



## MODULE DESCRIPTION

Module code	
Module name	<b>Podstawy grafiki komputerowej</b>
Module name in English	<b>The Fundamentals of Computer Graphics</b>
Valid from academic year	<b>2012/2013</b>

## MODULE PLACEMENT IN THE SYLLABUS

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

## MODULE OVERVIEW

Type of subject/group of subjects	<b>Major</b> <i>(basic / major / specialist subject / conjoint / other HES)</i>
Module status	<b>Compulsory</b> <i>(compulsory / non-compulsory)</i>
Language of conducting classes	<b>Polish</b>
Module placement in the syllabus - semester	<b>5<sup>th</sup> semester</b>
Subject realisation in the academic year	<b>Winter semester</b> <i>(winter / summer)</i>
Initial requirements	<b>Programming in the C Language, Algorithms and Data Structures</b> <i>(module codes / module names)</i>
Examination	<b>Yes</b> <i>(yes / no)</i>
Number of ECTS credit points	<b>5</b>

Method of conducting classes	Lecture	Classes	Laboratory	Project	Other
Per semester	<b>30</b>		<b>30</b>	<b>15</b>	

## TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS



Projekt współfinansowany ze środków Unii Europejskiej w ramach Europejskiego Funduszu Społecznego

<b>Module target</b>	The aim of the module is to acquaint students with 2D and 3D computer graphics, colour models, algorithms of drawing primitives, cutting and filling, and geometric transformations. Raster pictures processing. Visualisation models in 3D graphics. Programming with the use of support libraries as regards 2D and 3D graphics handling.
----------------------	---

Effect symbol	Teaching results	Teaching methods (l/c/l/p/other)	Reference to subject effects	Reference to effects of a field of study
W_01	A student can list and characterise basic algorithms applied in 2D and 3D graphics.	l	K_W12	T1A_W04, T1A_W07
W_02	A student knows main problems connected with 2D and 3D computer graphics; in addition, a student knows classical methods and modern trends of solving them.	l	K_W12	T1A_W04, T1A_W07
U_01	A student can select appropriate visualisation methods according to the possibilities of graphics hardware.	l	K_U18	T1A_U07, T1A_U16
U_02	A student can suggest an appropriate visualisation method using 2D/3D computer graphics for the selected problem.	l	K_U18	T1A_U07, T1A_U16
U_03	A student is able to design and implement an application for problem visualisation using Open Graphics Library.	l	K_U01, K_U18	T1A_U01, T1A_U16
K_01	A student can divide a programming problem into elements and co-operate in a team while implementing it.	p	K_K03	T1P_K03

### Teaching contents:

#### Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1-4	The fundamentals of 2D computer graphics, basic algorithms in 2D graphics, colour models, and geometric transformations.	W_01, W_02
5-6	Processing raster pictures.	W_01, W_02
7-15	The fundamentals of 3D computer graphics, visualisation models in 3D graphics, and algorithms of 3D graphics. Programming with Open Graphics Library supporting 3D computer graphics.	W_01, W_02, U_01, U_03

#### Teaching contents as regards laboratory classes

Laboratory class number	Teaching contents	Reference to teaching results for a module
1-6	The fundamentals of 2D graphics programming.	U_02, K_01
7-15	The fundamentals of 3D graphics programming using Open Graphics Library.	U_01, U_03, K_01

### The characteristics of project assignments



A project assignment consists in preparing an application realising a selected algorithm of processing raster pictures (U\_02, K\_01).

### 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 written examination
W_02	A written examination
U_01	A laboratory class assignment, a test on laboratory classes
U_02	A laboratory class assignment, a test on laboratory classes, and a project assignment
U_03	A laboratory class assignment, a test on laboratory classes
K_01	A laboratory class assignment, a test on laboratory classes

### 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)	5
5	Participation in project classes	15
6	Project tutorials	5
7	Participation in an examination	2
8		
9	<b>Number of hours requiring a lecturer's assistance</b>	<b>87</b> <i>(sum)</i>
10	<b>Number of ECTS credit points which are allocated for assisted work</b> <i>(1 ECTS credit point=25-30 hours)</i>	<b>3</b>
11	Unassisted study of lecture subjects	8
12	Unassisted preparation for classes	-
13	Unassisted preparation for tests	8
14	Unassisted preparation for laboratories	8
15	Preparing reports	-
16	Preparing for a final laboratory test	9
17	Preparing a project or documentation	15
18	Preparing for an examination	15
19	Preparing questionnaires	
20	<b>Number of hours of a student's unassisted work</b>	<b>63</b> <i>(sum)</i>
21	<b>Number of ECTS credit points which a student receives for unassisted work</b> <i>(1 ECTS credit point=25-30 hours)</i>	<b>2</b>
22	<b>Total number of hours of a student's work</b>	<b>150</b>
23	<b>ECTS credit points per module</b> <i>1 ECTS credit point=25-30 hours</i>	<b>5</b>
24	<b>Work input connected with practical classes</b>	<b>65</b>



Projekt współfinansowany ze środków Unii Europejskiej w ramach Europejskiego Funduszu Społecznego

		<i>Total number of hours connected with practical classes</i>
25	<b>Number of ECTS credit points which a student receives for practical classes</b> <i>(1 ECTS credit point=25-30 hours)</i>	<b>2</b>