



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Vehicle wear mechanisms [S1MiTPM1>MzP]

### Course

Field of study	Year/Semester
Materials and technologies for automotive industry	3/6
Area of study (specialization)	Profile of study
–	general academic
Level of study	Course offered in
first-cycle	Polish
Form of study	Requirements
full-time	elective

### Number of hours

Lecture	Laboratory classes	Other
15	15	0
Tutorials	Projects/seminars	
0	0	

### Number of credit points

2,00

### Coordinators

dr hab. inż. Adam Piasecki prof. PP  
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### Lecturers

### Prerequisites

Basic knowledge of chemistry, physics, materials science. Logical thinking, use of the information obtained from the library and the Internet. Understanding the need for learning and acquiring new knowledge,

### Course objective

Understanding the mechanisms of vehicle wear.

### Course-related learning outcomes

Knowledge:

1. The student should know the mechanisms of wear of vehicles and their parts.
2. The student should know the research methods determining the mechanism of wear.

Skills:

1. The student is able to determine the wear mechanism.
2. The student is able to perform an expert opinion on the wear and tear of automotive materials and parts.

Social competences:

1. Student is able to work in a group.
2. The student is aware of the importance of reducing automotive consumption in the modern economy and for society.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: - credit on the basis of a test consisting of both open and test questions carried out at the end of the semester.. Scale of estimate: 51-60% - dst(C), 61-70% - dst+(C+), 71-80% - db(B), 81-90% - db+(B+), 91-100% - bdb(A).

Tutorials: evaluation of students knowledge necessary to prepare, and carry out the lab tasks and evaluation of reports. Activity during assigned tasks and debates.

### Programme content

During the course, students will learn about the mechanisms of wear of vehicle parts.

### Course topics

Lecture: The importance of material wear. Methods of reducing material wear. The life cycle of vehicle parts. Examples of expert opinions on various wear mechanisms. The importance of standards: searching skills and interpretation.

Laboratory: 1-3. Case study. "Brainstorming" - preparation of an expert opinion on the wear of parts based on the analysis of the obtained test results. 4. Multimedia presentation of the expert opinion. 5. Oxford debate/court hearing.

### Teaching methods

multimedia presentations, research results.

### Bibliography

Basic:

1. Burakowski T., Areologia. Podstawy teoretyczne, Instytut Technologii Eksploatacji - PIB / 2013.
2. Blicharski M., Inżynieria powierzchni, Wyd. PWN, 2021.
3. Ashby M., Shercliff H., Cebon D. Inżynieria materiałowa. T. 1 and 2 , Wyd. Galaktyka, 2011.
3. European and international standards.

Additional:

1. Ashby M. Materials selection in mechanical design. Wyd. Elsevier/Butterworth-Heinemann, 2017.
2. Praca Zbiorowa. Poradnik Galwanotechnika. WNT Warszawa 2002.
2. Scientific articles.

### Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	32	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	18	0,50