

Name: IT Security		NEPTUN-code: NIEIBOEBNE	Number of periods/week: full-time: 2 lec + 0 sem + 2 lab
Credit: 4 Requirement: exam		Prerequisite: NIEORIEBNE Operating Systems	
Responsible: Valéria PÓSER, Ph.D.	Position: associate professor	Faculty and Institute name: John von Neumann Faculty of Informatics Institute of Biomatics	
Way of assessment:			
<ul style="list-style-type: none"> - Two mid-terms which are prerequisites of the signature. One retake possibility - Oral exam. Final mark is calculated as the average of mid-terms and exam 			
Competences			
Course description:			
<p>The goal of the subject is to raise security awareness, to provide an overview on certain areas of IT security, and to prepare the prospective computer engineer for IT security problems, which arise in their later work.</p> <p>Major topics of the subject: Short overview on the history of information security. Ethical issues, motivations, targets, security awareness, regulations. Cryptology, cryptographic algorithms and basic protocols. Vulnerability of workstations, servers, networks and infrastructures. Physical protection. Malicious software (malware). User authentication, authorisation and access management. Password management in operating systems. Problems of password choice, password breaking techniques. Network attack methods. Border protection of network (firewalls, IDS/IPS). Public Key Infrastructure. Secure communication, internet security protocols. Secure mail and data storage. Security of mobile and cloud-based systems. Vulnerability of applications. Risk management.</p>			
Literature			
<p>Levente Buttyán, László Györfi, Sándor Györi, István Vajda: Codingtechnique, 2006 (electronic notes)</p> <p>Mark S. Merkow Jim Breithaupt: Information Security: Principles and Practices, Second Edition, Pearson Education, 2014 (electronic notes)</p> <p>Howard M. "A tutorial on linear and differential cryptanalysis." Cryptologia 26.3, 189-221., 2002 (electronic notes)</p>			