

MODULE SPECIFICATION

Module code	
Module title in Polish	Metody komputerowego wspomagania projektowania 1
Module title in English	Computer-Aided Design 1
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 Mechanics, Metals Structures and Computer Methods
Module co-ordinator	Rafał Piotrowski, MSc, Eng.
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 3
Semester in the academic year in which the module is taught	Winter 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	2

Mode of instruction	lectures	classes	laboratories	project	others
Total hours per semester			30		

* 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 AutoCAD program and his practical use to make engineering drawings, and the fundamentals of RM-Win to static computations of the flat bar structures.
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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 the principles of descriptive geometry and technical drawing which concern the record and reading architectural, constructional, and communication drawings (as well as the principles of preparing them with the use of CAD).	l	B_W05	T1A_W01 T1A_W02 T1A_W03 T1A_W07
W_02	A student knows the fundamentals of mechanics and analysis of bar structures as regards statics.	l	B_W07	T1A_W03 T1A_W04 T1A_W07
U_01	A student is capable of interpreting drawings connected with the related branches.	l	B_U06	T1A_U03 T1A_U07 T1A_U15
U_02	A student can prepare and interpret architectural and constructional drawings; a student can also prepare graphical documentation in the environment of the selected CAD programs.	l	B_U07	T1A_U03 T1A_U05 T1A_U14 T1A_U15 T1A_U16
U_03	A student is capable of defining computation models which serve the purpose of computer analysis of constructions.	l	B_U08	T1A_U07 T1A_U08 T1A_U09 T1A_U15
U_04	A student is able to conduct a static analysis of bar structures statically determinate and indeterminate.	l	B_U09	T1A_U03 T1A_U05 T1A_U07 T1A_U09 T1A_U13 T1A_U14
K_01	A student can work individually.	l	B_K01	T1A_K01 T1A_K03 T1A_K04
K_02	A student completes and broadens his/her knowledge.	l	B_K03	T1A_K01 T1A_K05 T1A_K06

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	The elements of user interface, drawing area, dialogue box, status line, and selecting toolbars.	K_02
2	Drawing simple geometrical figures (a rectangle, an arch, a circle, an ellipse); utilising edit commands in order to generate complex shapes.	W_01 K_01 K_02
3	Creating, deleting and managing layers in subsequent stages of making constructional drawings. Learning and practical utilisation of precise drawing	W_01 U_01

	tools. Creating and editing text styles as well as generating texts (single- and multi-line texts).	K_01 K_02
4	Selection of parameters (pattern, scale, rotation angle) and hatching style, create your own hatch pattern (user defined). Hatching closed areas, inheriting and editing parameters.	W_01 U_01 K_01 K_02
5	Elements of dimension lines and parameters of the dimension style. Creating and editing your own dimension styles. Dimensioning elements using basic commands and tools for rapid dimensioning (QDIM).	W_01 U_01 K_01 K_02
6	The properties of blocks, defining attributes, creating file and disc blocks (with and without attributes). Inserting blocks, breaking blocks, editing of attributes.	W_01 U_01 K_01 K_02
7-8	Practice concerning drawing and editing commands on the basis of a constructional drawing of a reinforced concrete pole. Creating text style and dimensioning style for the reinforced concrete structures, entering element descriptions, and dimensioning reinforcements.	W_01 U_01 U_02 K_01 K_02
9	Printing from the MODEL: printing area, paper size, scale, page orientation, and print styles. The record and editing entered page settings.	W_01 U_01 U_02 K_01 K_02
10-11	Further practice of drawing and editing commands on the basis of a constructional drawing of a steel truss. Creating text style and dimensioning style for the steel structure. Entering descriptions of elements and welds, dimensioning details. Print composition.	W_01 U_01 U_02 K_01 K_02
12	Construction of the calculation model simple design in the RM-Win. Static calculations of a steel substring - combinations of loads, charts and value the internal forces. Interpretation of results. Print Layout.	W_01 W_02 U_03 U_04 K_01 K_02
13-14	Static calculations of the flat frame with a truss transom, which is a repetitive structural system of simple of steel hall.	W_01 W_02 U_03 U_04 K_01 K_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
U_01	A test
U_02	A test
U_03	A test
U_04	A test
K_01	A test
K_02	A test

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	30
4	Contact hours: attendance at office hours (2-3 appointments per semester)	1
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	31 <i>(total)</i>
10	Number of ECTS credits for contact hours <i>(1 ECTS credit =25-30 hours of study time)</i>	1.2
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	5
15	Private study hours: writing reports	
16	Private study hours: preparation for a final test in laboratories	15
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	20 <i>(total)</i>
21	Number of ECTS credits for private study hours <i>(1 ECTS credit =25-30 hours of study time)</i>	0.8
22	Total study time	51
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>	51
25	Number of ECTS credits for practice-based hours <i>(1 ECTS credit =25-30 hours of study time)</i>	2