

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	Web and Cloud Applications Security								
2.2. Code	16.0241IF1.2-0004								
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	6
2.8. Instructors									

3. Total estimated time

3.1. Number of weeks	14.00		
3.2. Number of hours per week	4.00	of which	
		C(C)	2.00
		S(S)	2.00
3.3. Total hours from curriculum	56.00	of which	
		C(C)	28.00
		S(S)	28.00
3.4. Total hours of study per semester (ECTS*25)	150.00		
3.5. Total hours of individual study	94.00		
<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, Security Standards and Protocols, Computer Network Security, Databases Security
4.2. About skills	Java, C/C++ and 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
	CT2	Planning and organization of human resources within a team or organization, in terms of awareness of the responsibility for professional results

7. Course objectives

7.1. General objective	Understanding the concepts of MVC – Model View Control – Java Struts/Spring and web services and related technologies; Acquiring basic concepts needed for generating new services and implementation of security strategies for web services – XML Security; Implementation of distributed and parallel processing with security features in enterprise environments – JEE – Java Enterprise Edition.
7.2. Specific objectives	Transfer tehnologic pentru: -Java WebServices -Java Servlet & JSP -Java RMI si EJB

8. Course contents

8.1. C(C)		Teaching methods	Advices
1	Summary of distributed application and computing concepts		
2	Summary of concurrent programming – processes and threads		
3	Summary of network applications development based on socket and several protocols –TCP/UDP/FTP/HTTP/SMTP/SNMP/SIP/SSL/HTTPS in synchronous/asynchronous mode; Summary of XML, XSD, XSLT technologies		
4	OS features (Linux and Windows) for programming the networking and distributed applications – forking/spawning, signaling, pipes, fifos, message queues, shared memory, sockets		
5	Java web programming – Java Servlets, JSP, JSPX (vs ASP, ASP.NET)		
6	Java MVC – Model-View-Controllers – Java Struts vs JSF vs Java Spring/Hibernate		
7	Distributed programming: 7.1 Remote procedure call – RPC/RMI 7.2 XML-RPC and Web Services (SOAP/WSDL in AXIS); Security principles for web services: authentication, data protection, authorization; Security of the web services infrastructure 7.3 Middleware technologies – CORBA, COM, DCOM, 7.4 Components Distributed Programming – EJB 1.x, 2.x, 3.x and JSR 168/286 – Portlets 7.5 Asynchronous Networking Programming – JMS and DB/OS queues 7.6 P2P programming – JXTA 7.7 Cloud Computing – lighthttpd/Hadoop/MogileFS 7.8 Grid Computing: Globus Toolkit platform		
8	Cryptography and security issues in distributed applications – HTTPS and JAAS, XML Security, Java web servers clustering		

Bibliography

- Andrew S. Tanenbaum, Computer Networks, Prentice Hall Publishing House, 2003
- Cristian Toma, Security in Software Distributed Platforms, ASE Publishing House, 2008
- James Snell, Doug Tidwell, Pavel Kulchenko, Programming Web Services with SOAP, , O'Reilly, 2002
- Ethan Cerami, Web Services Essentials, O'Reilly, 2001
- Brian E. Travis, Mae Ozkan, Web Services Implementation Guide, Architag Press
- Simon St. Laurent, Programming Web Services with XML-RPC , O'Reilly Internet Series, 2001
- Ion Ivan, Cristian Toma , Informatics Security Handbook - 2nd Edition, ASE Publishing House, 2009

8.2. S(S)		Teaching methods	Advices
1	Summary of distributed application and computing concepts		
2	Summary of concurrent programming – processes and threads		
3	Summary of network applications development based on socket and several protocols –TCP/UDP/FTP/HTTP/SMTP/SNMP/SIP/SSL/HTTPS in synchronous/asynchronous mode; Summary of XML, XSD, XSLT technologies		
4	OS features (Linux and Windows) for programming the networking and distributed applications – forking/spawning, signaling, pipes, fifos, message queues, shared memory, sockets		
5	Java web programming – Java Servlets, JSP, JSPX (vs ASP, ASP.NET)		
6	Java MVC – Model-View-Controllers – Java Struts vs JSF vs Java Spring/Hibernate		
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8	Cryptography and security issues in distributed applications – HTTPS and JAAS, XML Security, Java web servers clustering		
<p>Bibliography</p> <ul style="list-style-type: none"> - Andrew S. Tanenbaum, Computer Networks, Prentice Hall Publishing House, 2003 - Cristian Toma, Security in Software Distributed Platforms, AES Publishing House, 2008 - James Snell, Doug Tidwell, Pavel Kulchenko, Programming Web Services with SOAP, , O'Reilly, 2002 			

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: building an Java n-tiers web application. 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,