

MODULE INFORMATION SHEET

Name of Module Unit	Environmental Protection in Transport Systems
Name in polish language	Ochrona środowiska w transporcie
Module type	compulsory / elective
Form of studying	full-time day courses
Level of study	graduate course (M.Sc. level)
Type of study (for extra-mural courses)	-
Programme	Environmental Engineering
Speciality	Environment Protection Engineering
Responsible department	Dept. of Informatics and Environment Quality Research
Responsible person	dr hab inż. Artur Badyda, prof. WUT

Semester	Lectures(E)	Tutorials	Laboratory	Computer Exercises	Projects	ECTS
3	30				15	3

Learning outcomes (knowledge, skills, competences)

The course aims to provide basic knowledge concerning the impact of transport and transport infrastructure on the environment. It will present ways to prevent and minimize the impact of transport on different components of the environment, both natural and social. Students will learn basic information about the proper design of transport infrastructure, ways of locating and taking into account the needs of the environment in the design, construction and operation. Particular emphasis will be placed on aspects related to road infrastructure, especially with large road projects such as highways and freeways. There will also be presented basic information on air, rail and water transport. Issues related with transportation in large urban areas, with particular emphasis on aspects of social protection of the environment, will also be communicated.

Prerequisites

-

Rules for integrated grade setting

0,5*test + 0,5*project

Recommended readings

Contents of lectures (syllabus)

	Topics	Time (hrs.)	Scope (S / Ex)
1	Introduction to the issue of the impact of infrastructure and means of transport on the natural and social environment. Review of environmental effects related to the influence of transportation	8	S
2	Locating the road infrastructure in the context of transport policy – how to locate the correct routes, avoiding the controversial location, minimizing conflicts with the social and natural environment, taking into account the needs of the socially sensitive areas and ecologically sensitive areas, including NATURA 2000 areas	4	S
3	The impact of infrastructure and means of road transport on the environment – environmental protection criteria, the basic ways to reduce the impact of road infrastructure on the natural environment	4	S
4	The impact of infrastructure and means of road transport on the social environment – social environmental criteria, the basic ways to reduce the impact of road infrastructure and the social environment	4	S
5	Environment-friendly vehicles and ecological use of vehicles – modern solutions in the design of vehicles, limiting their impact on the environment, preventing the emission of pollutants (biofuels, hybrid engines, fuel cells) and noise	3	S
6	Transport costs and environmental costs of transport activities	2	S
7	Environmental protection in urban areas in terms of the impact of transport – the emergence of transport congestion, impact on the health of urban residents, time and financial losses	3	S
8	Basic information about the environmental impact of air, rail and waterborne transport	2	S
Total		30	hours

S – topics listed in the legal study programme standards from 12.07.2007

Ex – extended topics

Lecturers

Artur Badyda

Assessment method

Test

Contents of guided projects

	Topics	Time (hrs.)	Scope (S / Ex)
1	Installations protecting the water and soil environment against pollution from road infrastructure	2	S
2	Traffic-noise protection installations	2	S
3	Installations for the protection of natural environment	2	S
4	Project of the environmental protection installations for the planned or existing road	9	S
Total		15	hours

S – topics listed in the legal study programme standards from 12.07.2007

Ex – extended topics

Persons responsible for guided projects

Dominika Mucha

Assessment method for guided projects

Project (written document)