



MODULE DESCRIPTION

Module code	
Module name	Programowanie grafiki komputerowej
Module name in English	Computer Graphics Programming
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	Information Systems
Unit conducting the module	The Department of Computer Science
Module co-ordinator	Grzegorz Łukawski, 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	7th semester
Subject realisation in the academic year	Winter semester <i>(winter / summer)</i>
Initial requirements	Computer Graphics <i>(module codes / module names)</i>
Examination	No <i>(yes / no)</i>
Number of ECTS credit points	7

Method of conducting classes	Lecture	Classes	Laboratory	Project	Other
Per semester	30		15	30	

TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS



Projekt współfinansowany ze środków Unii Europejskiej w ramach Europejskiego Funduszu Społecznego

Module target	3D graphics programming with the use of OpenGL and DirectX; shader programming with the use of GLSL. Special effects in 3D graphics and animation: transparency, shades, bump mapping, environment mapping, and advanced lighting. Computer graphics algorithms connected with 3D graphics.
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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 knows the fundamentals of 3D graphics programming with OpenGL and DirectX.	l	K_W12	T1A_W04, T1A_W07
W_02	A student can list and characterise the advantages of direct programming of GPU. In addition, a student is acquainted with the basics of GLSL.	l	K_W06, K_W12	T1A_W04, T1A_W07,
U_01	The ability of programming 3D graphics with OpenGL at the advanced level.	l	K_U01, K_U18	T1A_U01, T1A_U16
U_02	The ability of programming 3D graphics with DirectX at the elementary level.	l	K_U01, K_U18	T1A_U01, T1A_U16
U_03	The ability of programming a GPU with GLSL.	l	K_U01, K_U05, K_U12, K_U18	T1A_U01, T1A_U09, T1A_U16
K_01	A student is capable of dividing a programming issue into elements and co-operate in a team while implementing it.	p	K_K03	T1A_K03

Teaching contents:

Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1-5	3D graphics programming with OpenGL at the advanced level, special effects in 3D graphics and animation.	W_01
6-10	The fundamentals of programming a GPU with GLSL.	W_02
11-15	The fundamentals of programming 3D graphics with DirectX.	W_01

Teaching contents as regards laboratory classes

Laboratory class number	Teaching contents	Reference to teaching results for a module
1-2	3D graphics programming with OpenGL at the advanced level, realising special effects.	U_01
3-5	The fundamentals of programming a GPU with GLSL.	U_03
6-8	The fundamentals of programming 3D graphics with DirectX.	U_02

The characteristics of project assignments

A project assignment consists in preparing an application which realises 3D graphics rendering with specific tools and libraries (U_01, U_03, and 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 test on the lectures.
W_02	A test on the lectures.
U_01	Laboratory class assignments and a test on laboratory classes.
U_02	Laboratory class assignments and a test on laboratory classes.
U_03	Laboratory class assignments and a test on laboratory classes.
K_01	Laboratory class and project assignments.

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	15
4	Participation in tutorials (2-3 times per semester)	10
5	Participation in project classes	30
6	Project tutorials	10
7	Participation in an examination	-
8		
9	Number of hours requiring a lecturer's assistance	95 <i>(sum)</i>
10	Number of ECTS credit points which are allocated for assisted work <i>(1 ECTS credit point=25-30 hours)</i>	4
11	Unassisted study of lecture subjects	15
12	Unassisted preparation for classes	-
13	Unassisted preparation for tests	10
14	Unassisted preparation for laboratories	15
15	Preparing reports	10
16	Preparing for a final laboratory test	10
17	Preparing a project or documentation	20
18	Preparing for an examination	-
19	Preparing questionnaires	
20	Number of hours of a student's unassisted work	80 <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>	3
22	Total number of hours of a student's work	175
23	ECTS credit points per module <i>1 ECTS credit point=25-30 hours</i>	7
24	Work input connected with practical classes <i>Total number of hours connected with practical classes</i>	95
25	Number of ECTS credit points which a student receives for practical classes <i>(1 ECTS credit point=25-30 hours)</i>	4