

<b>Module title</b> Introduction to Web Security				
<b>Module code</b> Tbd.	<b>Level</b> Bachelor (B.Sc.)	<b>Hours per week</b> 4	<b>ECTS credits</b> 5	<b>Duration</b> 2 weeks' block course plus online sessions
<b>Module instructor</b> Dr Weihan Goh Singapore Institute of Technology		<b>Lecture type</b> Regular lectures and practical sessions	<b>Prerequisite(s)</b> Understanding of web programming languages and technologies	<b>Grading</b> Continuous assessment, plus assignment
<b>Objectives</b> A student successfully completing the course should be able to: <ul style="list-style-type: none"> <li>• Describe and identify common web application vulnerabilities, their impact, and characteristics</li> <li>• Recognize potential attack vectors and targets in web applications and servers</li> <li>• Identify potential vulnerabilities and exploits in web applications and servers</li> <li>• Propose and implement countermeasures to mitigate threats and resist attacks</li> </ul>				
<b>Content</b> This module introduces students to the domain of web security, with focus on web application security, and the security of web application servers and infrastructure. Students will be introduced to common web application vulnerabilities, and how such vulnerabilities could be exploited to, e.g., steal data, bypass authentication and business logic, to more severe situations such as remotely launching executable codes on the server. Students will be given the opportunity to try these attacks out themselves using tools and techniques taught, and learn approaches to mitigate such threats. Students will also learn about web application servers and infrastructure, and how to configure them for security.  Topics covered in the module include: <ul style="list-style-type: none"> <li>• Overview and current issues related to web security</li> <li>• Authentication, authorization, and session management in web applications</li> <li>• Handling inputs in web applications</li> <li>• Manipulating objects, resources, UI, and files</li> <li>• Common vulnerabilities in web applications</li> <li>• Web application server and infrastructure security</li> <li>• Putting it all together</li> </ul>				
<b>Textbook/teaching material</b> <ul style="list-style-type: none"> <li>• Materials for lecture and practical sessions will be provided through the e-learning platform.</li> <li>• Additional material may be provided as and when required.</li> </ul>				

Note: this is not the official course descriptor according to the "Studien- und Prüfungsordnung" (SPO)