



MODULE SPECIFICATION

Module code	
Module title in Polish	Fizyka budowli 1
Module title in English	Building Physics 1
Module running from the academic year	2016/2017

A. MODULE IN THE CONTEXT OF THE PROGRAMME OF STUDY

Field of study	Environmental Engineering
Level of qualification	first cycle (first cycle, second cycle)
Programme type	academic (academic/practical)
Mode of study	full-time (full-time/part-time)
Specialism	Sanitary Pipelines and Systems
Organisational unit responsible for module delivery	Department of Piped Utility Systems
Module co-ordinator	Tadeusz Orzechowski, PhD hab., Eng., Professor of the University
Approved by:	Prof. Andrzej Kulickowski, PhD hab., Eng.

B. MODULE OVERVIEW

Module type	programme-specific module (core/programme-specific/elective HES*)
Module status	optional module (compulsory/optional)
Language of module delivery	Polish/English
Semester in the programme of study in which the module is taught	semester 5
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	1

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

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



C. LEARNING OUTCOMES AND ASSESSMENT METHODS

Module aims	The aim of the module is to familiarize students with heat and moisture processes of constructional dividing structures, their acoustic properties as well as the applied materials and technical solutions due to fire safety.
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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 basic issues concerning heat transfer (drawing particular attention to heat transfer in constructional materials and dividing structures).	l	IS_W08	T1A_W03 T1A_W04
W_02	A student knows the issues of the microclimate of the interiors and moisture issues of constructional dividing structures.	l	IS_W01	T1A_W01 T1A_W02
W_03	A student knows the issues of fire safety.	l	IS_W01	T1A_W01 T1A_W02
U_01	A student can make basic heat and moisture calculations of constructional dividing structures.	l	IS_U19	T1A_U03 T1A_U05 T1A_U07 T1A_U08 T1A_U09 T1A_U10 T1A_U11 T1A_U13 T1A_U14 T1A_U15 T1A_U16
U_02	A student can make the analysis of microclimatic conditions in a given rooms and safety fire conditions in a building.	l	IS_U01	T1A_U08 T1A_U09
K_01	A student is able to formulate conclusions and describe the results of the obtained work.	l	IS_K07	T1A_K07

Module content:

1. Topics to be covered in the lectures

No.	Topics	Module outcome code
1.	Basic information on heat transfer.	W_01 U_01
2.	Heat issues of constructional dividing structures.	W_01 U_01
3.	The microclimate of the interiors.	W_02 U_02
4.	Moisture issues of constructional dividing structures.	W_02 U_01
5.	Basic issues of fire safety.	W_03 U_02 K_01

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
U_01	A test
U_02	A test
K_01	A test

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	
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	17 <i>(total)</i>
10	Number of ECTS credits for contact hours <i>(1 ECTS credit = 25-30 hours of study time)</i>	0.68
11	Private study hours: background reading for lectures	4
12	Private study hours: preparation for classes	
13	Private study hours: preparation for tests	4
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	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	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. Purkis H.J. Building physics: acoustic, Oxford Pergamon Press, 19662. Bomberg M., Kisilewicz K., Mattock Ch. Methods of building physics, Kraków : Wydawnictwo Politechniki Krakowskiej, 20153. Moss K. J. Heat and mass transfer in buildings, London: New York, Taylor and Francis, 20074. Whalley, P. B. Two-phase flow and heat mass transfer, Oxford : Oxford University Press, 19965. Hewitt, G. F. R. International encyclopedia on heat mass transfer, Boca Raton ; New York : CRC Press, 19976. Davies, M. G. Building heat transfer, Chichester : John Wiley & Sons, 2004
Module website	