

Syllabus

1. Program information

1.1. Institution	ACADEMY OF ECONOMIC STUDIES
1.2. Faculty	Economic Cybernetics, Statistics and Informatics
1.3. Departments	(Department) INFORMATICA SI CIBERNETICA ECONOMICA
1.4. Field of study	Economic Informatics
1.5. Cycle studies	Master Studies
1.6. Education type	Full-time
1.7. Study program	IT&C Security
1.8. Language study	English
1.9. Academic year	2016-2017

2. Course information

2.1. Name	Multimedia Security								
2.2. Code	16.0241IF1.2-0006								
2.3. Year of studies	1	2.4. Semester	2	2.5. Assessment type	Exam	2.6. Course type	O	2.7. Number of ECTS	4
2.8. Instructors									

3. Total estimated time

3.1. Number of weeks	14.00		
3.2. Number of hours per week	2.00	of which	
		C(C)	1.00
		S(S)	1.00
3.3. Total hours from curriculum	28.00	of which	
		C(C)	14.00
		S(S)	14.00
3.4. Total hours of study per semester (ECTS*25)	100.00		
3.5. Total hours of individual study	72.00		
<i>Time distribution for individual study</i>			
Study the textbook, course support, bibliography and notes			
Further reading in the library, on the online platforms and field			
Preparing seminars, labs, homework, portfolios and essays			
Tutoring			
Examinations			
Other activities			

4. Prerequisites

4.1. About curriculum	Secure Applications Programming
4.2. About skills	Java, C# & C/C++ Programming

5. Requirements

C(C)	Course lectures take place in rooms with multimedia teaching equipment.
S(S)	Laboratories are held in rooms that have PCs with Internet access. The development environment used is Microsoft Visual Studio 2010 or 2012, Ubuntu within virtual machines with GCC, Java plus necessary tools.

6. Skills covered

	C1	Using the theories, principles and research methods in order to develop information security solutions in the use of complex IT&C systems.
	C3	Using modern computer technologies for developing components that ensure maximum IT security
	C4	Scientific research and designing of IT security solutions for the entire range and complexity of software architectures

7. Course objectives

7.1. General objective	The objective of this discipline is to give students a broader image about what is multimedia content and what are the mechanisms needed for getting access to byte level in order to manage it, meaning to read it, to interpret and to process it.
7.2. Specific objectives	Intelegerea si implementarea urmatoarelor: -Steganografie -Digital Watermarking

8. Course contents

8.1. C(C)		Teaching methods	Advices
1	MULTIMEDIA IMAGE STANDARDS -BMP standard - internal representation, technical manipulation, image processing algorithms;		
2	MULTIMEDIA AUDIO STANDARDS -PCM / AIFF standard - byte level comprehension, audio representation, audio processing algorithms;		
3	MULTIMEDIA VIDEO STANDARDS -MP4 video format - format descriptors, video processing algorithms;		
4	MULTIMEDIA COMMUNICATIONS		
5	-Multimedia content optimization a. JPEG and GIF/PNG compression standard b. MPEG-1 Audio Layer 3 compression (MP3) / CD-Audio / WMA / AAC c. H.264 compression standard		
6	-Multimedia Communications Layers – Multimedia Content Streaming a. RTP - Real Time Protocol		
7	MULTIMEDIA CONTENT ANALYSIS AND MANAGEMENT a. Digital Watermarking b. Steganography c. Digital Rights Management		
8	3D GRAPHICS - XNA Framework (concept, usage, framework description, resource access)		

Bibliography

- Robert Burnett, Anna Brunstrom, Anders Nilsson, Perspectives on Multimedia: Communication, Media and Information Technology - , Wiley, 2004
- B. S. Manjunath, Philippe Salembier, Thomas Sikora, Introduction to MPEG-7: Multimedia Content Description Interface , Wiley, 2002
- Chang We Chen, Zhu Li, Shiguo Lian, Intelligent Multimedia Communication: Techniques and Applications , Springer, 2011
- Iain Richardson, H.264 and MPEG-4 Video Compression: Video Coding for Next-generation Multimedia , Wiley, 2004
- Giorgos Stamou, Stefanos Kollias, Multimedia Content and the Semantic Web: Standards, Methods and Tools , Wiley, 2005
- Irina Bocharova, Compression for Multimedia , Cambridge University Press, 2010

8.2. S(S)		Teaching methods	Advices
1	MULTIMEDIA IMAGE STANDARDS -BMP standard - internal representation, technical manipulation, image processing algorithms;		
2	MULTIMEDIA AUDIO STANDARDS -PCM / AIFF standard - byte level comprehension, audio representation, audio processing algorithms;		
3	MULTIMEDIA VIDEO STANDARDS -MP4 video format - format descriptors, video processing algorithms;		
4	MULTIMEDIA COMMUNICATIONS		
5	-Multimedia content optimization a. JPEG and GIF/PNG compression standard b. MPEG-1 Audio Layer 3 compression (MP3) / CD-Audio / WMA / AAC c. H.264 compression standard		
6	-Multimedia Communications Layers – Multimedia Content Streaming a. RTP - Real Time Protocol		
7	MULTIMEDIA CONTENT ANALYSIS AND MANAGEMENT a. Digital Watermarking b. Steganography c. Digital Rights Management		
8	3D GRAPHICS - XNA Framework (concept, usage, framework description, resource access)		

Bibliography

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9. Course contents corroboration with the demands of epistemic community representatives, professional associations and representative employers

Taking into account the best practices from IT&C field applied by big companies such as: Intel, Oracle, Microsoft, IBM, HP and professional consortiums such as: Apache, Red Hat, ISO/IEC.

10. Assessment

Activity	Assessment criteria	Assessment methods	Percentage in the final grade
10.1. S(S)		Applied activities, practical or project certificates/laboratory/tests, tests during the module, auditing tests	40.00
10.2. Final assessment		Final examination	60.00
10.3. Grading scale	Whole notes 1-10		
10.4. Minimum performance standard	Knowledge required: application building for reading images and audio files, as well as inserting info inside them. The point granted by default is included in the weights assigned to the types of assessments.		

Completion date,
07/10/2016

Instructors,

Approval date of department

Director of department,