



MODULE SPECIFICATION

Module code	
Module title in Polish	Podstawy inżynierii środowiska
Module title in English	Introduction to Environmental Engineering
Module running from the academic year	2016/2017

A. MODULE IN THE CONTEXT OF THE PROGRAMME OF STUDY

Field of study	Surveying and Cartography
Level of qualification	first cycle (first cycle, second cycle)
Programme type	academic (academic/practical)
Mode of study	full-time (full-time/part-time)
Specialism	
Organisational unit responsible for module delivery	The Department Water and Wastewater Technology
Module co-ordinator	Ewa Ozimina, PhD
Approved by:	Prof.PhD hab. Elżbieta Bezak – Mazur

B. MODULE OVERVIEW

Module type	core module (core/programme-specific/elective HES*)
Module status	compulsory module (compulsory/optional)
Language of module delivery	English
Semester in the programme of study in which the module is taught	semester 2
Semester in the academic year in which the module is taught	summer semester (winter semester/summer semester)
Pre-requisites	None (module code/module title, where appropriate)
Examination required	(Yes/No)
ECTS credits	2

* elective HES – elective modules in the Humanities and Economic and Social Sciences



Politechnika Świętokrzyska

WYDZIAŁ INŻYNIERII ŚRODOWISKA, GEOMATYKI I ENERGETYKI

Mode of instruction	lectures	classes	laboratories	project	others
Total hours per semester	15	15			



C. LEARNING OUTCOMES AND ASSESSMENT METHODS

Module aims	The aim of the module is to acquaint students with the impact of industrial activity of a man on main environmental components, cause and effect relationship and main activities and techniques which limit the emission of pollutants on the environment
--------------------	--

Module outcome code	Module learning outcomes	Mode of instruction (l/c/lab/p/ others)	Corresponding programme outcome code	Corresponding discipline-specific outcome code
W_01	A student has basic knowledge on legal conditions concerning environment utilisation.	l	GiK_W01	T1A_W01
W_02	A student knows pollution sources of main environmental components; a student can also explain the relationship between business activity of a man and the condition of the environment.	l/c	GiK_W01	T1A_W01
W_03	A student has basic knowledge on the methods of limiting the emission of pollutants to the environment.	l/c	GiK_W01	T1A_W01
U_01	A student recognises and classifies factors which cause pollution of particular environmental components.	l/c	GiK_U18	T1A_U09;
U_02	A student is able to interpret cause and effect relationship between industrial activity, the applied technology and man's pressure on the environment.	l/c	GiK_U18	T1A_U09;
U_03	A student can suggest a concise plan of a multimedia presentation (and give the presentation on the basis of the prepared material).	c	GiK_U01 GiK_U18	T1A_U01; T1A_U09
K_01	A student understands the significance of technological progress and the necessity of implementing new technological solutions in order to limit the impact on the environment.	l/c	GiK_K03	T1A_K02;
K_02	A student understands the necessity of education for the sake of raising his/her professional competences.	l	GiK_K02 GiK_K03	T1A_K01, T1A_K02, T1A_K05, T1A_K07
K_03	A student can discuss (as regards the subject matter) the impact of industry on the environment.	c	GiK_K03	T1A_K02;

Module content:

1. Topics to be covered in the lectures

No.	Topics	Module outcome code
1	Legal fundamentals in environmental engineering.	W_01, K_02
2 – 4	The sources and types of environmental pollution; anthropogenic pollution of main environmental components (air, water, and soil).	W_02, U_01
5	The effects of environmental pollution; global and local environmental problems.	W_02,W_03, U_01, U_02,
6	The methods of limiting the emission of pollutants to the environment. The best available technologies in the selected branches of industry and their selection in terms of their impact on the environment.	W_02,W_03, U_01, U_02, K_01, K_02
7		W_01,W_02,



	Environment monitoring (the quality of the environment).	W_03,U_01, U_02, K_01, K_02
8	A final test.	W_01,W_02, W_03, U_01 U_02, K_01, K_02

2. Topics to be covered in the classes

No.	Topics	Module outcome code
1	Introduction: a review of the main branches of industry (e.g. extraction industry, iron and steel industry, chemical industry, transport industry, energetics; their impact on the natural environment).	W_02, W_03, U_01 U_02, K_01,
2-8	Assessing the impact of particular branches of industry on main environmental components. The impact of industry on: air (the emission of pollutants to the environment), water (the emission of pollutants to surface and underground water), soil (the emission of pollutants to soil). Assessing the impact of the selected production plant on the environment: presenting (in a concise form) a multimedia presentation and giving the presentation. A discussion on the methods of limiting a negative impact of industry on the environment.	W_02, W_03, U_01 U_02, U_03, K_01, K_03

3. Topics to be covered in the laboratories

No.	Topics	Module outcome code

Assessment methods

Module outcome code	Assessment methods <i>(Method of assessment; for module skills – reference to specific project, laboratory and similar tasks)</i>
W_01	A test
W_02	A test
W_03	A test and assessing a student's presentation
U_01	A test, assessing a student's presentation, and participation in the discussion
U_02	A test, assessing a student's presentation, and participation in the discussion
U_03	Assessing a student's presentation and participation in the discussion
K_01	A test, assessing a student's presentation, and participation in the discussion
K_02	A test
K_03	Assessing a student's presentation and participation in the discussion



D. STUDENT LEARNING ACTIVITIES

ECTS summary		
	Type of learning activity	Study time/ credits
1	Contact hours: participation in lectures	15
2	Contact hours: participation in classes	15
3	Contact hours: participation in laboratories	
4	Contact hours: attendance at office hours (2-3 appointments per semester)	3
5	Contact hours: participation in project-based classes	
6	Contact hours: meetings with a project module leader	
7	Contact hours: attendance at an examination	
8		
9	Number of contact hours	33 (total)
10	Number of ECTS credits for contact hours <i>(1 ECTS credit = 25-30 hours of study time)</i>	1,32
11	Private study hours: background reading for lectures	5
12	Private study hours: preparation for classes	12
13	Private study hours: preparation for tests	
14	Private study hours: preparation for laboratories	
15	Private study hours: writing reports	
16	Private study hours: preparation for a final test in laboratories	
17	Private study hours: preparation of a project/a design specification	
18	Private study hours: preparation for an examination	
19		
20	Number of private study hours	17
21	Number of ECTS credits for private study hours <i>(1 ECTS credit = 25-30 hours of study time)</i>	0,68
22	Total study time	50
23	Total ECTS credits for the module <i>(1 ECTS credit = 25-30 hours of study time)</i>	2
24	Number of practice-based hours <i>Total practice-based hours</i>	
25	Number of ECTS credits for practice-based hours <i>(1 ECTS credit = 25-30 hours of study time)</i>	

E. READING LIST

References	<ol style="list-style-type: none">1. Joseph A. Salvato, Nelson L. Nemerow, Franklin J. Agardy. Environmental Engineering. John Wiley & Sons, 31 mar 20032. C. David Cooper. Introduction to Environmental Engineering. Waveland Press, 25 lip 20143. Current regulations (www.gov.sejm.pl)4. GIOŚ, the State Environmental Monitoring Program for 2016-2020, Environmental Monitoring Library Warsaw 20075. Reports State of the Environment in Poland, BMS
------------	--



Politechnika Świętokrzyska

WYDZIAŁ INŻYNIERII ŚRODOWISKA, GEOMATYKI I ENERGETYKI

Module website	
----------------	--