

MODULE SPECIFICATION

Module code	
Module title in Polish	Chemia 2
Module title in English	Chemistry 2
Module running from the academic year	2016/2017

A. MODULE IN THE CONTEXT OF THE PROGRAMME OF STUDY

Field of study	Civil Engineering
Level of qualification	First cycle <i>(first cycle, second cycle)</i>
Studies profile	Academic <i>(academic/practical)</i>
Mode of study	Full-time <i>(full-time / part-time)</i>
Specialism	
Organisational unit responsible for module delivery	The Department of Engineering and Environmental Protection
Module co-ordinator	Ewa Ozimina, PhD
Approved by	Marek Iwański, Professor

B. MODULE OVERVIEW

Module type	Core module <i>(core/programme-specific/elective HES*)</i>
Module status	Compulsory module <i>(compulsory / non-compulsory)</i>
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 <i>(winter / summer)</i>
Pre-requisites	None <i>(module code/module title, where appropriate)</i>
Examination required	No <i>(yes / no)</i>
ECTS credits	1

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

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

C. LEARNING OUTCOMES AND ASSESSMENT METHODS

Module aims	The aim of the module is to acquaint students with: the structure and properties of substances, chemical reactions in water solutions; the fundamentals of thermodynamics and chemical kinetics; basic physicochemical properties of construction materials (drawing particular attention to bonding materials as well as corrosion of construction materials); recycling of construction materials.
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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 knows the structure and properties of substances, the reactions taking place in water solution as well as physicochemical process which are significant in civil engineering.	I	B_W02	T1A_W01; T1A_W02; T1A_W03; T1A_W05
W_02	A student understands the fundamentals of phenomena and processes accompanying materials corrosion.	I	B_W02 B_W18	T1A_W01; T1A_W02; T1A_W03; T1A_W04; T1A_W05; T1A_W07; T1A_W08
U_01	A student can make basic chemical calculations.	I	B_U16	T1A_U03; T1A_U04; T1A_U08; T1A_U09; T1A_U11; T1A_U14; T1A_U15; T1A_U16;
U_02	A student can make a simple experiment which leads to the assessment of the selected properties of construction materials.	I	B_U16 B_U23	T1A_U01; T1A_U03; T1A_U04; T1A_U05; T1A_U08; T1A_U09; T1A_U11; T1A_U14; T1A_U15;
U_03	A student can assess the hazards resulting from aggressive interaction of the environment on the construction material; a student can also suggest an appropriate protection.	I	B_U25 B_U16	T1A_U03; T1A_U04; T1A_U08; T1A_U09; T1A_U11; T1A_U13; T1A_U14; T1A_U15; T1A_U16;
K_01	A student can work individually and co-operate in a team on the assigned task.	L	B_K01	T1A_K01; T1A_K03; T1A_K04;
K_02	A student is responsible for the reliability of the obtained results of his/her work and their interpretation.	I	B_K02	T1A_K02; T1A_K05;

				T1A_K07
K_03	A student formulates conclusions and describes the results of his/her work.	I	B_K04	T1A_K01; T1A_K07
K_04	A student is aware of the threats occurring in the environment-material system.	I	B_K05	T1A_K05; 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

No.	Topics	Module outcome code
1.	Introductory classes, OHS and fire protection regulations.	
2.	Solution concentration.	W_01;U_01, K_01, K_02,
3.	The analysis of salts.	W_01,U_01, K_01, K_02, K_03
4.	Water analysis for civil engineering purposes.	U_01, K_01, K_02, K_03
5.	The analysis of liquid glass.	U_01 K_01, K_02, K_03
6.	Corrosion and corrosion protection of construction materials.	W_03; U_01, K_01, K_02, K_03
7.	The corrosion of metals.	W_03;U_01, K_01, K_02, K_03
8.	Protection against metal corrosion.	W_03; U_01, K_01, K_02, K_03

4. Topics to be covered in the projects

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, preparing reports on the completed laboratory class assignments
W_02	A test
W_03	A test, preparing reports on the completed laboratory class assignments
U_01	Completing all laboratory class assignments
U_02	Completing laboratory class assignments No 6-8 and formulating appropriate conclusions
U_03	A test
K_01	Completing all laboratory class assignments
K_02	Preparing reports on the completed laboratory class assignments
K_03	Preparing reports on the completed laboratory class assignments
K_04	Completing laboratory class assignments

C. STUDENT LEARNING ACTIVITIES

ECTS summary		
	Type of learning activity	Study time/ credits
1	Contact hours: participation in lectures	
2	Contact hours: participation in classes	
3	Contact hours: participation in laboratories	15
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	17 <i>(total)</i>
10	Number of ECTS credits for contact hours <i>(1 ECTS credit =25-30 hours of study time)</i>	0.7
11	Private study hours: background reading for lectures	
12	Private study hours: preparation for classes	
13	Private study hours: preparation for tests	
14	Private study hours: preparation for laboratories	3
15	Private study hours: writing reports	3
16	Private study hours: preparation for a final test in laboratories	2
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	8 <i>(total)</i>
21	Number of ECTS credits for private study hours <i>(1 ECTS credit =25-30 hours of study time)</i>	0.32
22	Total study time	25
23	Total ECTS credits for the module <i>(1 ECTS credit =25-30 hours of study time)</i>	1
24	Number of practice-based hours <i>Total practice-based hours</i>	25
25	Number of ECTS credits for practice-based hours <i>(1 ECTS credit =25-30 hours of study time)</i>	1