



MODULE DESCRIPTION

Module code	
Module name	Programy grafiki rastrowej, wektorowej i 3d
Module name in English	Raster, Vector, and 3D Graphics Programs
Valid from academic year	2012/2013

MODULE PLACEMENT IN THE SYLLABUS

Subject	Computer Science
Level of education	1st degree <i>(1st degree / 2nd degree)</i>
Studies profile	General <i>(general / practical)</i>
Form and method of conducting classes	Full-time <i>(full-time / part-time)</i>
Specialisation	
Unit conducting the module	The Department of Computer Science Applications
Module co-ordinator	Andrzej Kułakowski, PhD, Eng.
Approved by:	

MODULE OVERVIEW

Type of subject/group of subjects	Major <i>(basic / major / specialist subject / conjoint / other HES)</i>
Module status	Non-compulsory <i>(compulsory / non-compulsory)</i>
Language of conducting classes	Polish
Module placement in the syllabus semester	6th semester
Subject realisation in the academic year	Summer semester <i>(winter / summer)</i>
Initial requirements	Programming <i>(module codes / module names)</i>
Examination	No <i>(yes / no)</i>
Number of ECTS credit points	5

Method of conducting classes	Lecture	Classes	Laboratory	Project	Other
Per semester	30		30		

TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS



Projekt współfinansowany ze środków Unii Europejskiej w ramach Europejskiego Funduszu Społecznego

Module target	The aim of the module is to raise students' awareness as regards utilising various aspects concerning the utilisation of generic graphical software together with the application and programming in script languages of the selected graphical applications.
----------------------	---

Effect symbol	Teaching results	Teaching methods (l/c/lp/other)	Reference to subject effects	Reference to effects of a field of study
W_01	A student has basic knowledge as regards the range of utilisation of generic graphical software.	l	K_W12	T1A_W04 T1A_W07 InzA_W02 InzA_W05
W_02	A student has systematised knowledge as regards the methodology and programming techniques in script languages automating the work of graphical programs.	l	K_W06, K_W07, K_W16	T1A_W03 T1A_W04 T1A_W07 InzA_W02 InzA_W05
U_01	A student can utilise the learnt methods to create graphical projects.	l	K_U18	T1A_U07 T1A_U15 T1A_U16 InzA_U07 InzA_U08
U_02	A student is able to utilise the acquired programming knowledge to implement scripts and work automation of graphical programs.	l	K_U13, K_U18	T1A_U07 T1A_U08 T1A_U09 T1A_U13 T1A_U14 T1A_U15 T1A_U16 InzA_U02 InzA_U05 InzA_U06 InzA_U07 InzA_U08
K_01	A student understands the necessity of continuous self-education and learns the examples and various aspects of utilising graphical software.	l/l	K_K01, K_K02	T1A_K01, T1A_K02, InzA_K01
K_02	A student is able to co-operate with the users of information systems in order to explain the principles of using graphical programmes.	l/l	K_K06	T1A_K07

Teaching contents:

Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1	Introduction to raster graphics. Programs of raster graphics. GIMP editors. The examples of creating raster graphics in GIMP.	W_01, K_01
2	Advanced functions and tools of raster programs. Creating templates. Add-ons and plugins of the GIMP program.	W_01, W_02
3	Programming in the script language. Creating scripts in the GIMP program.	W_01, W_02
4	Vector graphics programs. The principles of creating and describing vector objects; the properties of various objects on a plain in 3D space; screen coordinates scaling.	W_01, K_01, K_02



Projekt współfinansowany ze środków Unii Europejskiej w ramach Europejskiego Funduszu Społecznego

5	Vector graphics programs Presenting three-dimensional objects on a plain, mathematical fundamentals of building and modifying vector objects.	W_01, W_02
6	Vector graphics programs. Building and modifying graphical objects in a sample graphical environment using macros: building a new object and describing its properties, placing the object on a drawing plain, making modification of the marked objects.	W_01, W_02
7	Vector graphics programs. Programming in the selected script language. Creating scripts in a vector graphics program.	W_01, W_02
8	Vector graphics programs. Creating graphical objects with the use of the selected high-level language: graphical formulas, groups of accessible objects, the methods of building and modifying the selected objects of vector graphics, visualization of the designed graphical objects.	W_01, W_02
9	The fundamentals of 3D graphics. 3D graphics programs. 3D graphics program interface. The examples of interaction tools.	W_01, K_01, K_02
10	3D graphics programs. Mathematics in 3D graphics. Basic notions of three-dimensional modelling. The examples of modelling 3D objects.	W_01, K_01, K_02
11	3D graphics programs. The applications of 3D graphics programs. A script console: starting and commanding.	W_01, W_02
12	3D graphics programs. Script language: variables and expressions, operators, complex data, controlling. The examples of scripts.	W_01, W_02
13	3D graphics programs. Observing 3D objects. A view and a camera. Camera motion animation tool. Simple animations of 3D objects.	W_01, W_02
14	The automation of work in 3D graphics programs with the use of script languages.	W_01, W_02
15	A summary and a test.	W_01, W_02, K_01, K_02

Teaching contents as regards laboratory classes

Laboratory class number	Teaching contents	Reference to teaching results for a module
1	Familiarising students with GIMP and a raster graphics programs. Simple examples of picture editing.	U_01, K_01
2	Creating a www template in GIMP.	U_01, U_02,
3	Advanced GIMP functions. Familiarising students with GIMP add-ons.	U_02
4	Creating scripts in GIMP.	U_01, U_02,
5	Vector graphics programs. Learning a sample vector graphics environment, creating basic graphical objects, property change as well as the method of visual presentation of these objects.	U_01, K_01, K_02
6	Vector graphics programs. Creating and editing vector models. Advanced functions of vector graphics models.	U_01, U_02,
7	Vector graphics programs. Creating macros (in the form of a function and procedures) for managing a graphical environment: adding and deleting sides, creating new objects and modifying the existing ones, and determining methods of developing macros.	U_01, U_02,
8	The script language of a vector graphics program.	U_01, U_02,
9	Vector graphics programs. Building graphical objects in the selected programming environment	U_01, U_02, K_01
10	3D graphics programs. Learning a sample 3D graphics program. Application interface and simple examples of 3D graphics editing.	U_01, U_02,
11	3D graphics programs. The assignment concerning building a 3D model and its description, part 1.	U_01, K_01
12	3D graphics programs. The assignment concerning building a 3D model and its description, part 2.	U_01, U_02,
13	3D graphics programs. Creating scripts for activity automation.	U_02
14	The script language of 3D graphics program.	U_01, U_02,



15	3D graphics programs. Making camera motion animation to observe the built object. Explaining the notion concerning 3D graphics. Presenting and assessing the completed assignments.	U_01, U_02, K_01, K_02
----	---	---------------------------

The methods of assessing teaching results

Effect symbol	Methods of assessing teaching results <i>(assessment method, including skills – reference to a particular project, laboratory assignments, etc.)</i>
W_01	A test
W_02	A test
U_01	Tests and reports
U_02	Tests and reports
K_01	A test
K_02	Presenting an independently completed project

STUDENT'S INPUT

ECTS credit points		
	Type of student's activity	Student's workload
1	Participation in lectures	30
2	Participation in classes	
3	Participation in laboratories	30
4	Participation in tutorials (2-3 times per semester)	4
5	Participation in project classes	
6	Project tutorials	
7	Participation in an examination	
8		
9	Number of hours requiring a lecturer's assistance	64 <i>(sum)</i>
10	Number of ECTS credit points which are allocated for assisted work <i>(1 ECTS credit point=25-30 hours)</i>	2.29
11	Unassisted study of lecture subjects	20
12	Unassisted preparation for classes	
13	Unassisted preparation for tests	3
14	Unassisted preparation for laboratories	20
15	Preparing reports	30
16	Preparing for a final laboratory test	3
17	Preparing a project or documentation	
18	Preparing for an examination	
19	Preparing questionnaires	
20	Number of hours of a student's unassisted work	76 <i>(sum)</i>
21	Number of ECTS credit points which a student receives for unassisted work <i>(1 ECTS credit point=25-30 hours)</i>	2.71
22	Total number of hours of a student's work	140
23	ECTS credit points per module <i>1 ECTS credit point=25-30 hours</i>	5



Projekt współfinansowany ze środków Unii Europejskiej w ramach Europejskiego Funduszu Społecznego

24	Work input connected with practical classes <i>Total number of hours connected with practical classes</i>	83
25	Number of ECTS credit points which a student receives for practical classes <i>(1 ECTS credit point=25-30 hours)</i>	2.96