exam.

Programme content

Operation processes of working machines. Operational properties of machine elements and their surface. Wear processes of working machines and their elements. Issues related to use of working machines. Elements of technical diagnostics. Object renovation processes technical.

Course topics

Operation of working machines. Methods of calculating the costs of consumption of consumables. Diagnostics of machines and devices.

Teaching methods

1. Lectures with multimedia presentation
2. Materials to help in the implementation of lectures in the form of pdf, video or presentation

Bibliography

Basic
1. Legutko S. (2004): Podstawy eksploatacji maszyn i urządzeń roboczych. Wyd. WSIP
2. Dwiliński L. (2006): Podstawy eksploatacji obiektu technicznego. Wyd. Oficyna Wydawnicza Politechniki Warszawskiej
3. Napiórkowski J., Drożyner P., Mikołajczak P., Rychlik A., Szczyglak P., Ligier K. (2013): Podstawy budowy i eksploatacji pojazdów i maszyn. Wyd. Uniwersytet Warmińsko-Mazurski
Additional
1. Buchwald, T., & Staszak, Ż. (2013). Analiza realizacji przeglądów technicznych ciągników rolniczych. Inżynieria Rolnicza, 17.
2. Buchwald, T., & Staszak, Ż. (2013). Comparative analysis of the selected processes of the technical service of agricultural machines. Agricultural Engineering, 3(145), 9-16.
3. Rzeznik, C., Rybacki, P., Staszak, Z., & Durczak, K. (2012). Parametry wyjściowe procesu diagnozowania
ciągnika rolniczego. Technika Rolnicza Ogrodnicza Leśna, (04).
4. Staszak, Ż., & Buchwald, T. (2015). Ocena informacji uzyskanej podczas diagnostyki ciągnika rolniczego. Nauka Przyroda Technologie, 9(2), 26.
5. Grześ, Z., Rybacki, P., & Rzeźnik, C. Problemy serwisu technicznego maszyn rolniczych. Nauka Przyroda
Technologie, 11(1), 9.

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