



MODULE SPECIFICATION

Module code	
Module title in Polish	Ochrona środowiska
Module title in English	Environmental Protection
Module running from the academic year	2016/2017

A. MODULE IN THE CONTEXT OF THE PROGRAMME OF STUDY

Field of study	
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	Department of Water and Wastewater Engineering
Module co-ordinator	Prof. Elżbieta Bezak – Mazur, PhD hab.
Approved by:	Lidia Dąbek, PhD hab., Professor of the University

B. MODULE OVERVIEW

Module type	core module (core/programme-specific/elective HES*)
Module status	compulsory module (compulsory/optional)
Language of module delivery	Polish/English
Semester in the programme of study in which the module is taught	semester 1
Semester in the academic year in which the module is taught	winter semester (winter semester/summer semester)
Pre-requisites	None (module code/module title, where appropriate)
Examination required	No (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	30				



C. LEARNING OUTCOMES AND ASSESSMENT METHODS

Module aims	The aim of the module is to acquaint students with the principles of environment functioning and various aspects of its protection.
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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 is familiar with ecosystems and their functioning in the conditions of ecological equilibrium and anthropogenic impact.	I	IŚ_W01	T1A_W01 T1A_W02
W_02	A student knows legal, economic, and technical aspects of environmental protection.	I	IŚ_W01	T1A_W01 T1A_W02
W_03	A student knows cause and effect links between the phenomena taking place in the environment and anthropogenic pressure.	I	IŚ_W16	T1A_W03 T1A_W05 T1A_W07 T1A_W08
W_04	A student knows environmental hazards resulting from utilising the environment.	I	IŚ_W15 IŚ_W16	T1A_W03 T1A_W05 T1A_W06 T1A_W07 T1A_W08
U_01	A student can utilise information from databases and literature on the subject of environmental protection.	I	IŚ_U02	T1A_U01 T1A_U05 T1A_U07
U_02	A student can interpret cause and effect relationship between the phenomena taking place in the environment and the activity of a man.	I	IŚ_U09	T1A_U01 T1A_U04 T1A_U10
K_01	A student is aware of environmental hazards.	I	IŚ_K03	T1A_K01 T1A_K02 T1A_K04
K_02	A student understands the necessity of limiting anthropogenic impact.	I	IŚ_K06	T1A_K06 T1A_K07

Module content:

1. Topics to be covered in the lectures
2. Topics to be covered in the classes
3. Topics to be covered in the laboratories

Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1	The history of environmental protection. Modern initiatives for environmental protection (balanced development).	W_02; K_02; U_02
2	Biosphere, ecosystem, and biocenosis. Biodiversity. Biological equilibrium.	W_01; U_01
3	Legal aspects of environmental protection.	W_02; U_01
4.	Atmosphere protection (air pollution and its effects).	W_02; W_04; U_02; K_01
5	The methods of limiting atmosphere pollutions.	W_03; W_04; U_02; K_02



6	Water protection (water contamination and its effects).	W_03;W_04 U_02, K_01; K_02
7	Technical, legal, and economic means in water protection.	W_03;W_04 U_02; K_01; K_02
8	Lithosphere protection. Utilising fossil fuel resources. Environmental effects of exploiting fossil fuels.	W_01; W_02; W_04; U_02; K_01; K_02
9	Environmental hazards of soils; limiting them.	W_01; W_03; W_04; U_02; K_01 K_02
10.	The elements of waste management.	W_01;W_04; U_03; K_01 K_02
11	Forest protection against environmental threats.	W_02;W_04; U_02; K_01;K_02
12	Noise and vibrations as environmental threats.	W_01;U_02 K_01; K_02
13	Radioactive substances in the environment. The impact of electromagnetic and ionising radiation on living organisms.	W_01;W_04; U_02; K_01;K_02
14	Environmental aspects of environmental protection. The forms of environmental protection. Utilising environment on the protected areas.	W_02; W_03; U_02;K_01;K_02
15.	The issues concerning environmental protection in the Swietokrzyskie region.	W_03;W_04; U_02

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	
W_04	A test	
U_01	A test	
U_02	A test	
K_01	A test	
K_02	A test	

D. STUDENT LEARNING ACTIVITIES

ECTS summary		
	Type of learning activity	Study time/ credits
1	Contact hours: participation in lectures	30
2	Contact hours: participation in classes	
3	Contact hours: participation in laboratories	
4	Contact hours: attendance at office hours (2-3 appointments per semester)	2
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	32



		<i>(total)</i>
10	Number of ECTS credits for contact hours <i>(1 ECTS credit = 25-30 hours of study time)</i>	1.28
11	Private study hours: background reading for lectures	10
12	Private study hours: preparation for classes	
13	Private study hours: preparation for tests	
14	Private study hours: preparation for laboratories	
15	Private study hours: writing reports	8
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	18 <i>(total)</i>
21	Number of ECTS credits for private study hours <i>(1 ECTS credit = 25-30 hours of study time)</i>	0.72
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>	0
25	Number of ECTS credits for practice-based hours <i>(1 ECTS credit = 25-30 hours of study time)</i>	0

E. READING LIST

References	<p>1. Joseph A. Salvato, Nelson L. Nemerow, Franklin J. Agardy. Environmental Engineering. John Wiley & Sons, 31 mar 2003</p> <p>2. C. David Cooper. Introduction to Environmental Engineering. Waveland Press, 25 lip 2014</p>
Module website	