

Syllabus of the educational discipline

« COMPUTER GRAPHICS »

Cycle of Higher Education	<i>First cycle of higher education (Bachelor's degree)</i>
Field of Study	<i>12 Information Technologies</i>
Specialty	<i>123 Computer engineering</i>
Educational program	<i>Computer systems and networks</i>
Discipline status	<i>Compulsory</i>
Teaching language	<i>English</i>
Year of studies, semester	<i>2 year (3 semester)</i>
Number of credits ECTS	<i>4 credits</i>
Distribution by types of trainings and hours of study	<i>Lectures, Laboratory studies, Independent training</i>
Form of final assessment	<i>Test</i>
Teacher	<i>Korol Yu.Yu., associate professor of the department of computer systems and network</i>
Teacher's contacts	<i>yuriy.korol@uzhnu.edu.ua</i>
Course Schedule	<i>According to the timetable</i>
<p><i>The purpose of studying the discipline "Computer Graphics" is to familiarize students with the principles of modern graphics systems, mastering the algorithmic foundations of two-dimensional graphics, the acquisition of skills to create graphic images using modern image editing tools.</i></p> <p><i>As a result of studying the discipline the student must:</i></p> <p><i>know:</i></p> <ul style="list-style-type: none"> <i>- methods and tools for image processing; the current state and directions of development of computer graphics</i> <i>- modern methods and technologies used in working with images. Application of these methods and technologies.</i> <p><i>be able to:</i></p> <ul style="list-style-type: none"> <i>- think systematically and use creativity. Decide on the appropriateness of a particular technology and equipment when working with computer graphics.</i> 	
Prerequisites for learning Programming, Discrete Mathematics, Probability Theory and Mathematical Statistics	
Content of the educational discipline	
<p>Topic 1. Introduction. Basic concepts and tasks of the course</p> <p>Topic 2. Hardware and software for computer graphics</p> <p>Topic 3. Types of computer graphics</p> <p>Topic 4. Color. Color models</p> <p>Topic 5. Storage formats for image files</p> <p>Topic 6. Three-dimensional modeling</p>	
Course page on the Moodle platform (personal training system)	<i>Syllabus of the educational discipline, hyperlinks to electronic publications of the discipline, recommended literature, students' attendance, lecture materials, presentations, questions for self-control, methodical materials for laboratory works, tests, tasks for checking students' knowledge. https://moodle.uzhnu.edu.ua</i>
Recommended literature	
<ol style="list-style-type: none"> <i>1. Michael Abrash's Graphics Programming Black Book - Coriolis Group; No cd-rom or Software; Book Only edition, 1997. - 1342p.</i> <i>2. John Hughes Computer Graphics: Principles and Practice. - Addison-Wesley Professional; 3rd edition, 2013. - 1264p.</i> <i>3. Gabriel Gambetta Computer Graphics from Scratch: A Programmer's Introduction to 3D Rendering. - No Starch Press, 2021. - 248p.</i> 	
Assessment system of learning outcomes	

The ECTS grade that a student receives after studying a credit module of a discipline is determined according to the student's rating. A student's credit module rating consists of the points the student receives during the semester for the following types of work:

1. Modular control work (MCW) duration of 2 acad. hours each. The maximum number of points for the MCW is 50 points.

2. Performance of laboratory works.

During the semester, students perform laboratory works(maximum number of points - 40)

Scores on individual and independent work of students are awarded for: preparation of essays, modernization of tasks, creative approach to task performance, performance of tasks to improve didactic materials on the discipline: 0-10 points for each module.

Each module is assessed a maximum of 100 points. At the end of the discipline a rating score is derived as the arithmetic average of the points from the two modules.

ECTS and national grading scale

Mark scale	ECTS	Exam	Test
90 - 100	A	Excellent	Satisfied
82 - 89	B	Good	
74 - 81	C		
64 - 73	D	Satisfactory	
60 - 63	E		
35 - 59	FX	“Unsatisfactory” with possibility to pass the exam again	“Not satisfied” with possibility to pass the exam again
1 - 34	F	“Unsatisfactory” with obligatory repeated study of the discipline	“Not satisfied” with obligatory repeated study of the discipline