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| **UČNI NAČRT PREDMETA / COURSE SYLLABUS** | | | | | | | | | | | | | | | | | |
| **Predmet:** | | | Modul J: Internetne storitve in aplikacije | | | | | | | | | | | | | | |
| **Course title:** | | | Module J: Internet services and applications | | | | | | | | | | | | | | |
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| **Študijski program in stopnja**  **Study programme and level** | | | | | **Študijska smer**  **Study field** | | | | | | | | **Letnik**  **Academic year** | | **Semester**  **Semester** | | |
| Podiplomski magistrski študijski program druge stopnje Elektrotehnika | | | | | Informacijsko komunikacijske tehnologije | | | | | | | | 2 | | 1 | | |
| 2nd cycle masters study programme in Electrical Engineering | | | | | Information and communication technologies | | | | | | | | 2 | | 1 | | |
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| **Vrsta predmeta / Course type** | | | | | | | | | | | | Izbirni-strokovni /elective professional | | | | | |
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| **Univerzitetna koda predmeta / University course code:** | | | | | | | | | | | | 64301S | | | | | |
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| **Predavanja**  **Lectures** | **Seminar**  **Seminar** | | | **Vaje**  **Tutorial** | | | **Klinične vaje**  **work** | | | | **Druge oblike študija** | | | **Samost. delo**  **Individ. work** | |  | **ECTS** |
| 45 | 0 | | | 30 | | | 0 | | | | 0 | | | 75 | |  | 6 |
|  | | | | | | | | | | | | | | | | | |
| **Nosilec predmeta / Lecturer:** | | | | | Urban Sedlar, Janez Bešter | | | | | | | | | | | | |
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| **Jeziki /**  **Languages:** | | **Predavanja / Lectures:** | | | | slovenski / Slovenian  angleški (mentorsko) / English (consultations) | | | | | | | | | | | |
| **Vaje / Tutorial:** | | | | slovenski / Slovenian  angleški (mentorsko) / English (consultations) | | | | | | | | | | | |
| **Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:** | | | | | | | |  | | **Prerequisits:** | | | | | | | |
| Vpis v letnik predmeta | | | | | | | |  | | Enrolment in the year of the course | | | | | | | |
| **Vsebina:** | | | | | | | | |  | **Content (Syllabus outline):** | | | | | | | |
| Evolucija razvoja informacijsko-komunikacijskih storitev.  Pregled aktualnih storitvenih področij: komunikacije, informacije, zabava, internet stvari.  Storitvene arhitekture in tehnologije za zagotavljanje: operaterskih glasovnih storitev (IP telefonija), operaterskih multimedijskih storitev (IP televizija), internetnih (over-the-top) storitev, spleta, peer-to-peer sistemov in interneta stvari.  Računalništvo v oblaku.  Poslovni vidiki.  Uporabniški vidiki: terminalna oprema, dostopnost, uporabniška izkušnja.  Kibernetska varnost na aplikacijskem in uporabniškem nivoju  Regulatorni vidiki, varovanje podatkov in SLA | | | | | | | | |  | Evolution of the information and communication technologies.  Overview of service domains: communications, information, entertainment, internet of things  Service architectures and technologies for providing voice services (IP telephony), multimedia services (IP television), internet (over-the-top) services, world wide web, peer-to-peer systems and internet of things.  Cloud computing.  Business aspects.  User aspects: terminal equipment, accessibility, user experience.  Cybersecurity on the application and user levels.  Regulatory aspects, data protection and SLA. | | | | | | | |

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| **Temeljni literatura in viri / Readings:** | | | | | |
| 1. Plevyak Thomas, Sahin Veli, Next Generation Telecommunications Networks, Services, and Management, IEEE Press Series on netwroks and Services management, 2010, 328 str., ISBN: 978-0470575284 2. Mitra, S., G. Bhatnagar , S. Mehta, Introduction to Multimedia Systems, Academic Press, 2001, 300 str., ISBN: 0-12500-452-4 3. Benoit Herve, Digital Television: Satellite, Cable, Terrestrial, IPTV, Mobile TV in the DVB Framework, Focal Press, Third Edition, 2008, 978-0-240-52081-0 4. Članki, objavljenih v revijah, npr. / Articles published in magazines, i.e.: IEEE Communications Surveys & Tutorials, http://www.comsoc.org/livepubs/surveys/index.html | | | | | |
| **Cilji in kompetence:** | |  | | **Objectives and competences:** | |
| Cilj predmeta je podati pregled osnovnih načel delovanja sodobnih internetnih storitev s stališča uporabljanih arhitektur, tehnoloških aspektov in razvojnih ekosistemov. Razumevanje problematike zajema podatkov, obdelave in distribucije po internetnih omrežjih.  Študenti bodo pridobili potrebna znanja in veščine s teh področij | |  | | The objective of the course is to provide an overview of the basic principles of operation of internet services from the architectural in technological aspects, as well as the development ecosystems. Understanding of data acquisition, data processing and data distribution aspects over internet networks.  Students will acquire fundamental knowledge and skills in these fields. | |
| **Predvideni študijski rezultati:** | | |  | **Intended learning outcomes:** | |
| Razumevanje arhitektur in uporabljanih tehnologij v internetnih storitvah. Poznavanje tehnoloških aspektov celotne verige od ponudnikov storitev do končnih uporabnikov oz. terminalne opreme. Poznavanje poslovnih, varnostnih in regulatornih vidikov. | | |  | Understanding of architectures and technologies used in internet services. Getting acquainted with the technological aspects of the entire chain from service providers to the end users and their terminals. Understanding of business, security and regulatory aspects. | |
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| **Metode poučevanja in učenja:** | | |  | **Learning and teaching methods:** | |
| Predavanja, na katerih se študent seznani s teoretičnimi osnovami, ter laboratorijske vaje, kjer probleme spozna tudi praktično in jih v timu rešuje skozi projektno delo. E-izobraževanje. Ogledi in vabljeni predavatelji. | | |  | Lectures for theoretical aspects, laboratory exercises and team work for real-case scenarios and problem solving through project work. E-learning. Study visits and invited lecturers. | |
| **Načini ocenjevanja:** | Delež (v %) /  Weight (in %) | | | | **Assessment:** |
| Način: pisni izpit, ustni izpit.  Ocene od 1 do vključno 5 so negativne, ocene od vključno 6 do 10 so pozitivne.  Uspešna izvedba 80% laboratorijskih vaj je predpogoj za prijavo na pisni izpit.  Prispevki k oceni:  pisni izpit  ustni izpit | 50%  50% | | | | Type: written exam, oral exam.  Negative grades: from 1 to 5, positive grades: from 6 to 10.  Successful completion of at least 80% of the laboratory exercises is prerequisite for the written exam.  Contributions to final grade:  written exam  oral examination |
| **Reference nosilca / Lecturer's references:** | | | | | |
| 1. SEDLAR, Urban, ZEBEC, Luka, BEŠTER, Janez, KOS, Andrej. Bringing click-to-dial functionality to IPTV users. IEEE commun. mag. (Print). [Print ed.], Mar. 2008, vol. 46, no. 3, str. 118-125. 2. KOS, Andrej, PRISTOV, Damijan, SEDLAR, Urban, STERLE, Janez, VOLK, Mojca, VIDONJA, Tomaž, BAJEC, Marko, BOKAL, Drago, BEŠTER, Janez. Open and scalable IoT platform and its applications for real time access line monitoring and alarm correlation. Lect. notes comput. sci., str. 27-38. 3. SEDLAR, Urban, BEŠTER, Janez, KOS, Andrej. Računalništvo v oblaku v telekomunikacijah in primeri uporabe. V: MLINAR, Tomi (ur.), CAF, Dušan (ur.), ROBNIK, Ana (ur.), HUDOBIVNIK, Alojz (ur.), MEŠE, Pavel (ur.). Šestindvajseta delavnica o telekomunikacijah, 7. in 8. november 2011, Brdo pri Kranju. Komunikacije in računalništvo v oblaku : zbornik referatov, (VITEL). Ljubljana: Elektrotehniška zveza Slovenije, cop. 2011, f. 3-6. 4. UMBERGER, Mark, HUMAR, Iztok, KOS, Andrej, GUNA, Jože, ŽEMVA, Andrej, BEŠTER, Janez. The integration of home-automation and IPTV system and services. Comput. stand. interfaces. [Print ed.], Jun. 2009, vol. 31, no. 4, str. 675-684. 5. SEDLAR, Urban, ZEBEC, Luka, BEŠTER, Janez, KOS, Andrej. Bringing click-to-dial functionality to IPTV users. IEEE commun. mag. (Print). [Print ed.], Mar. 2008, vol. 46, no. 3, str. 118-125. | | | | | |