UNIVERSITY
WARMIA AND MAZURY IN OLSZTYN

Faculty of Mathematics and Computer Science

Course title: **Introduction to Machine Graphics**

ECTS credit allocation (and other scores): **3**

Semester: autumn

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Engineering and technology

Language: English /Polish

Number of hours per semester: 30 lectures + 30 classes = 60 hours

Course coordinator/ Department and e-mail: Aleksander Denisiuk/ WMiI, denisiuk@matman.uwm.edu.pl

Erasmus coordinator Anna Szczepkowska/ WMiI, erasmuswmii.uwm.edu.pl

Type of classes: classes and lectures

Substantive content

CLASSES:

Introduction to visual perception and color models
Introduction to image file formats and image compression basics
Introduction to rasterizacji
Introduction to Algorithms clipping and windowing
Introduction to the geometry of the machine
Introduction to project
Introduction to illuminate
Introduction to Texture
Introduction to Bezier curves
Introduction to the History of OpenGL
The introduction to the basics of OpenGL
Introduction to the transformation in OpenGL
LECTURES:

Introduction to visual perception and color models
Introduction to image file formats and image compression basics
Introduction to rasterizacji
Introduction to Algorithms clipping and windowing
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LEARNING PURPOSE

Introducing the student to the issues of machine (computer) graphics and mastering his knowledge basic in this field and the acquisition of skills in the field of programming simple tasks of computational geometry and visualization

On completion of the study programme the graduate will gain:

Knowledge:

knows and understands the concepts of data visualization on a computer and flow organization
relevant information streams as well as structured knowledge of geometric methods
used in visualization
Skills:

Can implement the known algorithms in the field of issues related to computer visualization

Social Competencies:

understands the need and knows the possibilities of continuous training (second and third degree studies, studies postgraduate courses) - improving professional, personal and social competences

BASIC LITERATURE

Michał Jankowski: Elementy grafiki komputerowej, WNT, 2006.
Przemyslaw Kiciak: Grafika komputerowa I, Portal z materiałami dydaktycznymi Wydziału Matematyki, Informatyki i Mechaniki UW, 2011

SUPPLEMENTARY LITERATURE

Samuel R. Buss: 3D Computer Graphics: A Mathematical Introduction with OpenGL, Cambridge University Press, 2003.
Eddy Luten: OpenGL Book 2011
Graham Sellers, Richard S. Wright, Jr., Nicholas Haemel: OpenGL SuperBible: Comprehensive Tutorial and Reference (6th Edition), Addison-Wesley Professional, 2013.

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 3,86 ECTS points,

Student's independent work: 2,14 ECTS points,