Załącznik Nr 5 do Zarz. Nr 33/11/12

(pieczęć wydziału)

COURSE DESCRIPTION

1. Course title: COMPUTER GRAPHICS	**2. Course code:** CG
3. Validity of course description: 2018/2019	
4. Level of studies: first degree	
5. Model of studies: stationary	
6. Field of study: INFORMATICS	
7. Profile of studies: general academic	
8. Programme: COMPUTER GRAPHICS AND SOFTWARE	
9. Semester: 4	
10. Faculty teaching the course: Faculty of Automatic Control, Electronics and Computer Science, Institute of Informatics	
11. Course instructor: Ph.D.Ewa Lach	
12. Course classification: specialty subjects	
13. Course status: obligatory	
14. Language: english	
15. Pre-requisite qualifications: Computer Programing (C, C++), Algebra and Analytic Geometry, Fundamentals of computer programming, Computer Graphics	
16. Course objectives: The course aims to provide the practical skills of the 3D computer graphics algorithms, and selected topics of 2D computer graphics. The project will enable students to get in touch with modern solutions in the field photo-realistic and interactive 3D graphics offered in world literature, create their own solutions to the projects as well as understanding fundamental conditions of modern computer animation.	

17. Description of learning outcomes:[1]

Nr	Lerning outocmes description	Method of assessment	Teaching methods	Reference code
1	Knowledge of methods and tools used during the implementation of graphic applications.	Project	Project	K1A_W11, K1A_W13, K1A_W14, K1A_W22, K1A_U08, K1A_U12, K1A_U21, K1A_K02
2	Ability to apply basic raster graphics algorithms.	Project	Project	K1A_W11, K1A_W13, K1A_W14, K1A_W22, K1A_U08, K1A_U12, K1A_U21, K1A_K02

[1] należy wskazać ok. 5 – 8 efektów kształcenia

3	Ability to use different lighting models	Project	Project	K1A_W11, K1A_W13, K1A_W14, K1A_W22, K1A_U08, K1A_U12, K1A_U21, K1A_K02
4	Ability to implement simple 3D transformations.	Project	Project	K1A_W11, K1A_W13, K1A_W14, K1A_W22, K1A_U08, K1A_U12, K1A_U21, K1A_K02
5	Ability to implement a simple computer animation.	Project	Project	K1A_W11, K1A_W13, K1A_W14, K1A_W22, K1A_U08, K1A_U12, K1A_U21, K1A_K02

18. Teaching modes and hours

Lecture / BA /MA Seminar / Class / Project / Laboratory:

0/0/0/0/30/0

19 Syllabus description:

The project presents practical knowledge concerning creation of simple graphical applications. In this way, students have the opportunity to test in practice the knowledge acquired during previous Computer Graphics courses. Presented issues implemented within the framework of projects, are following: raster algorithms, clipping and windowing, affine transformations and representation of objects, elimination of invisible surfaces, lighting models, raytracing, curves and parametric surfaces, computer animation, skeleton animation techniques, collision detection, particle effects, vertex and pixel programs.

20. Exam: no

21. Primary sources:

- James D. Foley, Andries van Dam, Steven K. Feiner, John F. Hughes, Richard L. Philips: Wprowadzenie do grafiki komputerowej (2011)
- Andries van Dam, Morgan McGuire , David F. Sklar , James D. Foley, Steven K. Feiner , Kurt Akeley Computer Graphics: Principles and Practice (3rd Edition), 2013.

22. Secondary sources:

- A series of books: Graphics Gems
- Francis S Hill Jr. , Stephen M Kelley: Computer Graphics Using OpenGL (3rd Edition).
- Sumanta Guha: Computer Graphics Through OpenGL: From Theory to Experiments,
- Richard S. Wright Jr., Benjamin Lipchak: OpenGL. Księga eksperta. Helion
- OpenGL Programming Guide
- K. Dempski, DirectX. Rendering w czasie rzeczywistym, Helion.

23. Total workload required to achieve learning outcomes

Lp.	Teaching mode	Contact hours / Student workload hours
1	Lecture	-/-
2	Classes	-/-
3	Laboratory	-/-
4	Project	15/15
5	Seminar	-/-
6	Other	-/-
	Total number of hours	15/15

24. Total hours: 30

25. Numbers of ECTS: 2

26. Number of ECTS credits allocated for contact hours: 1

27. Number of ECTS credits allocated for in-practice hours (laboratory classes, projects): 2

26. Comments:

Approved:

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(date, Instructor's signature) (date, the Director of the Faculty Unit signature)