

ZAŠČITA IS IN MREŽE

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Zaščita IS in mreže
Course title:	Information Systems and Computer Networks Security
Članica nosilka/UL Member:	UL FU

Študijski programi in stopnja	Študijska smer	Letnik	Semestri	Izbirnost
Management v upravi, druga stopnja, magistrski	Upravna informatika (smer)	2. letnik	Celoletni	izbirni

Univerzitetna koda predmeta/University course code:	0069401
Koda učne enote na članici/UL Member course code:	586

Predavanja /Lectures	Seminar /Seminar	Vaje /Tutorials	Klinične vaje /Clinical tutorials	Druge oblike študija /Other forms of study	Samostojno delo /Individual student work	ECTS
21	11			118	60	7

Nosilec predmeta/Lecturer: Dimitar Hristovski, Mitja Dečman

Vrsta predmeta/Course type: Strokovno izbirni/Professional elective

Jeziki/Languages:

Predavanja/Lectures:	Angleščina, Slovenščina
Vaje/Tutorial:	Angleščina, Slovenščina

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

Ni.	No prerequisites.
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Vsebina:

Content (Syllabus outline):

<ol style="list-style-type: none">1. Varnostne grožnje in nevarnosti2. Metodologija vzpostavitve varovanja3. Kriptografske metode varovanja4. Organizacijski in drugi ne-kriptografski varnostni ukrepi5. Temeljni mehanizmi varovanja6. Upravljanje z varovanjem7. Varovanje elektronske pošte8. Varnost omrežij9. Spletna varnost10. Varnost elektronskih plačilnih sistemov	<ol style="list-style-type: none">1. Security threats and risks2. Models of care, access control mechanisms, different aspects of the protection system.3. Cryptographic security methods.4. Organizational and other noncryptographic measures5. Basic protection mechanisms6. Security management7. Email management8. Network security9. Web security10. Security of electronic payment systems.
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Temeljna literatura in viri/Readings:

- Stallings W., Network Security Essentials: Applications and Standards, Fourth Edition, Pearson Education Inc., 2011. (izbrana poglavja/selected chapters)
- Winkler Vic (J.R.), Securing the Cloud: Cloud Computer Security Techniques and Tactics, Elsevier Inc., 2011. (izbrana poglavja/selected chapters)
- Wang J, Computer Network Security: Theory and Practice, Springer Higher Education Press, 2009. (izbrana poglavja/selected chapters)
- Salomon D., Elements of Computer Security, Springer-Verlag London Limited, 2010. (izbrana poglavja/selected chapters)

Cilji in kompetence:

Cilji:

- Razviti znanja potencialnih groženj, napadov in potrebnih zaščitnih ukrepov, ki so pomembni za internetne in spletne storitve
- Pridobiti znanja osnovnih načel, tehnik in mehanizmov za zaščito informacijskih sistemov in računalniških omrežij.
- Pridobiti znanja o različnih metodoloških pristopih in izvajanjih zaščite.

Kompetence:

- Usposobljenost za analizo potencialnih groženj in ranljivosti informacijskih sistemov in računalniških omrežij.
- Usposobljenost za analizo varnostnih potreb računalniških omrežij in informacijskih sistemov organizacij.
- Zmožnost primerjave različnih informacijskih tehnologij in varnostnih rešitev, vključno s strojno opremo, programsko opremo, omrežji, strežniki, usmerjevalniki, požarni zidovi ipd.

Objectives and competences:

Objectives:

- Develop knowledge about possible threats, attacks and safeguards that are relevant to Internet and Webservices
- Gain knowledge of basic principles, techniques and mechanisms for protecting information systems and computer networks.
- Acquire knowledge about different methodological approaches and implementation of protection.

Competences:

- Ability for the analysis of the potential threats and vulnerabilities of information systems and computer networks
- Ability for the analysis of the computer networks and information systems security needs of an organization;
- Capability of comparison of different computer technologies and security solutions including hardware, software, networks, servers, routers, firewalls, etc.

Predvideni študijski rezultati:

- Študent zna prepoznati nevarnosti in izbrati primerno obliko zaščite
- Študent je sposoben uporabljati ukrepe, tehnike in mehanizme zaščite.

Intended learning outcomes:

- Student is able to detect security risks and chose appropriate security measures and protection
- Students is capable to apply the measure, techniques and mechanisms of protection.

Metode poučevanja in učenja:

1. predavanja
2. analiza primerov iz prakse
3. gostovanja strokovnjakov iz prakse
4. znanstveno-raziskovalna seminarska naloga
5. skupinska predstavitev

Learning and teaching methods:

1. lectures
2. case studies
3. hosting of practitioners
4. scientific research, seminar paper
5. (group) presentation

6. spremljanje dogodkov preko elektronske klepetalnice

6. following the events via chat room

Načini ocenjevanja:	Delež/Weight	Assessment:
Ustni ali pisni izpit.	55,00 %	Oral or written exam.
Seminarska naloga, študija primera, raziskovalni projekt – javna predstavitev.	45,00 %	Seminar paper, case study, research project – public presentation.

Reference nosilca/Lecturer's references:

- ZHANG, Rui, HRISTOVSKI, Dimitar, SCHUTTE, Dalton, KASTRIN, Andrej, FISZMAN, Marcelo, KILICOGU, Halil. Drug repurposing for COVID-19 via knowledge graph completion. *Journal of biomedical informatics*, ISSN 1532-0480. 2021, vol. 115, str. 1-15, ilustr. doi: 10.1016/j.jbi.2021.103696.
- KASTRIN, Andrej, HRISTOVSKI, Dimitar. Scientometric analysis and knowledge mapping of literature-based discovery (1986-2020). *Scientometrics*, ISSN 0138-9130, 2021, vol. 126, str. 1415-1451. doi: 10.1007/s11192-020-03811-z.
- KASTRIN, Andrej, HRISTOVSKI, Dimitar. Disentangling the evolution of MEDLINE bibliographic database : a complex network perspective. *Journal of biomedical informatics*, ISSN 1532-0464. 2019, vol. 89, str. 101-113, ilustr. doi: 10.1016/j.jbi.2018.11.014.
- HRISTOVSKI, Dimitar, KASTRIN, Andrej, DINEVSKI, Dejan, BURGUN, Anita, ŽIBERNA, Lovro, RINDFLESCH, Thomas C. Using literature-based discovery to explain adverse drug effects. *Journal of medical systems*, ISSN 1573-689X, Aug. 2016, vol. 40, iss. 8, 1-5 str. doi: 10.1007/s10916-016-0544-z.
- HRISTOVSKI, Dimitar, DINEVSKI, Dejan, KASTRIN, Andrej, RINDFLESCH, Thomas C. Biomedical question answering using semantic relations. *BMC bioinformatics*, ISSN 1471-2105, 2015, vol. 16, no. 6, 14 str., doi: 10.1186/s12859-014-0365-3.
- DEČMAN, Mitja. Understanding technology acceptance of government information systems from employees' perspective. *International journal of electronic government research*, ISSN 1548-3894. [Spletna izd.], 2015, vol. 11, issue 4, str. 69-88, ilustr.
- DEČMAN, Mitja. The role of government portals : an evaluation of the new Slovenian government portal. V: DEČMAN, Mitja (ur.), JUKIĆ, Tina (ur.). *Proceedings of the 16th European Conference on e-Government*, Ljubljana, 16.-17. June 2016 : ECEG 2016. Reading: Academic Conferences and Publishing International, 2016, str. 45-53, ilustr.
- DEČMAN, Mitja. Modeling the acceptance of e-learning in mandatory environments of higher education: the influence of previous education and gender. *Computers in human behavior*, ISSN 0747-5632. [Print ed.], Aug. 2015, vol. 49, str. [272]-281