MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRARIAN UNIVERSITY

Cybernetics and Informatics Department
Faculty of Economics and Management

MODULE SYLLABUS

Modern Multimedia Technologies

(compulsory)

Implemented in the "International law" Academic Program

Area of specialization _293 "International law"

at the first (bachelor's) level of higher education

Sumy-2021

Author: ____________________________ (_K. Ahadzhanov - Honzalez)

Module syllabus agreed at the Cybernetics and Informatics Department meeting	Minutes No _15___ dated June_9_ 2021
	Head of Cybernetics and Informatics Department ____________ (S. Ahadzhanova)

Agreed:

Guarantor of The Educational Program ____________ Zapara S. I.
(signature) (full name)

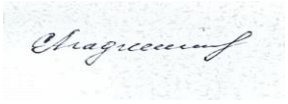
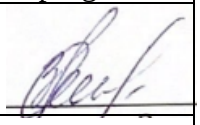
Dean of the Faculty where
the Educational Program is implemented ____________ Rogovenko O. V.
(signature) (full name)

Syllabus review (attached) is provided by : ____________ / (Н.Т. Стрелець)
____________ (____________)

Representative of the Department of Education Quality assurance,
licensing and accreditation ____________ (Н. Барасик)

Registered in electronic data base ___23.07___ 2021

Syllabus review data:

The academic year in which changes are made	The Academic program attachment number with changes description	Changes revised and approved		
		Minutes No and date of the department meeting	Head of Department	Guarantor of the Academic program
2022-2023	unchanged	Minutes No20 dated June_14_ 2022		

1. MODULE OVERVIEW

<table>
<tr><td>1.</td><td>Title</td><td colspan="4">Modern Multimedia Technologies</td></tr>
<tr><td>2.</td><td>Faculty/Department</td><td colspan="4">Economics and Management/Cybernetics and Informatics</td></tr>
<tr><td>3.</td><td>Type (compulsory or optional)</td><td colspan="4">compulsory</td></tr>
<tr><td>4.</td><td>Program(s) to which module is attached (to be filled in for compulsory types)</td><td colspan="4">293 International Law</td></tr>
<tr><td>5.</td><td>Module can be suggested for (to be filled in for optional types)</td><td colspan="4"></td></tr>
<tr><td>6.</td><td>Level of the National Qualifications Framework</td><td colspan="4">6-th</td></tr>
<tr><td>7.</td><td>Semester and duration of module</td><td colspan="4">1 semester, 1-15 weeks</td></tr>
<tr><td>8.</td><td>ECTS credits number</td><td colspan="4">5-th</td></tr>
<tr><td rowspan="3">9.</td><td rowspan="3">Total workload and time allotment</td><td colspan="3">Directed study</td><td>Self-directed study</td></tr>
<tr><td>Lectures</td><td>Practicals</td><td>Labs</td><td></td></tr>
<tr><td>14</td><td>30</td><td></td><td>106</td></tr>
<tr><td>10.</td><td>Language of instruction</td><td colspan="4">english</td></tr>
<tr><td>11.</td><td>Module leader</td><td colspan="4">Karen Ahadzhanov-Honzalez, Senior Lecturer, Master</td></tr>
<tr><td>12.</td><td>Module leader contact information</td><td colspan="4">karen.ahadzhanov-honzalez@snau.edu.ua; room 308e.</td></tr>
<tr><td>13.</td><td>Module description</td><td colspan="4">Multimedia and hypermedia technologies integrate powerful distributed resources that can provide an environment for the formation and development of key competencies, which include primarily information and communication.</td></tr>
<tr><td>14.</td><td>Module aim</td><td colspan="4">Students mastering a set of knowledge in the field of multimedia technologies, systems and methods of storing and reproducing text, graphics, audio, video information, their components and acquiring on the basis of this knowledge practical skills and theoretical knowledge necessary for creative approach in further professional work. Students master the algorithms for creating modern multimedia products, computer software, hardware in the field of multimedia: graphic, text, audio and video editors. Mastering conceptual models of development, distribution, processing, use and storage of multimedia documents; strategy for choosing multimedia systems.</td></tr>
<tr><td>15.</td><td>Module Dependencies (prerequisites, co-requisites, incompatible modules)</td><td colspan="4">1. The educational component is based on the general course of computer science.
2. The educational component is the basis for admission to the specialty.</td></tr>
<tr><td>16.</td><td>The policy of academic integrity</td><td colspan="4">The student must follow the rules of academic integrity during the performing practical work, writing essays, attestation, test and examination papers. If the facts of write-off or academic dishonesty are revealed, the work done by the student is canceled.</td></tr>
<tr><td>17</td><td>Link in Moodle</td><td colspan="4">https://cdn.snau.edu.ua/moodle/course/view.php?id=4088</td></tr>
</table>

2. CORRELATION BETWEEN MODULE LEARNING OUTCOMES (MLOs) AND PROGRAM LEARNING OUTCOMES (PLOs)

MLOs: On successful completion of the module the learner will be able to:	**PLOs**				**How assessed**
	PLO 14. You should use statistical information obtained from primary and secondary sources for your professional activities.	**PLO 15.** Free to use available information technologies and databases for professional activities.	**PLO 16.** Demonstrate the ability to use computer programs necessary for professional activities.	**PLO 17.** Працювати в групі, формуючи власний внесок у виконання завдань групи	
MLOs 1. Know the theoretical foundations of modern multimedia technologies		+			Multiple choice tests
MLOs 2. Apply theoretical knowledge and practical skills and abilities to use multimedia tools		+	+		Multiple choice tests, calculation tasks
MLOs 3. Select and prepare for work multimedia learning tools together with media (slides, audio and video recordings, CDs, training and monitoring software, etc.) that allow you to optimally organize the workplace.	+		+		Multiple choice tests, calculation tasks
MLOs 4. Create the simplest materials used with multimedia equipment.				+	Multiple choice tests, calculation tasks

3. MODULE INDICATIVE CONTENT

Topics	Distribution of hours				Learning resources
	Directed study			Self-directed study	
	Lectures	**Practicals**	**Labs**		
Topic 1. *Introduction to multimedia technology.* *1.1.* Introduction to multimedia 1.2. History of multimedia technology development 1.3. Components of multimedia 1.4. Areas of application of multimedia technologies	**2**	**2**		**8**	Basic: 1(pp. 5-38) Additional: 1(pp. 17-22)
Topic 2. *Multimedia data storage.* *2.1.* Digital image storage 2.2. Audio storage 2.3. Video storage 2.4. Storage of hypertext documents 2.5. Computer animation storage 2.6. Storage of text data	**2**	**4**		**14**	Basic: 1(pp. 55-68) Additional: 1(pp. 37-42)
Topic 3. *Multimedia data compression algorithms.* *3.1.* Features of multimedia data compression 3.2. Image compression algorithms 3.3. Audio compression algorithms 3.4. Video compression algorithms	**2**	**4**		**14**	Basic: 1(pp. 70-88) Additional: 1(pp. 47-52)
Topic 4. *Software interfaces for creating multimedia applications.* *4.1.* OpenGL graphics library 4.2. DirectX software interface	**2**	**4**		**14**	Basic: 1(pp. 82-88) Additional: 1(pp. 57-62)
Topic 5. *Means of preparation and submission of presentations.* *5.1.* General information about multimedia technology. 5.2 Multimedia computers. 5.3. Multimedia projectors. 5.4 Terminals for video conferencing.	**2**	**4**		**14**	Basic: 1(pp. 82-88) Additional: 1(pp. 57-62)
Topic 6. *Author's multimedia tools.* *6.1.* Classification of author's means of multimedia. 6.2. Scripting language. 6.3. Visual data flow control. 6.4. Frame. 6.5. Script language card. 6.6. Timeline. 6.7. Hierarchical objects. 6.8. Hypermedia links. 6.9. Markers.	**2**	**4**		**14**	Basic: 1(pp. 88-98) Additional: 1(pp. 60-62)
Topic 7. *Types of presentations.* *7.1.* Types of presentations. 7.2. Presentation with script. 7.3. Interactive presentation. 7.4. Automatic presentation.		**4**		**14**	Basic: 1(pp. 99-105) Additional: 1(pp. 63-67)

Topic 8. *Video conferencing.* 8.1. Appointment of video conference. 8.2. Architecture and standards of video conferencing systems. 8.3. Communication channels for video conferencing. 8.4. Video call quality. 8.5. Video conferencing equipment.	**2**	**4**		**14**	
Total	**14**	**30**		**106**	

4. TEACHING AND LEARNING METHODS

MLOs	Teaching methods (directed study)	Hours	Learning methods (self-directed study)	Hours
MLOs 1. Know the theoretical foundations of modern multimedia technologies	Lecture, practical lesson, discussion of topical issues	10	Elaboration of theoretical material, solution of calculation tasks	26
MLOs 2. Apply theoretical knowledge and practical skills and abilities to use multimedia tools	Lecture, practical lesson, discussion of topical issues	10	Elaboration of theoretical material, solution of calculation tasks	26
MLOs 3. Select and prepare for work multimedia learning tools together with media (slides, audio and video recordings, CDs, training and monitoring software, etc.) that allow you to optimally organize the workplace.	Lecture, practical lesson, discussion of topical issues	12	Elaboration of theoretical material, solution of calculation tasks	26
MLOs 4. Create the simplest materials used with multimedia equipment.	Lecture, practical lesson, discussion of topical issues	12	Elaboration of theoretical material, solution of calculation tasks	28
Total hours		44		106

5. ASSESSMENT

5.1. Diagnostic assessment

5.2. Summative assessment

5.2.1. Intended learning outcomes methods:

No	Summative assessment methods	Grades	Deadline
Autumn semester			
1.	Practical Work 1-2	5 points / 5 %	7 week
2.	Practical Work 3-4	10 points / 10 %	14 week
3.	Individual Work 1-4	5 points / 5 %	14 week
4.	Test	15 points / 15 %	During semester
5.	Practical Work 5-6	5 points / 5 %	7 week
6.	Practical Work 7-8	10 points / 10 %	14 week
7.	Individual Work 5-8	5 points / 5 %	14 week

8.	Test	15 points / 15 %	During semester
9.	Exam	30 points / 30 %	15 week

5.2.2. Grading criteria

Summative assessment method	**Unsatisfactory**	**Satisfactory**	**Good**	**Excellent**
Practical Works 1-2.	*0-10 points*	*11-14 points*	*15-19 points*	*20-25 points*
	Task not completed (method and answers are incorrect)	The progress is correct, but there are significant errors, the answers are mostly wrong	The task is completed, but there are minor errors	Task completely done. Mistakes missing
Modular control (multiple choice test)	0-3 *points*	3-5 *points*	*5-7 points*	*8-10 points*
	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test
Certification (multiple choice test)	0-3 *points*	3-7 *points*	*7-13 points*	*14-15 points*
	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test
Practical Works 3-4	*0-10 points*	*11-14 points*	*15-19 points*	*20-25 points*
	Task not completed (method and answers are incorrect)	The progress is correct, but there are significant errors, the answers are mostly wrong	The task is completed, but there are minor errors	Task completely done. Mistakes missing
Modular control (multiple choice test)	0-3 *points*	3-5 *points*	*5-7 points*	*8-10 points*
	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test
Individual Work (multiple choice test)	0-3 *points*	3-7 *points*	*7-13 points*	*14-15 points*
	Task not completed (method and answers are incorrect)	The progress is correct, but there are significant errors, the answers are mostly wrong	The task is completed, but there are minor errors	Task completely done. Mistakes missing
Practical Works 5-6	*0-10 points*	*11-14 points*	*15-19 points*	*20-25 points*
	Task not completed (method and answers are incorrect)	The progress is correct, but there are significant errors, the answers are mostly wrong	The task is completed, but there are minor errors	Task completely done. Mistakes Missing

Modular control (multiple choice test)	0-3 *points*	3-5 *points*	*5-7 points*	*8-10 points*
	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test
Certification (multiple choice test)	0-3 *points*	3-7 *points*	*7-13 points*	*14-15 points*
	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test
Practical Works 7-8	*0-10 points*	*11-14 points*	*15-19 points*	*20-25 points*
	Task not completed (method and answers are incorrect)	The progress is correct, but there are significant errors, the answers are mostly wrong	The task is completed, but there are minor errors	Task completely done. Mistakes Missing
Modular control (multiple choice test)	0-3 *points*	3-5 *points*	*5-7 points*	*8-10 points*
	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test
Individual Work (multiple choice test)	0-3 *points*	3-7 *points*	*7-13 points*	*14-15 points*
	Task not completed (method and answers are incorrect)	The progress is correct, but there are significant errors, the answers are mostly wrong	The task is completed, but there are minor errors	Task completely done. Mistakes Missing
Exam	0-9 *points*	10-16 *points*	*17-24 points*	*25-30 points*
	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test	Depends on the number of correct answers to the test

5.3. Formative assessment

Formative exercises are designed to enable students to develop particular aspects of their learning, prior to summative assessments. Formative exercises are designed to help students use feedback and self-reflection to manage and develop their learning so that they can see how to improve their work.

No	**Formative Assessment elements**	**Date**
	Autumn semester	
1.	Oral interview after studying each topic	After completing the study of the topic
2.	Passing the test on certification and modular control with feedback from the teacher	According to the schedule of the educational process
3.	Passing the test after the end of the study of each topic for independent control of knowledge and preparation for the test (exam)	Regulated by the student independently
4.	Protection of practical works	One week after their delivery

5.	Oral feedback from the teacher while working on practical work during classes	Throughout the semester

Self-assessment can be used both an element of formative and summative assessment.

6. LEARNING RESOURCES

6.1. Key resources

1. Khalid Sayood: Introduction to Data Compression", Morgan Kauffman Harcourt India, Third Edition, 2010.
2. Mark S. Drew, Ze-Nian Li, "Fundamentals of Multimedia", PHI, 2009.
3. Peter Symes : Digital Video Compression, McGraw Hill Pub., 2004.
4. Yun Q.Shi, Huifang Sun, "Image and Video Compression for Multimedia Engineering,Algorithms and Fundamentals", CRC Press, 2003.

6. 2 Methodical resourses

K.Ahadzhanov-Gonzalez Modern Multimedia Technologies(e-course in Moodle:Address - https://cdn.snau.edu.ua/moodle/course/view.php?id=4088)

6.3. Additional resources

1. Brusilovsky, Peter et.al. The Adaptive Web: Methods and Strategies of Web Personalization. Berlin: Springer, 2007.
2. Christopher D. Manning, Prabhakar Raghavan and Hinrich Schütze," Introduction to Information Retrieval" , Cambridge University Press, 2008
3. Ricci, F.; Rokach, L.; Shapira, B.; Kantor, P.B. (Eds.), Recommender Systems Handbook. 1 st Edition., 2011.