



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Recycling of means of transport

### Course

Field of study

Year/Semester

Transport

1/1

Area of study (specialization)

Profile of study

Road transport

general academic

Level of study

Course offered in

Second-cycle studies

Polish

Form of study

Requirements

part-time

elective

### Number of hours

Lecture

Laboratory classes

Other (e.g. online)

9

Tutorials

Projects/seminars

### Number of credit points

1

### Lecturers

Responsible for the course/lecturer:

Responsible for the course/lecturer:

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### Prerequisites

Student has a basic knowledge of the methods of end-of-life vehicle treatment (types of recovery and recycling) and the organization of the recycling network

Student is able to associate and integrate obtained information, draw conclusions, formulate and justify opinions

Student is aware of the social and economic importance of environmental protection and closed-loop economy



## Course objective

Expanding the knowledge on vehicles recycling and the organization of the vehicle recycling network in Poland, taking into account legal, technical, economic and social aspects in the context of sustainable development.

## Course-related learning outcomes

### Knowledge

Student has ordered and theoretically founded general knowledge related to key issues in the field of transport engineering

Student has knowledge of trends and the most important new achievements of means of transport and other selected related scientific disciplines

Student has knowledge of the codes of ethics related to scientific and research work in the field of transport engineering

### Skills

Student is able to assess the usefulness and the possibility of using new achievements (methods and tools) and new products of transport technology

Student is able to make a critical analysis of existing technical solutions and propose their improvements

Student is able to assess the usefulness of methods and tools for solving an engineering task consisting in the construction or assessment of a transport system or its components, including the limitations of these methods and tools

### Social competences

Student understands the importance of popularizing the latest achievements in the field of transport engineering

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Discussion and active participations in lectures.

Written test in the form of a multiple-choice test with possible additional open questions or evaluation based on presentation on the recycling of selected types of materials used in vehicles.

## Programme content

1. Regulations related to recycling: EU Directive 2000/53 /EC and the Polish Law on end-of-life vehicles recycling of January 20, 2005.
2. The recycling system in Poland: the scope of the problem (carpark, age structure, number of end-of-life vehicles), network of collection points, dismantlers, shredders and specialized material recycling facilities.



3. Development of recycling in Poland: problems with the organization of the recycling network, the functioning of the shadow economy and the possibility of limiting its extent, social awareness of negative impact of end-of-life vehicle treatment.
4. Economical aspects of recycling: costs from the point of view of vehicle manufacturers, users and the state budget.
5. Recycling technologies of selected materials and components (including ferrous metals, plastics, elastomers, glass).

### Teaching methods

Lecture with multimedia presentation

### Bibliography

Basic

Merkisz-Guranowska A., Recykling samochodów w Polsce, Instytut Technologii Eksploatacji, Radom 2007

Additional

Internet sources, ie. material recovery companies associations websites.

### Breakdown of average student's workload

	Hours	ECTS
Total workload	19	1,0
Classes requiring direct contact with the teacher	9	0,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	10	0,5

<sup>1</sup> delete or add other activities as appropriate