Politechnika Świętokrzyska

WYDZIAŁ INŻYNIERII ŚRODOWISKA, GEOMATYKI I ENERGETYKI

MODULE SPECIFICATION

Module code	
Module name	**Informatyczne Podstawy Projektowania 1**
Module name in English	**Principles of Computer-Aided Design 1**
Valid from academic year	**2016/2017**

A. MODULE PLACEMENT IN THE SYLLABUS

Subject	**Environmental Engineering**
Level of education	**first cycle** (first cycle, second cycle)
Studies profile	**academic** (academic / practical)
Form and method of conducting classes	**Full-time** (full-time / part-time)
Specialisation	
Organisational unit responsible for module delivery	**Computer Laboratory**
Module co-ordinator	**Robert Piekoszewski, MSc, Eng.**
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 /l optional)
Language of module delivery	**Polish/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** (winter semester/summer semester)
Pre-requisites	**None** (module code/module title, where appropriate)
Examination	**No** (yes / no)
Number of ECTS credit points	**3**

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

Mode of instruction	lecture	classes	laboratories	project	other
Total hours per semester			**45**		

C. LEARNING OUTCOMES AND ASSESSMENT METHODS

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Module aims	The aim of the module is to master knowledge as regards handling programs which support designing and creating design documentation as well as documentation supporting engineering computations, e.g. AutoCAD, Corel, and spreadsheets.			
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 principles of work with the AutoCAD program (also creating, reading, and preparing construction drawings).	l	IŚ_W02	T1A_W02 T1A_W07
W_02	**A student knows spreadsheets (solving systems of equations, basic mathematical and statistical functions in Excel).**	l	IŚ_W01 IŚ_W05	T1A_W01 T1A_W02 T1A_W05 T1A_W07
W_03	**A student knows the principles of work with the package for creating and processing Corel graphics (as well as the export and import of graphical files to other multimedia applications).**	l	IŚ_W17	T1A_W02
U_01	**A student can independently make drawing documentation with the use of tools and settings in the AutoCAD program.**	l	IŚ_U10 IŚ_U03 IŚ_U04 IŚ_U12	T1A_U02 T1A_U03 T1A_U05 T1A_U07 T1A_U08 T1A_U09 T1A_U15
U_02	**A student can use a spreadsheet (on the basis of Excel) to solve engineering tasks.**	l	IŚ_U01 IŚ_U12	T1A_U08 T1A_U09
U_03	**A student can independently create and process graphics in the Corel program by using basic tools.**	l	IŚ_U03 IŚ_U07	T1A_U02 T1A_U05 T1A_U08
K_01	**A student is able to work independently and responsibly on drawing documentation or an engineering task.**	l	IŚ_K01 IŚ_K02	T1A_K02 T1A_K03 T1A_K04 T1A_K05
K_02	**A student understands the necessity of self-education as regards modern graphical program supporting designing and engineering calculations.**	l	IŚ_K03 IŚ_K09	T1A_K01 T1A_K02 T1A_K04

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

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No.	Topics	Module outcome code
1	Programs supporting designing (e.g. CAD). General principles of work with CAD programs on the basis of the AutoCAD program. User interface and customising the AutoCAD environment; communication with the program, the types of coordinates and units.	W_01 U_01 K_01
2	The possibilities of the AutoCAD program. Setting drawing parameters, model and sheet space, the limits of a drawing, determining cursor and mesh jump (as well as the format of the drawing). Obtaining data from AutoCAD and data export to other programs.	W_01 U_01 K_01
3	Determining parameters for drawing, precision drawing, basic drawing commands.	W_01 U_01 K_01
4	Basic edition commands (object transformation).	W_01 U_01 K_01
5	Creating layers and the philosophy of work with them.	W_01 U_01 K_01
6	Placing texts on drawings. Entering single text verses. Text editing. Creating own text styles. Hatching.	W_01 U_01 K_01
7	Dimensioning. Dimensioning parameters. Creating students' own dimensioning styles. Using dimensioning commands.	W_01 U_01 K_01
8	Grouping objects and block techniques; operations on blocks.	W_01 U_01 K_01
9	The scale of drawings. The parameters of plotting drawings.	W_01 U_01 K_01 K_02
10	The elements of graphics (creating and processing them); discussing graphical programs (basic information). The fundamentals of work with integrated package to create and process Corel graphics.	W_03 U_03 K_01
11	Exercises with the package to create and process Corel graphics (familiarising students with basic possibilities and functions).	W_03 U_03 K_01 K_02
12	Spreadsheets (general principles of work; the principles of writing formulas and macros. The application of mathematical and logic functions in Excel.	W_02 U_02 K_01
13	Utilising Excel spreadsheets for project calculations. The types of diagrams (creating them). Editing and transferring them to inter programs.	W_02 U_02 K_01 K_02

Assessment methods

| Module outcome code | Assessment methods
(Method of assessment; for module skills − reference to specific project, laboratory and similar tasks) |
|---|---|
| W_01 | A report on laboratory classes |

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W_02	A report on laboratory classes
W_03	A report on laboratory classes
W_04	A report on laboratory classes
U_01	A report on laboratory classes
U_02	A report on laboratory classes
U_03	A report on laboratory classes
U_04	A report on laboratory classes and a test
U_05	A report on laboratory classes
U_06	A report on laboratory classes
K_01	A test
K_02	A test

D. STUDENT LEARNING ACTIVITIES

ECTS credit points		
	Type of student's activity	**Student's workload**
1	Contact hours: participation in lectures	
2	Contact hours: participation in classes	
3	Contact hours: participation in laboratories	**45**
4	Contact hours: attendance at office hours (2-3 appointments per semester)	**3**

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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**	**48** *(sum)*
10	**Number of ECTS credits for contact hours** *(1 ECTS credit =25-30 hours of study time)*	**1.92**
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	**10**
15	Private study hours: writing reports	**15**
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**	**27** *(sum)*
21	**Number of ECTS credits for private study hours** *(1 ECTS credit =25-30 hours of study time)*	**1.08**
22	**Total study time**	**75**
23	**Total ECTS credits for the module** *(1 ECTS credit =25-30 hours of study time)*	**3**
24	**Number of practice-based hours** *Total practice-based hours*	**75**
25	**Number of ECTS credits for practice-based hours** *(1 ECTS credit =25-30 hours of study time)*	**3**

E. READING LIST

References	*1. Andrzej Jaskulski „AutoCad 2017/ LT2017 / 360+. Kurs projektowania parametrycznego i nieparametrycznego 2D i 3D, PL/ENG"* *2. Andrzej Pikoń „AutoCAD 2016 PL/ENG. Pierwsze kroki"*
Module website	