POZNAN UNIVERSITY OF TECHNOLOGY



EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

COURSE DESCRIPTION CARD - SYLLABUS

Course name

Tractors and mobile machines [N1MiBP1>CiMM]

Course				
Field of study Mechanical and Automotive Engineering		Year/Semester 3/6		
Area of study (specialization)		Profile of study general academi	с	
Level of study first-cycle		Course offered ir Polish	١	
Form of study part-time		Requirements elective		
Number of hours				
Lecture 9	Laboratory class 18	es	Other 0	
Tutorials 0	Projects/seminar 0	rs		
Number of credit points 3,00				
Coordinators dr inż. Konrad Włodarczyk		Lecturers		

Prerequisites

Knowledge: The student has basic knowledge of the theory of mechanisms, strength of materials, material engineering, technical mechanics and mechanics of dispersed media. Skills: The student is able to obtain information from the literature on the current state of technology development in the field of construction and operation of agricultural machines. Social competences: The student is able to cooperate in a group and shows independence in solving problems, acquiring and improving the acquired knowledge and skills.

Course objective

The role and importance of working machines in technology. Knowledge of construction, principles of operation of working machines, with particular emphasis on earthmoving machines. Classification and systematics of working machines. Working machines used in agriculture and road construction. Construction, principle of operation and adjustment of working units of complex agricultural machines, earthmoving and road works machines. Determination of efficiency and rules of their use.

Course-related learning outcomes

Knowledge:

Is aware of the latest trends in machine construction, i.e. automation and mechatronization, automation of machine design and construction processes, increased safety and comfort of operation, the use of

modern construction materials.

Has elementary knowledge of the impact of machinery and technology on the natural environment and global energy balances.

Has elementary knowledge of the economics and economics of industrial enterprises, banking system, commercial law, and entrepreneurial accounting.

Skills:

Can search in catalogs and on manufacturers" websites ready-made machine components to be used in his own projects.

Can competently advise on the selection of a machine for a given application in the industry covered by the selected diploma path based on the acquired knowledge about a given group of machines. Can design the technology behind a simple machine element as well as the technology for assembling and disassembling a machine.

Social competences:

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.

Is willing to think and act in an entrepreneurial manner.

Is ready to fulfill professional roles responsibly, including:

- observing the rules of professional ethics and requiring this from others, - caring for the achievements and traditions of the profession.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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Partial grades:

Assessment of student activity during lectures.

Summative assessment:

Assessment taking into account the activity of students during the classes and a written exam on the material

Programme content

General construction of machines for soil treatment with particular emphasis on agricultural machinery also used in road construction. Solutions of systems of working units and running gear. Machine construction diagrams, i.e. harrows, cultivators, plows, seeders, mowers, rollers. Construction of hydraulic systems. Application and methods of use of the above-mentioned machines.t.

Course topics

none

Teaching methods

1. Lecture with multimedia presentation

2. Exercises - solving problems

Bibliography

Basic

1. Kanafojski C., Karwowski T.: Teoria i konstrukcje maszyn rolniczych. Wyd. PWRiL, Warszawa, 1972.

2. Gach S., Miszczak M., Waszkiewicz C.: Projektowanie maszyn rolniczych. Wyd. SGGW-AR, Warszawa, 1989.

3. Brach J.: Koparki jednonaczyniowe. Wyd. WAT, Warszawa, 1985.

4. Brach J.: Maszyny ciągnikowe do robót ziemnych. Wyd. WNT, Warszawa, 1986. Additional

1. Dudczak A.: Koparki. Teoria i projektowanie. Wyd. WNT, Warszawa, 2000.

2. Konopka S.: Podstawy budowy i eksploatacji maszyn inżynieryjno-budowlanych. Wyd. WAR, Warszawa, 2002.

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,00
Classes requiring direct contact with the teacher	27	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	48	2,00