Course Syllabus

Course from study programme for the cycle: 2023/2024

I. General Information

Course name	Computer graphics
Programme	Informatics
Level of studies (BA, BSc, MA, MSc, long-cycle MA)	BA
Form of studies (full-time, part-time)	full-time
Discipline	informatics, mathematics
Language of instruction	english

Course coordinator	dr Armen Grigoryan

Type of class (use only the types mentioned below)	Number of teaching hours	Semester	ECTS Points
lecture			2
tutorial			
classes			
laboratory classes	15	2	
workshops			
seminar			
introductory seminar			
foreign language classes			
practical placement			
field work			
diploma laboratory			
translation classes			
study visit			

Course pre-requisites	Basic computer skills

II. Course Objectives

Teaching students a basic knowledge and skills in the field of the 3D computer graphics, mainly in a practical aspect.

III.   **Course learning outcomes with reference to programme learning outcomes**

Symbol	Description of course learning outcome	Reference to programme learning outcome
KNOWLEDGE		
W_01	The student understands the basic concepts of the 3D computer graphics.	K_W11
W_02	The student understand the basic concepts of animation in computer graphics.	K_W11
SKILLS		
U_01	The student skilfully operates the 3D computer graphics tools.	K_U01, K_U02, K_U04, K_U17
U_02	The student can design graphics dedicated to web sites, user interfaces and interactive applications.	K_U02, K_U17, K_U25
U_03	The student can create 3D animations and special effects.	K_U02, K_U17, K_U25
SOCIAL COMPETENCIES		
K_01	Student is aware of the importance of computer graphics and its applications.	K_K02
K_02	The student is aware of deepening his knowledge in the field of computer graphics	K_K01, K_K02

IV.   **Course Content**

Creating 3D graphics using Blender. The interface. Basic operations in object mode: moving, rotating, scaling. Modeling the geometry of an object in edit mode. Building more complex 3D scenes. Setting material properties. Texturing. Spline curves and their applications. Particle systems and their applications. Setting the lighting. Camera setting. Rendering of scene images.

V.   **Didactic methods used and forms of assessment of learning outcomes**

Symbol	Didactic methods *(choose from the list)*	Forms of assessment *(choose from the list)*	Documentation type *(choose from the list)*
KNOWLEDGE			
W_01	Laboratory classes	Test	Protocol
W_02	Laboratory classes	Test	Protocol
SKILLS			
U_01	Laboratory classes	Test	Protocol
U_02	Laboratory classes	Test	Protocol
U_03	Laboratory classes	Test	Protocol
SOCIAL COMPETENCIES			
K_01	Laboratory classes	Test	Protocol
K_02	Laboratory classes	Test	Protocol

VI.   **Grading criteria, weighting factors..…**

A test.

91% – 100% excellent
81% – 90% very good
71% – 80% good
61% – 70% satisfactory
50% – 60% sufficient
Less than 50% fail

Detailed rules of assessment are given to students with each edition of the subject.

VII.   Student workload

Form of activity	Number of hours
Number of contact hours (with the teacher)	laboratory classes - 15 consultations - 15
Number of hours of individual student work	15

VIII.   Literature

Basic literature
Blender Reference Manual: http://www.blender.org/manual/. Simonds, B., „Blender Master Class : A Hands-On Guide to Modeling, Sculpting, Materials, and Rendering", No Starch Press, 2013.
Additional literature
Blain J.M., „The Complete Guide to Blender Graphics : Computer Modeling and Animation", Milton: CRC Press LLC, 2021.