



Innovative ICT Education for Social-Economic Development (IESED)
574283-EPP-1-2016-1-LT-EPPKA2-CBHE-JP

MULTIMEDIA CREATION AND PROCESSING TECHNOLOGIES

Minsk 2017

1. COURSE PLAN

Course code

Year of study	Semester	Academic hours					Hours of course work	ECTS	Number of hours
		Total	Lectures	Lab	Practice/ seminar	Independent work			
2-3	4-5	164	34	96		34		6	Full-time
2-3	4-5	164	12	42		110		6	Part-time

2. COMPETENCIES

- To be able to apply basic scientific and theoretical knowledge to solve practical problem.
- To be able to generate new ideas, focusing on creativity, critical thinking, communication and collaboration.
- To be able to work independently and in a team.

3. COURSE GOAL

To form the skills in designing, developing, testing and publishing multimedia products.

4. COURSE OUTCOMES

After completing this course student will be able to:

- make use of terminology associated with the concepts, techniques, and processes used throughout the multimedia environment;
- describe and use the elements and principles of design in multimedia;
- create communication solutions by implementing the various stages of the creative design process;
- create, test and publish presentations, audio, video and animation products.

5. COURSE CONTENT (FULL TIME)

№	Name of the topic	Number of academic hours					Form of knowledge control
		TOTAL	Lectures	practical tasks	labs	Independent work	
1	2	3	4	5	6	7	8
1	Introduction. Multimedia technologies.	6	4			2	
1.1	Basic concepts in the field of multimedia technologies.	2	2				Testing
1.2	The process of creating a multimedia product, the stages of development.	4	2			2	Independent work "Preparation of a multimedia product scenario"
2	Multimedia presentations	8	2		2	4	
2.1	Presentation as a kind of multimedia. Overview of software for the preparation of multimedia presentations.	2	2				

2.2	Tools for creating multimedia presentations	4			2	2	
2.3	Using presentations and publication on the Internet.	2				2	Final work "Creating and publishing a multimedia presentation"
3	Audio creation and processing	20	4		14	2	
3.1	Basic concepts in the field of creating and processing audio	2	2				
3.2	Audio recording technology	2			2		
3.3	Software for creating and editing audio	14	2		12		Final work "Recording and processing your own voice in mp3 format"
3.4	Converting audio files	2				2	
4	Video creation and processing	62	20		32	10	
4.1	Basic concepts in the field of video creation and processing	2	2				
4.2	Organization of video shooting	4				4	Independent work "Recording a mini-video on a given topic"
4.3	The technology of creating recordings from a webcam and recording (capture) from a computer screen	10	2		8		Laboratory work "Creating a video lesson on a given topic"
4.4	Software for video editing.	44	16		24	4	Final work "Creating a video clip in the mp4 format". The basic requirements for the clip will be attached
4.5	Converting video files	2				2	
5	Creating animation clips	62	4		46	12	
5.1	Basic concepts in the field of animation creation	2	2				
5.2	Creating gif animation	2			2		Laboratory work "Creating a banner with gif-animation"
5.3	Services for creating animation clips	4			2	2	Laboratory work "Creating an animation clip using online service"
5.4	Software for creating animation clips	54	2		42	10	Final work "Creating an animation clip"
6	Using and publishing multimedia content	6			2	4	
6.1	Publishing media content	2				2	Free-response task "Publishing media content"
6.2	Media Hosting Features	2			2		
6.3	Modern trends in multimedia development	2				2	Forum or essay "Modern Trends in Multimedia Development"
	Total	164	34		96	34	

6. COURSE CONTENT (PART TIME)

№	Name of the topic	Number of academic hours					Form of student's knowledge control
		TOTAL	Lecture	Practical tasks	Labs	Independent work	
1	2	3	4	5	6	7	8
1	Introduction. Multimedia technologies.	6	2			4	
1.1	Basic concepts in the field of multimedia technologies.	2	2				Testing
1.2	The process of creating a multimedia product, the stages of development.	4				4	Independent work "Preparation of a multimedia product scenario"
2	Multimedia presentations	8			2	6	
2.1	Presentation as a kind of multimedia. Overview of software for the preparation of multimedia presentations.	2				2	Final work "Creating and publishing a multimedia presentation"
2.2	Tools for creating multimedia presentations	4			2	2	
2.3	Using presentations and publication on the Internet.	2				2	
3	Audio creation and processing	20			2	18	
3.1	Basic concepts in the field of creating and processing audio	2				2	Final work "Recording and processing your own voice in mp3 format"
3.2	Audio recording technology	2				2	
3.3	Software for creating and editing audio	14			2	12	
3.4	Converting audio files	2				2	
4	Video creation and processing	62	6		18	38	
4.1	Basic concepts in the field of video creation and processing	2				2	Independent work "Recording a mini-video on a given topic"
4.2	Organization of video shooting	4				4	
4.3	The technology of creating recordings from a webcam and recording (capture) from a computer screen	6	2		2	2	Independent work "Creating a video lecture on a given topic"
4.4	Software for video editing.	48	4		16	28	Final work "Creating a video clip in the mp4 format". The basic requirements for the clip will be attached
4.5	Converting video files	2				2	
5	Creating animation clips	62	4		18	40	
5.1	Basic concepts in the field of animation creation	2	2				
5.2	Creating gif animation	2				2	Independent work "Creating a banner with gif-animation"
5.3	Services for creating animation	4			2	2	Laboratory work

	clips						“Creating an animation clip using online service”
5.4	Software for creating animation clips	54	2		16	36	Final work “Creating an animation clip”
6	Using and publishing multimedia content	6			2	4	
6.1	Publishing media content	2				2	Free-response task “Publishing media content”
6.2	Media Hosting Features	2			2		
6.3	Modern trends in multimedia development	2				2	Forum or essay “Modern Trends in Multimedia Development”
	Total	164	12		42	110	

7. THEORETICAL CONTENT

№	Names of topics	Content
1.1	Basic concepts of multimedia technologies.	The concept of multimedia, classification, types and scope of use of multimedia. Boxed and SaaS-technologies: selection criteria. Legal aspects when creating multimedia: copyright on the Internet.
1.2	The process of creating a multimedia product, the development stages	The process of creating a multimedia product includes the steps: - analysis of the project situation - choice of the type of multimedia and technology - scenario development - prototype preparation - collection and structuring of materials - development - testing and debugging - publication
2.1	Presentation as a kind of multimedia. Overview of software for the preparation of multimedia presentations.	Presentation as a kind of multimedia. Areas of using multimedia presentations. Overview of software and online services for the preparation of multimedia presentations, a comparative analysis of opportunities and functionality, selection criteria.
3.1	Basic concepts in the field of creating and processing audio	Description, characteristics, requirements for audio recordings. Formats of audio files, codecs, standards, examples of use.
3.3	Software for creating and editing audio	Overview of programs for audio recording and editing. Capabilities of the Audacity package. User interface. Basic tools. Ways to add files to the program. Tools for editing a separate track. Frequently applied effects. Export audio files.
4.1	Basic concepts in the field of video creation and processing	Description, characteristics, video requirements. Formats of video, codecs, standards, examples of use.
4.3	Software for video editing and recording (capture) from the computer screen	Overview of programs for video editing. Video editing in the environment of Camtasia Studio. Control Panel. Toolbar. Working with windows: the time line, the preview window. Hot keys for working with the time line. Importing multimedia files. Exporting the finished project. Recording (capture) the computer screen in the Camtasia Studio Recorder environment (installed with Camtasia Studio). Interface Camtasia Recorder. Preparing for recording. The record management window. Project files and records files (color icons).
4.4	Software for video editing	Video editors Vegas Pro (Sony Vegas Pro). User interface. Creating a video file. Options for video and audio tracks. Using effects, transitions. Multimedia generators: text, titles, gradients. Control the speed of video and audio. Picture in picture. Compositing. The Pan / Crop tool. Crop the video. Keyframes. Footage. Customize the video in the Vegas project. Uploading a video file from the program.
5.1	Basic concepts in the field of animation creation	Description, characteristics, technologies for creating animation, the use of animation clips. Overview and comparative characteristics of programs for creating animations.
5.4	Software for creating animation clips	Creating animation with the program 3ds Max. Creating animation with Adobe Animate CC.

8. PRACTICAL CONTENT

№	Name of the practical assignment	Content
	-	-

9. LABORATORY PRACTICE

№	Name of practical assignment	Content
2.2	Tools for creating multimedia presentations	Technologies and services for creating interactive presentations, for example, using the services of Prezi.com, Slides.com and their equivalent.
3.2	Audio recording technology	Creation of audio recordings using standard Windows tools
3.3	Software for creating and editing audio	Creating and editing audio (through the example of the program Audacity)
4.3	The technology of creating a record from a webcam and recording (capture) from the computer screen.	Technologies and programs for creating video recordings: - recording from a web camera (for example, the ScreenCast-O-Matic service)
4.3	The technology of creating a record from a webcam and recording (capture) from the computer screen.	Technologies and programs for creating video recordings: - recording (capture) from the screen and the web camera (using the example of the program Camtasia Recorder)
4.4	Software for video editing.	Learning programs for video editing: - Camtasia Studio
4.4	Software for video editing.	Learning programs for video editing: - Vegas Pro (Sony Vegas Pro)
5.2	Creating gif animation	Creating a GIF animation (for example, the Easy GIF Animator program)
5.3	Services for creating animation clips	Learning online services for creating animated clips by example of PowToon.com (or similar)
5.4	Software for creating animation clips. Creating animation with the program 3dsMax	Learning of animation in the 3d modeling program: - Autodesk 3ds Max
5.4	Software for creating animation clips. Creating animation with Adobe Animate CC	Learning the program for creating animation: - Adobe Animate CC
6.2	Media Hosting Features	Placing video content on YouTube.com, exploring the possibilities of video hosting: built-in video editor, customization of your channel, advanced video settings, the formation of playlists, live broadcasts.

10. ASSIGNMENT FOR INDEPENDENT WORK

№	Name of the assignment
1.2	Preparation of a multimedia product scenario.
2.1	
2.2	Creation and publication on the Internet multimedia presentation using of software and online services.
2.3	
3.1	
3.2	Creation of audio recordings using standard Windows tools.
3.3	Creation and edition audio using of software.
3.4	Conversion audio files.
4.2	
4.3	Creation video recording.
4.4	Creation and edition video using of software.
4.5	Conversion video files.
5.2	Creation gif animation.

5.3	Creation animated clips with online service.
5.4	Creation animated clips using of softwares (3dsMax and AdobeAnimate).
6.1	Publication on the Internet multimedia project.
6.3	Taking part in the forum on the topic «Modern trends in the development of multimedia» (virtual and augmented reality, action cameras GoPro, video 360o, etc.).

11. SYSTEM OF ASSESSMENT OF KNOWLEDGE AND SKILLS (ACCORDING TO THE NATIONAL REQUIREMENTS)

A ten-point scale, depending on the grade and the mark, includes the following criteria:

10 (ten) points, passed:

- systematized, deep and full knowledge on all sections of the curriculum of the institution of higher education in the academic discipline, as well as on major issues that go beyond its limits;
- accurate use of scientific terminology (including in a foreign language), competent, logically correct statement of the answer to questions;
- perfect mastering of the tools of the academic discipline, the ability to use it effectively in formulation and solution of scientific and professional problems;
- the expressed ability independently and creatively to solve complex problems in non-standard situations;
- complete and profound studying of basic, additional literature on the subject of the discipline;
- the ability to freely navigate in theories, concepts and directions on the discipline and give them an analytical assessment, use the scientific achievements of other disciplines;
- creative independent work on practical, laboratory classes, active creative participation in group discussions, high level of the culture of performance of tasks.

9 (nine) points, passed:

- systematized, deep and full knowledge on all sections of the curriculum of the institution of higher education on the academic discipline;
- accurate use of scientific terminology (including in a foreign language), competent, logically correct statement of the answer to questions;
- mastering of the tools of the academic discipline, the ability to use it effectively in formulation and solution of scientific and professional problems;
- ability independently and creatively to solve complex problems in non-standard situations within the curriculum of the institution of higher education on the academic discipline;
- complete studying of basic, additional literature on the subject of the discipline, recommended by the curriculum of the institution of higher education on the discipline;
- the ability to navigate in theories, concepts and directions on the discipline and give them an analytical assessment;
- Systematic, active independent work on practical, laboratory classes, active creative participation in group discussions, high level of the culture of performance of tasks.

8 (eight) points, passed:

- systematized, deep and full knowledge on all sections of the curriculum of the institution of higher education in the academic discipline in the volume of the curriculum of the institution of higher education on the discipline;

- use of scientific terminology (including in a foreign language), competent, logically correct statement of the answer to questions, the ability to make sound conclusions and generalizations;
- mastering of the tools of the academic discipline (methods of complex analysis, information technology), the ability to use it effectively in formulation and solution of scientific and professional problems;
- ability independently to solve complex problems within the curriculum of the institution of higher education on the academic discipline;
- studying of basic, additional literature, recommended by the curriculum of the institution of higher education on the discipline;
- the ability to navigate in theories, concepts and directions on the discipline and give them an analytical assessment;
- active independent work on practical, laboratory classes, systematic participation in group discussions, high level of the culture of performance of tasks.

7 (seven) points, passed:

- systematized, deep and full knowledge on all sections of the curriculum of the institution of higher education on the academic discipline;
- use of scientific terminology (including in a foreign language), competent, logically correct statement of the answer to questions, the ability to make sound conclusions and generalizations;
- mastering of the tools of the academic discipline, the ability to use it effectively in formulation and solution of scientific and professional problems;
- free possession of generic solutions within the curriculum of the institution of higher education on the academic discipline;
- studying of basic, additional literature, recommended by the curriculum of the institution of higher education on the discipline;
- the ability to navigate in basic theories, concepts and directions on the discipline and give them an analytical assessment;
- independent work on practical, laboratory classes, participation in group discussions, high level of the culture of performance of tasks.

6 (six) points, passed:

- sufficiently full and systematized knowledge in the volume of the curriculum of the institution of higher education on the discipline;
- use of the necessary scientific terminology, competent, logically correct statement of the answer to questions, the ability to make sound conclusions and generalizations;
- mastering of the tools of the academic discipline, the ability to use it effectively in solution of scientific and professional problems;
- ability independently to apply generic solutions within the curriculum of the institution of higher education on the academic discipline;
- studying of basic literature, recommended by the curriculum of the institution of higher education on the discipline;
- the ability to navigate in basic theories, concepts and directions on the discipline and give them a comparative assessment;
- active independent work on practical, laboratory classes, periodic participation in group discussions, high level of the culture of performance of tasks.

5 (five) points, passed:

- sufficient knowledge in the volume of the curriculum of the institution of higher education on the discipline;
- use of scientific terminology, competent, logically correct statement of the answer to questions, the ability to make sound conclusions;
- mastering of the tools of the academic discipline, the ability to use it in solution of scientific and professional problems;
- ability independently to apply generic solutions within the curriculum of the institution of higher education on the academic discipline;
- studying of basic literature, recommended by the curriculum of the institution of higher education on the discipline;
- the ability to navigate in basic theories, concepts and directions on the discipline and give them a comparative assessment;
- active independent work on practical, laboratory classes, periodic participation in group discussions, high level of the culture of performance of tasks;
- independent work on practical, laboratory classes, periodic participation in group discussions, sufficient level of the culture of performance of tasks.

4 (four) points, passed:

- sufficient knowledge within the educational standard of higher education;
- studying of basic literature, recommended by the curriculum of the institution of higher education on the discipline;
- use of scientific terminology, logical statement of the answer to questions, the ability to make sound conclusions;
- ability to draw conclusions without essential errors;
- mastering of the tools of the academic discipline, the ability to use it in solution of standard (typical) tasks;
- ability to solve standard (typical) tasks under the guidance of a teacher;
- ability to navigate in basic theories, concepts and directions on the discipline and give them an assessment;
- work under the guidance of a teacher on practical, laboratory classes, the permissible level of the culture of performance of tasks.

3 (three) points, failed:

- insufficient knowledge within the educational standard of higher education;
- studying of basic literature, recommended by the curriculum of the institution of higher education on the discipline;
- knowledge of a part of the basic literature, recommended by the curriculum of the institution of higher education on the discipline;
- use of scientific terminology, presentation of answers to questions with significant, logical errors;
- weak possession of the tools of the academic discipline, incompetence in solving standard (typical) tasks;
- inability to navigate in basic theories, concepts and directions on the discipline;
- work under the guidance of a teacher on practical, laboratory classes, the permissible level of the culture of performance of tasks.
- passivity on practical, laboratory classes, low level of the culture of performance of tasks.

2 (two) points, failed:

- fragmented knowledge within the educational standard of higher education;
- knowledge of individual literary sources, recommended by the curriculum of the institution of higher education on the discipline;
- inability to use scientific terminology of the academic discipline, the presence in the answer rude, logical errors;
- passivity on practical, laboratory classes, low level of the culture of performance of tasks.

1 (one) point, failed:

- lack of knowledge and (competences) within the educational standard of higher education, failure to answer, failure to appear for attestation without good cause.

12. METHODS AND MEANS OF IMPLEMENTATION OF THE CONTENT OF THE EDUCATIONAL PROGRAM AND TRAINING OF EDUCATIONAL, TRAINING AND METHODOLOGICAL MATERIALS

The training will be conducted using both classical and interactive methods (round tables, project method) and distance learning technologies, implemented by means of the eLearning portal. The students will be provided with electronic presentations of lectures, electronic versions of handouts for laboratory exercises.

On full-time classes, students will learn the discipline directly in the computer lab. The following software (SW) will be used during the training: Chrome or Mozilla Firefox browser, Audacity, Camtasia Studio, VegasPro (Sony Vegas Pro), Freemake Audio Converter, Format Factory, Freemake Video Converter, Easy GIF Animator, Autodesk 3Ds max, Adobe Animate CC.

13. RESOURCES

Basic literature

1. Multimedia: Making It Work. Ninth Edition / Tay Vaughan. – McGraw-Hill Education, 2014. – 504 p.
2. Райтман М. А. Видеомонтаж в SonyVegas PRO 13 (+DVD) / М.А. Райтман. – М.: ДМК-Пресс, 2015. – 302 с.
3. Animate tutorials [Electronic resource]: <http://www.adobe.com/products/animate.html>
4. Мэрдок, К. Autodesk 3ds Max 2013. Библия пользователя (+ CD-ROM). – Москва: Вильямс, 2013. – 816с.
5. Дуарте, Н. Slide:ology. Искусство создавать выдающиеся презентации. - Москва: Манн, Иванов и Фербер, 2014. - 288с.

Additional literature

1. Knowledge base Prezi [Electronic resource] <https://prezi.com/business/kb/>
2. Knowledge base Slides [Electronic resource] <http://help.slides.com/knowledgebase>
3. Powtoon tutorials [Electronic resource] <https://www.powtoon.com/tutorials/>

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