



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Vehicles for the transport of special materials [S2MiBP1-PCh>PdTTTS]

### Course

Field of study	Year/Semester
Mechanical and Automotive Engineering	1/2
Area of study (specialization)	Profile of study
Refrigerated Vehicles	general academic
Level of study	Course offered in
second-cycle	Polish
Form of study	Requirements
full-time	compulsory

### Number of hours

Lecture	Laboratory classes	Other (e.g. online)
30	15	0
Tutorials	Projects/seminars	
0	0	

### Number of credit points

3,00

### Coordinators

dr inż. Karolina Perz  
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### Lecturers

### Prerequisites

Knowledge: Has extended basic knowledge necessary to understand objects specialist and specialist knowledge about the construction, construction methods, manufacturing and operation of a selected group of working, transport, thermal and flow machines Skills: He can competently advise on the selection of a machine for a given application in the industry covered by the selected specialty based on the acquired knowledge about a given group of machines, Social Competence: Is ready to recognize the importance of knowledge in problem-solving cognitive and practical as well as consulting experts in case of difficulties with independent activity the solution to the problem

### Course objective

To acquaint students with the specificity of vehicles for the transport of special goods, processes and phenomena related to it; presentation of current regulations, rules and standards functioning of the transport of special goods in the world.

### Course-related learning outcomes

Knowledge:

Has knowledge of the principles of safety and ergonomics in the design and operation of machines and

the threats that machines pose to the natural environment.

Has extended knowledge of modern construction materials such as carbon plastics, composites, ceramics, in terms of their construction, processing technology and applications.

He has in-depth knowledge of the construction, principles of operation and classification of machines from a selected group.

#### Skills:

He can correctly select the optimal material and its processing technology for typical parts of working machines, taking into account the latest achievements in material engineering.

He can design the technology of exploitation of a selected machine with a high degree of complexity.

He can develop a technical description, offer and design documentation for a complex machine from a selected group of machines.

#### 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.

Is ready to fulfill professional roles responsibly, taking into account changing social needs, including:

- developing the professional achievements,
- maintaining the ethos of the profession,
- observing and developing the rules of professional ethics and acting towards the observance of these rules.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:

Lecture - final assessment - activity during classes, a test. Final credit of exercises - final test.

### Programme content

Preparation of special cargoes for road transport, cargo transportation safety special, legal regulations in the transport of special loads, means of transporting goods special, trailers and semi-trailers for the transport of oversized cargo, legal regulations concerning animal transport, organization of animal transport, loading and unloading devices (reloading, securing special loads)

### Course topics

none

### Teaching methods

Lecture with a multimedia presentation, Laboratories - problem methods (case study, situational, expert table method)

### Bibliography

Basic

1. L. Prochowski, A. Żuchowski Technika transportu ładunków. Wydawnictwo Komunikacji i Łączności Warszawa 2016
2. ADR Umowa europejska dotycząca międzynarodowego przewozu towarów niebezpiecznych
3. CMR Umowa o międzynarodowym przewozie drogowym towarów.
4. D. Starkowski, K. Bieńczak, W. Zwierzycki Samochodowy transport krajowy i międzynarodowy kompendium wiedzy praktycznej T. 1, Zabezpieczenia ładunków oraz zagadnienia technicznoeksploatacyjne w transporcie drogowym Poznań : Systherm D. Gazińska, 2010
5. Przewóz i techniki mocowania ładunków ponadnormatywnych w transporcie / pod red. Wiesław Galor Akademia Morska, 2011.

Additional

1. Pojazdy chłodnicze w transporcie żywności : praca zbiorowa / pod red. Wiesława Zwierzyckiego i Krzysztofa Bieńczaka, Poznań : Systherm D. Gazińska, 2006.
2. A.Korzeniowski, M. Skrzypek, G. Szyszka Opakowania w systemach logistycznych Biblioteka Logistyka

Poznań 2010

3. Z. Korzeń (red): Logistyka w transporcie towarów Oficyna wydawnicza Politechniki Wrocławskiej 1998

### Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,00
Classes requiring direct contact with the teacher	45	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	30	1,00