

DESCRIPTION OF A STUDY COURSE – SYLLABUS

Title of a course	Web Applications Safety				
Head of course	PhD Bernard Vukelić, College Professor				
Study programme	Specialist professional graduate study of Information Technology in Business Systems				
Status of a course	Obligatory				
Year of study	2.	Semester	III	ECTS credits	4
Teaching plan (L + E + S+ Pr)	2+1+0+0				
Goals of a course					
The aim of the course is to familiarize students with the most common security issues related to web application security. Apply methods and techniques to raise the security of web applications through practical examples.					
Conditions for enrolling course					
No conditions					
Learning outcomes on a level of a study programme which includes course					
<p>Outcome 8: Apply methods and techniques for managing security and data protection in information and communication systems.</p> <p>Outcome 13: Analyse security threats when using web applications and services, and define and implement appropriate countermeasures.</p> <p>Outcome 15: Analyse and recommend the use of IT tools within a business organization.</p> <p>Outcome 16: Assess the place and role of ICT in the context of organization, management and business processes.</p> <p>Outcome 17: Present development and software solutions within a business organization.</p>					
Expected learning outcomes on a level of a course					
<ol style="list-style-type: none"> 1. Assess security risks to use the organizational and technical elements of web application security. 2. Describe security levels by network layers. 3. Describe the attacks and common vulnerabilities of web applications. 4. Describe the basic security mechanisms of web applications. 5. Apply vulnerability testing software tools and tools to help protect web applications. 					
Content of a course					
<p>Introduction to web services, definition of web services, web scripts with web services. Security, basic terms and aspects (reliability, integrity, non-rejection, authenticity, authorization, accessibility). Security presentation for each network layer. New challenges and threats for web services. XML signature. XML encryption. SAML. Assigning authorization-permission (XACML), XKMS. Modern technological specifications (Pass-port, Liberty project). Influence of UDDI on enhanced safety. Legal aspects of security and protection of web services and applications. Destructive activities on web applications. Training all users of IT in security. Security implementation.</p>					
Teaching modes	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> auditory exercises <input checked="" type="checkbox"/> seminars and workshops <input type="checkbox"/> distance learning <input type="checkbox"/> field classes		<input checked="" type="checkbox"/> individual assignments <input type="checkbox"/> multimedia and network <input type="checkbox"/> laboratory <input type="checkbox"/> supervisor's work <input type="checkbox"/> other _____		
Comments					
Students' obligations					
Submit solved task and activity and present the same.					
Grading, evaluation and monitoring of students' work continuously during lectures and exams					

Grading is based upon evaluation of course's learning outcomes' adoption. Grading is performed continuously during lectures and/or during exam, in compliance with the provisions of Regulation on the assessment of students.

Continuous check-up:

Outcomes	Written test	Assignment	Activity	Threshold	Max
Outcome 1	10%		20%	15%	30%
Outcome 2	10%			5%	10%
Outcome 3	10%			5%	10%
Outcome 4	10%			5%	10%
Outcome 5		40%		20%	40%
Percentage of ECTS	1,6	1,6	0,6	-	-
Total	40%	40%	20%	50 %	100 %

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

Exam term:

Outcomes	Written exam	Oral exam	Max
Outcome 1	15%		15%
Outcome 2	15%		15%
Outcome 3	15%		15%
Outcome 4	15%		15%
Outcome 5		35%	35%
Percentage of ECTS	2,4	1,6	-
Total	60%	40%	100 %

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

Grading:

A student has passed the exam if he has acquired at least 50% of anticipated credits of a specific learning outcome.

If a student has passed learning outcomes of all courses, the accomplished credits (percentages) of all passed learning outcomes are being added, while the final grade is defined upon following table:

Range of credits (percentages)	Numerical grade	ECTS grade
90,00 – 100,00	Excellent (5)	A
75,00 – 89,99	Very good (4)	B
60,00 – 74,99	Good (3)	C
50,00 – 59,99	Sufficient (2)	D
0,00 – 49,99	Insufficient (1)	F

Obligatory literature

1. O'Neill, M.: Web Services Security, Osborne McGraw-Hill, 2003
2. McCarthy, L.: IT Security, Prentice Hall, 2013
3. Shema, M.: Seven Deadliest Web Application Attacks

Additional literature

