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| UČNI NAČRT PREDMETA / COURSE SYLLABUS | | | | | | | | | | | | | | | | | |
| **Predmet:** | | | Modul E: Projektno vodenje, inovativnost in timsko delo | | | | | | | | | | | | | | |
| **Course title:** | | | Module E: Project Management, Innovation and Teamwork | | | | | | | | | | | | | | |
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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** | | | | | | | | 3. | | letni | | |
| 1st cycle academic study programme Electrical Engineering | | | | | **All fields** | | | | | | | | **3.** | | **summer** | | |
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| **Vrsta predmeta / Course type** | | | | | | | | | | | | Izbirni – splošni/ elective general | | | | | |
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| **Univerzitetna koda predmeta / University course code:** | | | | | | | | | | | | 64142 | | | | | |
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| **Predavanja**  **Lectures** | **Seminar**  **Seminar** | | | **Vaje**  **Tutorial** | | | **Klinične vaje**  **work** | | | | **Druge oblike študija** | | | **Samost. delo**  **Individ. work** | |  | **ECTS** |
| **30** |  | | | **30** | | |  | | | |  | | | **65** | |  | **5** |
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| **Nosilec predmeta / Lecturer:** | | | | | Damijan Miklavčič | | | | | | | | | | | | |
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| **Jeziki /**  **Languages:** | | **Predavanja / Lectures:** | | | | Slovenski / slovenian | | | | | | | | | | | |
| **Vaje / Tutorial:** | | | | Slovenski / slovenian | | | | | | | | | | | |
| **Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:** | | | | | | | | |  | **Prerequisits:** | | | | | | | |
| Vpis v letnik. | | | | | | | | |  | Enrolment in the year of the course. | | | | | | | |
| **Vsebina:** | | | | | | | |  | | **Content (Syllabus outline):** | | | | | | | |
| Osnove projektnega vodenja, cilj, faze, temeljni in specifični cilji projekta, trajanje, časovna razporeditev projekta, viri potrebni za izvedbo projekta, podatkovna baza projekta, planiranje, sledenje, predikcija, odločanje in ocenjevanje razvojno-raziskovalnih projektov, uporaba programa Super Project in/ali Microsoft Project.  Vrste teamov, značilnosti teamskega dela, vloga članov teama, tehnike in orodja za vzpostavitev teamskega dela.  Prepoznavanje in definiranje problema, iskanje možnih rešitev, izbira najboljše rešitve problema in implementacija rešitve. Ciklus reševanja problemov - simplex. Tehnike reševanja problemov: analiza problema (SWOT analiza, diagram ribja kost, ipd.); tehnike kreiranja idej za rešitve (možganska nevihta, zapisovanje idej, ipd.); tehnike izbora idej (odločitveno drevo, primerjanje po parih, ipd.).  Sistemski pristopi pri obvladovanju inovativne organizacije (analiza stanja, določanje ciljev inoviranja, izgradnja organizacijske kulture inoviranja, sistemi spodbujanja in nagrajevanja, management inovativnosti in raziskovalnega dela). Intelektualna lastnina (industrijska lastnina - patenti in modeli ter avtorske pravice; postopki za prijavo in podelitev pravic). Svetovni splet in evropsko podporno okolje pri inoviranju in razvojno-raziskovalnem delu. | | | | | | | |  | | Basics of project management, project objectives and phases, duration, time management, resource management, project database, planning, follow up, prediction, decision management and evaluation of research and development projects, use of Super Project and/or Microsoft Project.  Types of teams, the characteristics of teamwork, team member roles, techniques and tools to establish teamwork.  Recognizing and defining the problem, finding possible solutions, selecting the best solution of solutions and its implementation. Simplex - problem solving method. Techniques of problem solving (SWOT analysis, fish bone diagram, etc.); techniques for generating ideas (brainstorming, brain writing, etc.) Idea evaluation techniques (decision tree, pair comparisons, etc.).  System approach to innovation management (state analysis, innovation goal determination, establishing of innovation culture, systems of motivation and awarding, management of innovation). Intellectual property (industrial ownership – patents, models and copyrights; procedures for patent application and granting patents). World wide web and European supporting environment for innovation, research and development. | | | | | | | |

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| **Temeljni literatura in viri / Readings:** | | | | | |
| 1. Bajec M, Kern T, et al. Vodnik po znanju projektnega managementa, Moderna organizacija, Kranj 2007. 2. Cikajlo I., Gider F., Tehnike reševanja problemov, Založba Univerze v Novi Gorici 2010. 3. Likar B., Križaj D, Fatur P. Management inoviranja. 3. izdaja. Koper: Fakulteta za management, 2006. 4. Stare A, Projektni management: Teorija in praksa, Agencija s poti, Ljubljana 2011. 5. Lessard B., Lessard J., Project Management for Engineering Design, Morgan&Clypool, 2007. 6. Marmel E., Microsoft Office Project 2007 Bible, Wiley 2007. 7. Heldman K., PMP Project Management Profesional Exam Study Guide, Forth Edition, Sybex 2007. 8. Mukesh J., Delivering Successfull Projects with TSP and Six Sigma: A Practical Guide to Implementing Team Software Process, CRC Press 2009. 9. De Bono E., Six thinking hats, Penguin Books 2000. 10. Basadur M, The power of innovation: how to make innovation a way of life and put creative solutions to work, Pitman Publishing 2002. | | | | | |
| **Cilji in kompetence:** | |  | | **Objectives and competences:** | |
| Osvojitev teoretičnih osnov in prenosljivih znanj in veščin na področju projektnega vodenja, inoviranja, teamskega dela in tehnik reševanja problemov.  Študentje bodo razvili splošne kompetence:  - sposobnost analize, sinteze in predvidevanja rešitev ter posledic pojavov na področju managementa inoviranja, projektnega in teamskega dela  - obvladovanje raziskovalnih in razvojnih metod s področja projektnega in teamskega dela ter managementa inoviranja ter razvoj kritične in samokritične presoje,  - sposobnost uporabe znanj in veščin v praksi,  - avtonomnost pri strokovnem delu in pri sprejemanju odločitev,  - sposobnost argumentiranega zagovarjanja lastnih stališč in upoštevanje stališč drugih.  Študentje bodo razvili predmetno-specifične kompetence:  - poznavanje in razumevanje projektega in teamskega dela ter inovacijskih procesov,  - sposobnost za reševanje izzivov povezanih z večjo sposobnostjo projektnega in teamskega dela ter s krepitvijo ustvarjalnih in inovacijskih procesov,  - sposobnost iskanja ter uporabe novih informacij iz raznih virov,  - razumevanje povezanosti pridobljenih znanj v organizaciji in zahtev sodobnega obvladovanja s tehnološkimi, inventivnimi, raziskovalnimi, managerskimi in pravnimi vidiki,  - razumevanje in uporaba kritične analize in razvoja ter praktične uporabe teorij v reševanju konkretnih strokovnih problemov. | |  | | To understand theoretical knowledge and skills of project management, innovation management, teamwork and problem solving techniques.  Students will develop general competencies on:  - ability of analysis, synthesis and anticipation for solutions and consequences of phenomena of innovation management, project management and teamwork,  - management of research and development methods and innovation management and development of critical and self critical assessment,  - ability to employ knowledge and skills in practice,  - autonomy at professional work and decision making,  -ability of defending of one owns positions using arguments while considering different opinions.  The students will also develop subject specific competences:  - understanding project management, team work and innovation processes,  - ability of recognising challenges related on project management and team work and strengthening creative and innovative processes,  - ability of searching information and use of different information sources,  -understanding relations between acquired knowledge in organisation and necessity to control and manage processes considering technological, inventive, research, managerial and legal aspects,  - understand and use of acquired knowledge and skills for organizing and manageing of specific professional challenges. | |
| **Predvideni študijski rezultati:** | | |  | **Intended learning outcomes:** | |
| Poznavanje osnov projektnega vodenja, teamskega dela in tehnik reševanja problemov. Razumevanje koncepta intelektualne lastnine in načinov varovanja. | | |  | Knowledge and understanding of basics project management, teamwork and problem solving techniques. Recognising the concept of intellectual property and acquaintance with protecting intellectual property rights. | |
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| **Metode poučevanja in učenja:** | | |  | **Learning and teaching methods:** | |
| Predavanja, vaje, domače delo, samostojno delo, delo v skupinah, primeri in analiza | | |  | Lectures, labworks, homework, student's self-dependent work, work in groups, examples and analysis | |
| **Načini ocenjevanja:** | Delež (v %) /  Weight (in %) | | | | **Assessment:** |
| Zaključna ocena je tridelna. K zaključni oceni prispevajo:   * pisni in/ali ustni izpit, * priprava projekta, * izvedba, priprava poročil vaj.   • Za pozitivno oceno je potrebno zbrati skupaj vsaj 51% možnih točk, pri čemer mora biti vsaka komponenta (izpit in projekt skupaj s poročilom vaj) ocenjena pozitivno.  • Ocenjevalna lestvica: 6 (51-64%), 7 (65-74%), 8 (75-84%), 9 (85-94%), 10 (95-100%). | 10%  20%  70% | | | | Final grade is consisted of three parts:   * exam written and/or oral, * project work, * labwork and labwork reports. * For positive grade at least 51% of points has to be collected, where each of three parts listed above has to be assesed as positive. * Grade ranks: 6 (51-64%), 7 (65-74%), 8 (75-84%), 9 (85-94%), 10 (95-100%) |
| **Reference nosilca / Lecturer's references:** | | | | | |
| 1.GIDER, Franc, LIKAR, Borut, KERN, Tomaž, MIKLAVČIČ, Damijan. Implementation of a multidisciplinary professional skills course at an electrical engineering school. *IEEE transactions on education*, 2012, vol. 55, no. 3, str. 332-340.  2.GIDER, Franc, MIKLAVČIČ, Damijan, KERN, Tomaž, LIKAR, Borut. Teaching multidisciplinary soft skills at engineering school. V: XIV. IOSTE Symposium, International Organization for Science and Technology Education, June 13.-18. 2010, Bled, Slovenia. DOLINŠEK, Slavko (ur.). *Socio-cultural and human values in science and technology education : proceedings*. Ljubljana: Institute for Innovation and Development of University, 2010, 9 str.  3.LIKAR, Borut, MIKLAVČIČ, Damijan. Organisation and motivation of researchers in an interdisciplinary research team. V: KERN, Tomaž (ur.), RAJKOVIČ, Vladislav (ur.). *People and sustainable organization*. Frankfurt am Main: Peter Lang, 2011, str. 147-165.  4.MIKLAVČIČ, Damijan, MIR, Lluis Maria*. Electroporation device : patent no. US 7625729 B2, date Dec. 1. 2009 : application no. 10/517,038, PTC filed Jun. 10, 2003*. [S. l.]: United States Patent and Trademark Office, 2009.  5.MIKLAVČIČ, Damijan. Network for development of electroporation-based technologies and treatments: COST TD1104. The journal of membrane biology, 2012, vol. 245, no. 10, str. 591-598. | | | | | |