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# **ULYSSEUS European University Innovation Hub on Cyber Security**

**Inter-university collaboration on cyber security**

***Masterclass on CTF & Cybersecurity  
Fundamentals***

**University of Montenegro and  
University of Genova**

Podgorica, 23-27<sup>th</sup> Feb

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Day	Proposed activities	Participants
Monday, 23 Feb	<p><b>First slot (3h)</b></p> <ul style="list-style-type: none"> <li>- <b>Introduction:</b> Welcome of the group Discussion about the weekly programme, Ethics, CTF definition, CTF vs Pentesting methodologies</li> <li>- <b>Network Security:</b> introduction, internet stack protocols, pcap analysis with Wireshark, network CTF challenges solving</li> </ul> <p><b>Second slot (2h)</b></p> <ul style="list-style-type: none"> <li>- <b>Network Security Hands-On Lab:</b> supported solving of CTF challenges on <a href="#">Pwnissa platform</a></li> </ul>	<p>UoM, UNIGE teams Target group: master students of Cyber security, master students of Computer science, master students of Faculty of Electrical engineering</p> <p>Format of delivery: Theoretical sessions (slides, case studies, discussions) + practicals (hands-on labs, tools usage, exercises)</p> <p>Proposed speakers: Gabriele Alessandria, Erika Corbo</p>
Tuesday, 24 Feb	<p><b>First slot (2h)</b></p> <p><b>Web Security:</b> Web Architecture Review, Burp Suite Essentials, Identifying &amp; Exploiting common vulnerabilities (OWASP Top 10)</p> <p><b>Second slot (2h)</b></p> <ul style="list-style-type: none"> <li>- <b>Web Security Hands-On Lab:</b> supported solving of CTF challenges on <a href="#">Pwnissa platform</a></li> </ul>	<p>UoM, UNIGE teams Target group: master students of Cyber security, master students of Computer science, master students of Faculty of Electrical engineering</p> <p>Format of delivery: Theoretical sessions (slides, case studies, discussions) + practicals (hands-on labs, tools usage, exercises)</p> <p>Proposed speakers: Gabriele Alessandria</p>
Wednesday, 25 Feb	<p><b>First slot (2h)</b></p> <ul style="list-style-type: none"> <li>- <b>Cryptography:</b> introduction, simple ciphers, symmetric and asymmetrical cryptography, AES, modular arithmetic review, RSA</li> </ul> <p><b>Second slot (2h)</b></p> <ul style="list-style-type: none"> <li>- <b>Cryptography Hands-On Lab:</b> supported solving of CTF</li> </ul>	<p>UoM, UNIGE teams Target group: master students of Cyber security, master students of Computer science, master students of Faculty of Electrical engineering</p> <p>Format of delivery: Theoretical sessions (slides, case studies, discussions) + practicals (hands-on labs, tools usage, exercises)</p>

	challenges on <a href="#">Pwnissa platform</a>	Proposed speakers: Andrea Valentino Ricotti
Thursday, 26 Feb	<p><b>First slot (2h)</b></p> <ul style="list-style-type: none"> <li>- <b>Binary Exploitation:</b> basic exploitation introduction, computer architecture overview, introduction to Buffer Overflow, GDB overview, disassembler overview</li> </ul> <p><b>Second slot (2h)</b></p> <ul style="list-style-type: none"> <li>- <b>Binary Exploitation Hands-On Lab:</b> supported solving of CTF challenges on <a href="#">Pwnissa platform</a></li> </ul> <p>On the final day, we will review the platform leaderboard and award gadgets to the most engaged students</p>	<p>UoM, UNIGE teams Target group: master students of Cyber security, master students of Computer science, master students of Faculty of Electrical engineering</p> <p>Format of delivery: Theoretical sessions (slides, case studies, discussions) + practicals (hands-on labs, tools usage, exercises)</p> <p>Proposed speakers: David Hermes</p>
Friday, 27 Feb	<p><b>Open Class on Cyber Security</b> - public event, significant from the aspect of Ulysseus community engagement strategy.</p> <p><b>Public Roundtable: Legal Framework for the Protection of Minors in the Digital Environment</b></p>	<p>Target audience: State institutions in Montenegro (ministries, regulatory and supervisory authorities, law enforcement bodies), public agencies, representatives of the private sector (ICT companies, cybersecurity providers, telecom operators), researchers, students, civil society organizations and professional associations.</p>



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