Rotterdam University of Applied Sciences

School of Communication, Media and Information Technology

Course Descriptor

Last Edition:	6 January 2019	Version No.	19.1

1.	**Course Title:**	Web Application Security (WAS)
2.	**Course Code:**	INFANL01-9
3.	**Course Team:**	Babak Basharirad
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4.	**Rationale and Synopsis:**	
	Quantity and importance of data entrusted to web applications is growing, and programmers need to learn how to secure them. Traditional network defences, such as firewalls, fail to secure web applications. This course introduces some of these potential risks and helps students to better understand web application vulnerabilities, thus enabling them to properly defend organizations web assets.	
5.	**Year and Semester offered:**	Year 2 / Sem 1
6.	**Prerequisite:**	Introduction to Web Programming
7.	**Credit Value:**	3 EC

8. Student Learning Time (SLT) [hours]

L = Lecture T = Tutorial P = Practical V = Virtual Learning A = Assessment O = Other	Face to Face						Guided Learning	Ind. Learning	Total Learning Time
	L	T	P	V	A	O	Total		
	7	–	14	–	3	–	24	54	78

9. Learning outcomes:

On completion of this module, students will be able to:
1) Understand web application security and its importance.
2) Understand common mistakes of coders and vulnerabilities of web applications.
3) Explains how code developers' mistakes may be exploited to the benefit of the attackers and how to prevent these attacks.
4) Build secure web applications using secure coding practices.

10. Assessment [*]:

			Learning Objectives for assessment			
Class Test	☐	– %	LO 1 ☐	LO 2 ☐	LO 3 ☐	LO 4 ☐
Final Exam	☒	100 %	LO 1 ☒	LO 2 ☒	LO 3 ☒	LO 4 ☒
Assignment	☐	– %	LO 1 ☐	LO 2 ☐	LO 3 ☐	LO 4 ☐

[*] regardless of assessment type, students need to obtain 50% of marks for each LO to successfully pass the module.

11.	Content of the module and the SLT per topic [hours]:		
Week	**Topics**	**Class**	**Ind.**
1	**Introduction** ▪ HTTP ▪ Sessions ▪ HTTPs	3	6.45
2	**Passing Data to Subsystems** ▪ SQL Injection ▪ Shell Command Injection	3	6.45
3	**User Input** ▪ Definition ▪ Validating Input ▪ Handling Invalid Input	3	6.45
4	**Output Handling: The Cross-site Scripting Problem** ▪ Introduction ▪ The Problem and the Solution ▪ Browser Character Sets	3	6.45
5	**Web Trojans** ▪ Introduction ▪ The Problem and the Solution	3	6.45
6	**Passwords and Other Secrets** ▪ Crypto-Stuff ▪ Password-based Authentication ▪ Secret Identifiers ▪ Secret Leakage ▪ Availability of Server-side Code	3	6.45
7	**Enemies of Secure Code** ▪ Ignorance ▪ Mess ▪ Deadlines	3	6.45
8	**Exam and Assignment Submission** ▪ Written Exam	3	6.45
Total SLT (hours)		**24**	**54**

12.	**References and Supporting Materials:**	
	Main Reference(s):	
	1. **Title:** Innocent Code: A Security Wake-Up Call for Web Programmers 1st Edition	
	Author(s): Sverre H. Huseby	
	Pub. Year: 2004	
	Additional Reference(s):	
	1. **Title:** Web Security Testing Cookbook: Systematic Techniques to Find Problems Fast	
	Author(s): Paco Hope, Ben Walther	
	Pub. Year: 2008	
	2. **Title:** The Web Application Hacker's Handbook: Finding and Exploiting Security Flaws	
	Author(s): Dafydd Stuttard, Marcus Pinto	
	Pub. Year: 2011	