



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Environmental protection [S2Bud1>OŚ]

### Course

Field of study

Civil Engineering

Year/Semester

2/3

Area of study (specialization)

Construction Engineering and Management

Profile of study

general academic

Level of study

second-cycle

Course offered in

polish

Form of study

full-time

Requirements

elective

### Number of hours

Lecture

20

Laboratory classes

0

Other (e.g. online)

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

Transfer of knowledge in the field of: the state of the environment in Poland, the impact of road investments on the environment, methods and ways of protecting selected environmental elements from negative impacts of road infrastructure and current regulations and legal acts concerning environmental protection.

### Course-related learning outcomes

none

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Students' knowledge is assessed on the basis of a written exam.

Grading scale:

15 ÷ 16 points - 5.0 (A)

13 ÷ 14 points - 4.5 (B)

12 points - 4.0 (C)

10 ÷ 11 points - 3.5 (D)

8 ÷ 9 points - 3.0 (E)

poniżej 8 points - 2.0 (F)

## 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 road investments;

## Teaching methods

informational lecture/problematic lecture/multimedia presentation lecture

## Bibliography

Basic:

1. Praca zbiorowa, Zasady ochrony środowiska w drogownictwie, Generalna Dyrekcja Dróg Publicznych, (opracowanie IBDiM), Warszawa, 1999

2. Praca zbiorowa, Podręcznik dobrych praktyk wykonywania opracowań środowiskowych dla dróg krajowych, EEKOM sp. z o.o., Kraków, 2008

3. Praca zbiorowa, Ekologia dróg, Island Press, 2003 (przekład 2009)

4. Praca zbiorowa, Ekologiczne zagadnienia odwodnienia pasa drogowego, Warszawa 2009

5. Sybilski D. Ocena wpływu typu i technologii wykonania nawierzchni drogowej na hałaśliwość ruchu drogowego i jego uciążliwość dla środowiska, IBDiM, Warszawa 2005

6. Wybrane ustawy i rozporządzenia związane z ochroną środowiska - Internetowy System Aktów Prawnych - ISAP

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   | 20    | 1,00 |
| Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation) | 30    | 1,00 |