



CS 426

MULTIMEDIA TECHNOLOGY

Adopted: Protocol No 7/30.01.2019

Lecturer: Associate Prof. Yanislav Zhelev, PhD

ANNOTATION

The discipline provides knowledge of the currently used multimedia technologies and standards. The course teaches basic products for working with vector graphics, raster graphics and two-dimensional animation.

Students are trained to create integrated multimedia projects. There are also the basics of multimedia programming.

MAIN OBJECTIVES

The main objective of the discipline is:

- to form theoretical knowledge and practical skills for working with multimedia environments, authors, systems and technologies for the creation of multimedia documents and applications;
- to acquire practical skills in working with multimedia hardware platforms and peripherals;
- to learn how to integrate different types of media (text, graphic images, animation, video, audio, etc.);
- to familiarise themselves with the main types of multimedia standards and formats such as AVI, WAVE, Flic, MPEG, JPEG, MIDI, etc.;
- acquire basic practical skills for working with Adobe Photoshop, Adobe Illustrator, Adobe Animate, JavaScript.

PREREQUISITES

The discipline requires prior knowledge of the following disciplines: Computer Graphics, Higher Mathematics.

STATUS AND STRUCTURE

specialty	status	ECTS	full-time training				part-time training			
			L	C	t	total	L	C	t	total
Informatics and Computer Science	Mandatory	4	10	30	0	30	5	15		15
Applied informatics	Mandatory	4	10	30	0	30	5	15		15

COURSE CONTENT

LECTURES

Topic 1: Familiarise with and work with multimedia hardware platforms and peripheral devices.

- 1.1 Multimedia computers;
- 1.2 Specialised input-output devices;
- 1.3 Audio and video processing devices.

Topic 2: Overview of the main graphics, audio and video formats and standards.

- 2.1 Specific characteristics, advantages and area of application;
- 2.2 Methods of use.

Topic 3: Basics of two-dimensional animation.

- 3.1 Animation with a series of footage.
- 3.2 Creation of film cycles;
- 3.3 Combination of sequences.

Topic 4: Basics of Multimedia Programming.

- 4.1 Basic Structures in JavaScript
- 4.2 Object-oriented programming through JavaScript

SEMINAR EXERCISES

Topic 1: The main features and purpose of Adobe Animate.

- 1.1 Control of the work screen;
- 1.2 Creating a film;
- 1.3 Working with the main geometric shapes, drawing and editing of curves.

Topic 2: The main features and purpose of Adobe Animate.

- 2.1 Basic instruments;
- 2.2 Regulation and movement of objects;
- 2.3 Painting and import techniques;
- 2.4 Effects; Filters for image improvement and for artistic effects, entertaining effects, etc.
- 2.5 Working with layers and masks;

Topic 3: Two-dimensional computer animation through Adobe Animate.

- 3.1 Basic concepts for two-dimensional animation;
- 3.2 Screen and modes of its management;
- 3.3 Creation and arrangement of footage, paths;
- 3.4 Animated techniques;
- 3.5 Work with text and drawing.
- 3.6 Synchronisation of animation and sound;
- 3.7 Import and export to video format.

Topic 4. Introduction of multimedia programming and JavaScript.

- 4.1 Planning; Test script.
- 4.2 Use of manipulators. Types of manipulators;
- 4.3 Arrangement of a multitude of events.

- 4.4 Targeted roads. Target pathway to a current film; Target, parental film, instances, levels;
- 4.5 Data types, expressions, conditional logic; Cycles.
- 4.6 Creating and addressing global elements. Objects. Types of objects; Objects Color, Key, String, Selection.
- 4.7 Functions. Function parameters; Local and global variables, functions that return a result.
- 4.8 Mechanism and definition of classes, creation of instances; Subclasses, expansion of methods of existing classes.

COURSE ASSIGNMENT

There is a list of individual assignments for each student on each product – Adobe Illustrator, Adobe Animate, Adobe Photoshop and JavaScript, which are developed during the semester. The defense takes place at the end of the semester.

PLANNED LEARNING ACTIVITIES AND TRAINING METHODS

In the first class students receive complete information about the content of the program of the discipline, the requirements for them and the way of testing and formation of the assessment. Students can make suggestions regarding the organisation of the classes.

Seminars are practical and take place in a computer room. During the classes, real tasks of practice are exercised.

Coursework is required at the end of the semester submitted electronically.

Electronic materials support the learning process of students.

ASSESSMENT METHODS

Each student's work during the semester is assessed with an ongoing assessment. It is derived from the demonstration of the acquired skills during the course and the results of the developed course assignments.

The allocation of points for the activities under assessment shall be up to:

- | | |
|---|------|
| 1. Ongoing control..... | 100. |
| a. Course assignment Adobe Animate..... | 40 |
| b. Course Task JavaScript..... | 50 |
| c. active participation in the exercises..... | 10 |

Scoring scale:

- up to 50 points — Weak (2);
- 51 to 60 points — Medium (3);
- 61 to 70 points — Good (4);
- 71 to 80 points — Very good (5);
- 81 to 100 points — Excellent (6).

RECOMMENDED LITERATURE

1. Adobe Photoshop CC: Adobe Systems official course, AlexSoft, 2014, ISBN: 9789546562777.
2. Adobe Illustrator CC Classroom in a Book: The Official Training Workbook from Adobe Systems., Pearson Education, 2013, ISBN: 9780321929495
3. In easy steps: JavaScript, SoftPress, 2005.
4. Programming with JavaScript, Softpress, 2009.
5. Marijn Haverbeke, Eloquent JavaScript