COURSE DESCRIPTION CARD - SYLLABUS

Course name
Environmental protection [N2Bud1-BDMiK>OŚ]

Course

Field of study
Civil Engineering

Year/Semester
1/2

Area of study (specialization)
Road, Bridge and Railway Engineering

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
part-time

Requirements
elective

Number of hours

Lecture
12

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

dr inż. Agnieszka Płatkiewicz
agnieszka.platkiewicz@put.poznan.pl

Lecturers

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:

Learning outcomes presented above are verified as follows:
Preparation and presentation of presentations in teams on selected issues of road law and environmental protection in road, bridge and railway construction.

Programme content

The state of the natural environment in Poland;
Environmental requirements;
Assessment of the environmental impact of construction investments;
Impact of road investments on selected environmental elements;
Passive and active environmental protection against the adverse impact of construction investments.

Course topics

EU requirements for environmental protection;
Environmental law;
Environmental Impact Assessment (EIA);
Report on the environmental impact of the project;
Public participation in EIA;
Environmental decisions;
Design studies for the purposes of obtaining a Decision on Environmental Conditions - Corridor Study, Technical, Economic and Environmental Study;
The condition of individual environmental components in Poland;
Impact of road and railway investments on a given environmental component at the stage of construction and operation;
Passive protection measures (legal instruments, spatial planning, proper road design, etc.);
Active protection measures (technical measures, protective devices, etc.);

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 drganiami i hałasem, PWN, Warszawa, 2001

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	12	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	38	1,50