



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Environmental Protection

### Course

Field of study

Year/Semester

Civil Engineering

1/2

Area of study (specialization)

Profile of study

Road, bridge and railway engineering

general academic

Level of study

Course offered in

Second-cycle studies

polish

Form of study

Requirements

full-time

elective

### Number of hours

Lecture

Laboratory classes

Other (e.g. online)

0

0

0

Tutorials

Projects/seminars

15

0

**Number of credit points**

2

### Lecturers

Responsible for the course/lecturer:

Responsible for the course/lecturer:

dr inż. Agnieszka Płatkiewicz

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### Prerequisites

Knowledge: detailed knowledge of the design, construction, maintenance and operation of roads, bridge

Skills: the ability to acquire information from literature, databases and other sources and to integrate obtained data. The ability to interpret and draw conclusions. The ability to critically analyze and to evaluate of existing road construction technologies

Social competencies: The ability to work independently and in a team. To realise that it is necessary to improve professional and personal competence entire life. The awareness of the non-technical effects of engineering activities, including its impact on the environment and responsibility for the decisions



### Course objective

The transfer of knowledge in the current regulations and laws in force in the road, bridge and railway engineering, particularly the influence of road, bridge and railway investments on the environment.

The ability to identify and solve major issues concerning the environmental protection at the design, construction and exploitation of roads, bridges and railways.

The ability to independent study of new problems and to solve them while conducting research work.

### Course-related learning outcomes

#### Knowledge

Student knows in detail the provisions of law relating to environment protection connected to road, bridge and railway engineering.

Student has detailed knowledge of the impact of building investments on the environment and understands the need to implement the rules of sustainable development.

#### Skills

Student is able to obtain information from literature, databases and other properly selected information sources; can integrate the obtained information, interpret and evaluate it as well as draw conclusions, formulate, justify, discuss and present opinions.

Student is able to analyze the risks in the implementation and operation of road, bridge and railway projects and implement appropriate protective measures.

Student can manage team work, cooperate with other people and take the leading part in teams.

#### Social competences

Student takes responsibility for the reliability of working results and their interpretation.

Student is aware how important is sustainable development in road, bridge and railway engineering.

Student understands the need to transfer to the society the knowledge about building engineering, transfer the knowledge in a clear and easily comprehensible manner.

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Preparation and presentation of two presentations in teams on selected issues of road law and environmental protection in road, bridge and railway construction.

### Programme content

Selected topics in the theory of law (rules, regulations, legislation, legislative acts in force across the country, the constitution, codes, Code of Administrative Procedure, the acts of local law). Transport policy of the state. Transport Development Strategy until 2020 (with the prospect of up to 2030).



Selected topics from the following acts: the Act on public roads, the technical conditions to be met by public roads and their location, the technical conditions to be met by traffic engineering objects and their locations, technical regulations - Construction of toll motorways, toll roads Act and the National road Fund, the Law on special Rules for the investment in public roads, road traffic, road traffic management and the oversight of the management, regulation on road signs and signals as well as on detailed technical specifications for road signs and signals, Regulation on the method of numbering and registration of public roads, and the procedure for the gathering of information and the collection and sharing of data on public roads, bridges, tunnels, ferries. Acts relating: Special purpose road companies, licence for construction works or services and public private partnership.

The environmental condition in Poland; the impact of the road, bridge and railway investments on the environment; passive and active environmental protection; protection against road and railway noise and vibrations; protection against air pollution; protection of water and soil; nature and landscape protection; the process of evaluating the impact of the road investments on the environment.

### Teaching methods

Tutorial discussion after presenting the presentations prepared by students.

### Bibliography

#### Basic

1. Strategia Rozwoju Transportu do 2020 roku (z perspektywą do 2030 roku) - Ministerstwo Transportu, Budownictwa i Gospodarki Morskiej, 2013
2. Wybrane kodeksy, ustawy i rozporządzenia związane z budownictwem drogowym - Internetowy System Aktów Prawnych - ISAP
3. Praca zbiorowa, Zasady ochrony środowiska w drogownictwie, Generalna Dyrekcja Dróg Publicznych, (opracowanie IBDiM), Warszawa, 1999
4. Praca zbiorowa, Podręcznik dobrych praktyk wykonywania opracowań środowiskowych dla dróg krajowych, EEKOM sp. z o.o., Kraków, 2008
5. Praca zbiorowa, Ekologia dróg, Island Press, 2003 (przekład 2009)

#### Additional

1. Kopta T., Zrównoważony system transportowy, Transport Miejski Nr 6/1999
2. Wybrane zarządzenia Generalnego Dyrektora Dróg Krajowych i Autostrad związane z budownictwem drogowym
3. Praca zbiorowa, Zasady ochrony środowiska w budowie dróg, Generalna Dyrekcja Dróg Publicznych, Warszawa, 1993
4. Izabella Olędzka-Graffstein, Zagadnienia ochrony środowiska w otoczeniu dróg, Wydawnictwa Komunikacji i Łączności, Warszawa, 1983



5. Zbigniew Engel, Ochrona środowiska przed drganiem i hałasem, PWN, Warszawa, 2001

### Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	20	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	30	1,0

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