



Certificate

Ethical Hacking and Penetration Testing at University Level

Certificate Number: 2026-02-001

Chris Jemming has successfully completed the module **Ethical Hacking**. The module comprised 4 ECTS credits, corresponding to a workload of **120 hours**. The **final examination**, consisting of a **practical hacking challenge**, the preparation of a **penetration testing** report, and a **written exam**, was completed with the overall grade:

1,0 (Very good)

The module provides practical and theoretical knowledge in **Ethical Hacking** and **Penetration Testing** at university level and was conducted in the Summer Semester 2025 by **Florian Dalwigk**.

Chris Jemming has acquired knowledge in the following areas:

+ Kali Linux	+ Legal	+ MITRE ATT&CK	+ CVE/CVSS
+ Cyber Kill Chain	Foundations	+ XSS	+ SQLInjection
+ Buffer Overflows	+ OWASP Top 10	+ Enumeration	+ Password hacking
+ Social Engineering	+ Scanning	+ Privilege Escalation	+ AI in Ethical
+ OWASP Top 10	+ Malware	+ Operational	Hacking
LLM	+ Writing Pentest	Security	+ BurpSuite
+ Hashcat	Reports	+ Nmap	+ Shodan
+ Hydra	+ Metasploit	+ ShellGPT	+ Ollama
+ sqlmap			

Karlsruhe, 26.03.2025



Vice Dean
Prof. Dr.-Ing. Holger Vogelsang