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| **UČNI NAČRT PREDMETA / COURSE SYLLABUS** | | | | | | | | | | | | | | | | | |
| **Predmet:** | | | Inteligentni sistemi | | | | | | | | | | | | | | |
| **Course title:** | | | Intelligent Systems | | | | | | | | | | | | | | |
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| **Študijski program in stopnja**  **Study programme and level** | | | | | **Študijska smer**  **Study field** | | | | | | | | **Letnik**  **Academic year** | | **Semester**  **Semester** | | |
| Univerzitetni študijski program prve stopnje Elektrotehnika | | | | | **Vse smeri, Telekomunikacije** | | | | | | | | 3. | | zimski | | |
| 1st cycle academic study programme Electrical Engineering | | | | | **All fields, Telecommunications** | | | | | | | | **3.** | | **winter** | | |
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| **Vrsta predmeta / Course type** | | | | | | | | | | | | Obvezni in izbirni- strokovni/compulsory and elective professional | | | | | |
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| **Univerzitetna koda predmeta / University course code:** | | | | | | | | | | | | 64129 | | | | | |
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| **Predavanja**  **Lectures** | **Seminar**  **Seminar** | | | **Vaje**  **Tutorial** | | | **Klinične vaje**  **work** | | | | **Druge oblike študija** | | | **Samost. delo**  **Individ. work** | |  | **ECTS** |
| **45** |  | | | **15** | | |  | | | |  | | | **65** | |  | **5** |
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| **Nosilec predmeta / Lecturer:** | | | | | Matej Zajc, Marko Meža | | | | | | | | | | | | |
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| **Jeziki /**  **Languages:** | | **Predavanja / Lectures:** | | | | slovenski | | | | | | | | | | | |
| **Vaje / Tutorial:** | | | | slovenski | | | | | | | | | | | |
| **Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:** | | | | | | | | |  | **Prerequisits:** | | | | | | | |
| Vpis v letnik študija. | | | | | | | | |  | Enrollment in the study year. | | | | | | | |
| **Vsebina:** | | | | | | | |  | | **Content (Syllabus outline):** | | | | | | | |
| Inteligenca naravnih in umetnih sistemov: definicija inteligence in zgodovinski pregled razvoja inteligentnih sistemov. Matematične osnove in modeliranje inteligentnih sistemov. Inteligentni prostori: zmožnosti današnje tehnologije in obeti v prihodnje. Uporaba inteligence v informacijsko komunikacijskih sistemih: uporabniški vmesniki, inteligentni terminali, vsenavzočnost, identifikacija, modeliranje uporabnikov, rudarjenje s podatki, personalizacija. Metode in algoritmi inteligentnih sistemov Analiza in modeliranje znanja ter metode učenja. Definicija referenčne arhitekture in razvoj inteligence sistema. Zgradba inteligentnega sistema: zajem podatkov, obdelava podatkov in odziv sistema. | | | | | | | |  | | Intelligence of natural and artificial systems: historical definition of intelligence and overview of the development of intelligent systems. Mathematical background and intelligent systems modeling, knowledge representation, learning methods. Intelligent spaces: the ability of today's technology and prospects for the future. The use of intelligence in information and communication systems: user interfaces, intelligent terminals, ubiquity, identification, modeling users, data mining, personalization. Methods and algorithms of intelligent systems. Knowledge analysis and modeling, methods of learning. Definition of the reference architecture and development of system intelligence. Building intelligent systems: data acquisition, data processing, and system’s response. | | | | | | | |

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| **Temeljni literatura in viri / Readings:** | | | | | |
| 1. Hopgood, Adrian A. Intelligent systems for engineers and scientists. CRC press, 3. izdaja, 2013.  2. A. Steventon, S. Wright, Intelligent Spaces: The Application of Pervasive ICT, Springer, 2005. | | | | | |
| **Cilji in kompetence:** | |  | | **Objectives and competences:** | |
| Razumevanje inteligence v sodobnih informacijsko-komunikacijskih sistemih v odnosu do uporabnika. Poznavanje orodij in tehnik za pomoč pri modeliranju, odločanju in obvladovanju informacij. | |  | | Understanding intelligence in modern information and communication systems in relation to the user. Practical use of tools and techniques to support modeling, decision-making and in the management of information. | |
| **Predvideni študijski rezultati:** | | |  | **Intended learning outcomes:** | |
| Razumevanje inteligence v sodobnih informacijsko-komunikacijskih sistemih in osnov zajema, obdelave in analize podatkov. Poznavanje osnov modeliranja interaktivnih komunikacijskih procesov. | | |  | Understanding intelligence in modern ICT systems and data acquisition, processing and analysis. Understanding basics of modeling interactive communication processes. | |
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| **Metode poučevanja in učenja:** | | |  | **Learning and teaching methods:** | |
| Predavanja s teoretičnimi izhodišči in praktično naravnane laboratorijske vaje. Vodena izdelava projektov. | | |  | Lectures with theoretical foundations and practical oriented labs. Guided project work. | |
| **Načini ocenjevanja:** | Delež (v %) /  Weight (in %) | | | | **Assessment:** |
| Način: laboratorijske vaje, projekt, pisni izpit, ustni izpit.  Ocene od 1 do vključno 5 so negativne, ocene od vključno 6 do 10 so pozitivne.  Pozitivna ocena laboratorijskih vaj in domačih nalog je pogoj za pristop k izpitu.  Prispevki k oceni:  laboratorijske vaje in projekt  pisni izpit  ustni izpit | 25%  50%  25% | | | | Type: laboratory exercises, project, written exam, oral exam.  Negative grades: from 1 to 5, positive grades: from 6 to 10.  Positive evaluation of laboratory exercises and project is a prerequisite for the exam.  Contributions to final grade:  laboratory exercises and project  written exam  oral examination |
| **Reference nosilca / Lecturer's references:** | | | | | |
| 1. ZAJC, Matej, ISTENIČ STARČIČ, Andreja. Potentials of the Tangible User Interface (TUI) in enhancing inclusion of people with special needs in the ICT-assisted learning and e-accessibility. Lect. notes comput. sci., 2012, str. 261-270.  2. ISTENIČ STARČIČ, Andreja, COTIČ, Mara, and ZAJC, Matej. Design-based research on the use of a tangible user interface for geometry teaching in an inclusive classroom. British journal of educational technology, ISSN 0007-1013, sep. 2013, vol. 44, no. 5, str. 729-744, ilustr., doi: 10.1111/j.1467-8535.2012.01341.x.  3. PLESNIK, Emil, MALGINA, Olga, TASIČ, Jurij F., and ZAJC, Matej. Detection of the electrocardiogram fiducial points in the phase space using the euclidian distance measure. Medical engineering & physics, ISSN 1350-4533. [Print ed.], May 2012, vol. 34, no. 4, str. 524-529, ilustr. http://dx.doi.org/10.1016/j.medengphy.2012.01.005, doi: 10.1016/j.medengphy.2012.01.005.  4. MEŽA, Marko, BRESKVAR, Marko, KOŠIR, Andrej, BRICL, Irena, TASIČ, Jurij F., ROŽMAN, Primož. Telemedicine in the blood transfusion laboratory - remote interpretation of pre-transfusion tests. Journal of telemedicine and telecare, ISSN 1357-633X, 2007, vol. 13, no. 7, str. 357-362.  5. MEŽA, Marko. Development and introduction of the telemedical system into the blood transfusion practice. V: GRASCHEW, Georgi (ur.), ROELOFS, Theo A. (ur.). Advances in telemedicine : applications in various medical disciplines and geographical regions. Rijeka: Intech, cop. 2011. | | | | | |