

## MODULE SPECIFICATION

Module code	
Module title in Polish	<b>Komputerowe projektowanie konstrukcji betonowych 1</b>
Module title in English	<b>Computer Design of Concrete Structures 1</b>
Module running from the academic year	<b>2016/2017</b>

### A. MODULE IN THE CONTEXT OF THE PROGRAMME OF STUDY

Field of study	<b>Civil Engineering</b>
Level of qualification	<b>First cycle</b> <i>(first cycle, second cycle)</i>
Studies profile	<b>Academic</b> <i>(academic/practical)</i>
Mode of study	<b>Full-time</b> <i>(full-time / part-time)</i>
Specialism	<b>Building Structures</b>
Organisational unit responsible for module delivery	<b>The Department of Strength of Materials and Concrete Structures</b>
Module co-ordinator	<b>Paweł Kossakowski, PhD hab, Eng.</b>
Approved by	<b>Marek Iwański, Professor</b>

### B. MODULE OVERVIEW

Module type	<b>Core module</b> <i>(core/programme-specific/elective HES*)</i>
Module status	<b>Compulsory module</b> <i>(compulsory / non-compulsory)</i>
Language of module delivery	<b>English</b>
Semester in the programme of study in which the module is taught	<b>Semester 7</b>
Semester in the academic year in which the module is taught	<b>Winter semester</b> <i>(winter / summer)</i>
Pre-requisites	<b>None</b> <i>(module code/module title, where appropriate)</i>
Examination required	<b>No</b> <i>(yes / no)</i>
ECTS credits	<b>3</b>

Mode of instruction	lectures	classes	laboratories	project	others
<b>Total hours per semester</b>			<b>45</b>		

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

### C. LEARNING OUTCOMES AND ASSESSMENT METHODS

<b>Module aims</b>	The aim of the module is to familiarise students with computer modelling, calculating, and design the concrete and reinforced concrete structural elements at a basic level.
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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 fundamentals of preparing diagrams and static analysis of rod structures.	l	B_W07	T1A_W03 T1A_W04 T1A_W07
W_02	A student has fundamental knowledge as regards designing concrete and reinforced concrete structures.	l	B_W09	T1A_W03 T1A_W07
W_03	A student has fundamental knowledge as regards numerical modelling and calculating rod concrete and reinforced concrete structures.	l	B_W17	T1A_W01 T1A_W02 T1A_W05 T1A_W07
U_01	A student can numerically model rod concrete and reinforced concrete structures at a basic level.	l	B_U12 B_U27	T1A_U01 T1A_U02 T1A_U04 T1A_U05 T1A_U07 T1A_U08 T1A_U09 T1A_U14 T1A_U15 T1A_U16
K_01	A student can work individually.	l	B_K01	T1A_K01 T1A_K03 T1A_K04
K_02	A student is responsible for the reliability of the obtained results.	l	B_K02	T1A_K02 T1A_K05 T1A_K07
K_03	A student formulates conclusions and describes the results of his/her own work.	l	B_K04	T1A_K01 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
1-4	Introduction. The conditions for obtaining a credit for the subject. The history of MES in terms of design history. The essence and basic steps in MES analysis.	W_03
5-10	Familiarising students with the Autodesk Robot Structural Analysis programs.	W_03 U_01
11-18	Preparing a MES model. Basic operations in Autodesk Robot Structural Analysis.	W_03 U_01
19-24	Displaying and deriving results.	W_03 U_01
25-33	Modelling a beam and a reinforced concrete column.	W_01 W_02 W_03 U_01

		K_01 K_03
34-45	Modelling a reinforced concrete rod column and beam spatial system.	W_01 W_02 W_03 U_01 K_01 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	Assessing individual realisation of tasks during the classes, defending home assignments
W_02	Assessing individual realisation of tasks during the classes, defending home assignments
W_03	Assessing individual realisation of tasks during the classes, defending home assignments
U_01	Assessing individual realisation of tasks during the classes, defending home assignments
K_01	Assessing individual realisation of tasks during the classes, defending home assignments
K_02	Assessing individual realisation of tasks during the classes, defending home assignments
K_03	Assessing individual realisation of tasks during the classes, defending home 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	<b>45</b>
4	Contact hours: attendance at office hours (2-3 appointments per semester)	<b>5</b>
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	<b>Number of contact hours</b>	<b>50</b> <i>(total)</i>
10	<b>Number of ECTS credits for contact hours</b> <i>(1 ECTS credit =25-30 hours of study time)</i>	<b>2.0</b>
11	Private study hours: background reading for lectures	
12	Private study hours: preparation for classes	
13	Private study hours: preparation for tests	<b>5</b>
14	Private study hours: preparation for laboratories	<b>10</b>
15	Private study hours: writing reports	
16	Private study hours: preparation for a final test in laboratories	<b>5</b>
17	Private study hours: preparation of a project/a design specification	<b>5</b>
18	Private study hours: preparation for an examination	
19		

20	<b>Number of private study hours</b>	<b>25</b> <i>(total)</i>
21	<b>Number of ECTS credits for private study hours</b> <i>(1 ECTS credit =25-30 hours of study time)</i>	<b>1.0</b>
22	<b>Total study time</b>	<b>75</b>
23	<b>Total ECTS credits for the module</b> <i>(1 ECTS credit =25-30 hours of study time)</i>	<b>3</b>
24	<b>Number of practice-based hours</b> <i>Total practice-based hours</i>	<b>70</b>
25	<b>Number of ECTS credits for practice-based hours</b> <i>(1 ECTS credit =25-30 hours of study time)</i>	<b>2.8</b>