Syllabus

1. Program information

1.1. Institution	ACADEMY OF ECONOMIC STUDIES
1.2. Faculty	Economic Cybernetics, Statistics and Informatics
1.3. Departments	(Departament) 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	
1.9. Academic year	2017-2018

2. Course information

2.1. Name	**IoT (Internet of Things) and Embedded Operating Systems Security**							
2.2. Code	**17.0241IF2.1-0002**							
2.3. Year of studies	**2**	2.4. Semester	**1**	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	3.00	of which		
			C(C)	2.00
			S(S)	1.00
3.3. Total hours from curriculum	42.00	of which		
			C(C)	28.00
			S(S)	14.00
3.4. Total hours of study per semester (ECTS*25)	100.00			
3.5. Total hours of individual study	58.00			

Time distribution for individual study	
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, Anti-virus and virus technologies
4.2. About skills	C/C++, ASM x86 and scripting languages 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.
	CT3	Taking training need to create prerequisites for progress in career and adapt the professional and managerial skills to the dynamic of the economic environment

7. Course objectives

7.1. General objective	Gather knowledge upon operating systems on desktop and embedded devices and attain practical abilities in securing an operating system.
7.2. Specific objectives	Transfer tehnologic pentru: -Kernel Linux Programming -Linux Admin -ASM ARM -Cloud IaaS

8. Course contents

8.1. C(C)		Teaching methods	Advices
1	Intro to ARM 9 assembler		
2	Symbian OS Quick Start with Carbide C++/ Windows CE and Mobile Quick Start with MS Visual Studio .NET 2008		
3	Symbian OS/Windows CE Architecture		
4	Symbian OS/Windows CE Programming Basics		
5	Strings, Buffers, and Data Collections		
6	Platform Security and Symbian Signed vs Windows CE Security		
7	Asynchronous Functions and Active Objects		
8	Processes, Threads, Synchronization and IPC – Inter-Process Communication		
9	Client-Server Framework		
10	Mobile TCP/IP Network Programming		
11	GUI Application Programming		
12	Security reqirements in UNIX.		
13	Informatic security from the UNIX user's poit of view.		
14	Informatic security from the UNIX administrator's poit of view.		
15	Accounts and acces rights administration.		
16	Security in Windows: • Applying security patches • Windows servers verification • Port and vulnerable processes verifications • Event log files security • Temp folder encryption • Deleting the paging file at shutdown • Adding applications restrictions to certain users		

Bibliography

- McNab Chris , Network Security Assesment, O'Reilly, 2004

- Lockhart Andrew , Network Security Hacks, O'Reilly, 2004

- Dragos Acostachioaiei , Securitatea sistemelor LINUX, POLIROM, 2003

- Patriciu V., Pietrosanu M., Bica I., Cristea C., Securitatea informatică în UNIX şi INTERNET, Tehnică, 1998

8.2. S(S)	Teaching methods	Advices
1	Intro to ARM 9 assembler		
2	Symbian OS Quick Start with Carbide C++/ Windows CE and Mobile Quick Start with MS Visual Studio .NET 2008		
3	Symbian OS/Windows CE Architecture		
4	Symbian OS/Windows CE Programming Basics		
5	Strings, Buffers, and Data Collections		
6	Platform Security and Symbian Signed vs Windows CE Security		
7	Asynchronous Functions and Active Objects		
8	Processes, Threads, Synchronization and IPC – Inter-Process Communication		
9	Client-Server Framework		
10	Mobile TCP/IP Network Programming		
11	GUI Application Programming		
12	Security reqirements in UNIX.		
13	Informatic security from the UNIX user's poit of view.		
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- Dragos Acostachioaiei , Securitatea sistemelor LINUX, POLIROM, 2003

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: configure Cloud IaaS and ARM programming. The point granted by default is included in the weights assigned to the types of assessments.		

Completion date,   Instructors,
07/10/2016

Approval date of department   Director of department,