COURSE DESCRIPTION CARD - SYLLABUS

Course name

Oils, Fuels and Other Exploitation Materials for Motor Vehicles

Course

Field of study

Aerospace engineering

Year/Semester

2/4

Area of study (specialization)

–

Profile of study

general academic

Level of study

First-cycle studies

Course offered in

polish

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

30

Laboratory classes

15

Other (e.g. online)

0

Tutorials

0

Projects/seminars

0

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

prof. dr hab. inż. Wiesław Zwierzycki

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tel. 61 665 22 37

Faculty of Civil Engineering and Transport

ul. Piotrowo 3 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

Knowledge: The student has basic knowledge of chemistry and general knowledge of the operation of the internal combustion engine and mechanical (industrial) devices.

Skills: The student can learn with the use of various sources of information

Social competences: The student understands the need for lifelong learning

Course objective

Getting to know the basics of construction, obtaining, ownership and use of automotive and industrial consumables

Course-related learning outcomes

Knowledge

1. Has an ordered and theoretically founded knowledge of the application, rheology, properties of propellants and lubricants used in aviation and aerospace [K2A_W18]

Skills

1. Can use formulas and tables, technical and economic calculations using a spreadsheet, specialized software [K2A_U05]

2. Can plan and experiment by experimenting with research using measuring equipment, computer simulations, test measurements, interpret the results and draw conclusions [K2A_U10]

Social competences

1. Understands the need for lifelong learning; can inspire and organize the learning process of other people [K2A_K01]

2. The student is ready to critically assess his knowledge and received content, recognize the importance of knowledge in solving cognitive and practical problems and consult experts in the event of difficulties with solving the problem on his own K2A_K02]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

LECTURE: written credit

LABORATORY: written reports on the conducted laboratory classes

Programme content

Structure and production of mineral and synthetic lubricating oils. Automotive lubricants (engine and transmission oils, plastic lubricants). Other automotive consumables (brake fluids, cooling fluids, washer fluids). Motor fuels (distribution problems). Industrial consumables (machine, compressor, turbine, gear, hydraulic oils, etc.). Service aging of oils and working fluids (condition diagnostics). Consumables and the environment

Teaching methods

Informative (conventional) lecture (providing information in a structured way) - may be of a course (introductory) or monographic (specialist) character.

Laboratory (experiment) method (students independently conduct experiments)

Bibliography

Basic

1. Zwierzycki W.: Oleje, paliwa i smary dla motoryzacji i przemysłu, Wyd. ITeE, Radom 2001

2. Zwierzycki W.: Płyny eksploatacyjne dla środków transportu drogowego. Charakterystyka funkcjonalna i ekologiczna. Wyd. Politechniki Poznańskiej, Poznań 2006

Additional

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	45	1,0
Student's own work (literature studies, preparation for tests/exam) [1]	5	1,0

[1] delete or add other activities as appropriate