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| **UČNI NAČRT PREDMETA / COURSE SYLLABUS** | | | | | | | | | | | | | | | | |
| **Ime predmeta:** | | OSNOVE TEORIJE SISTEMOV | | | | | | | | | | | | | | |
| **Course title:** | | FUNDAMENTALS OF THE THEORY OF SYSTEMS | | | | | | | | | | | | | | |
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| **Študijski program in stopnja**  **Study programme and cycle** | | | | | **Študijska smer**  **Study option** | | | | | | | **Letnik**  **Year of study** | | **Semester**  **Semester** | | |
| GOSPODARSKA IN TEHNIŠKA LOGISTIKA 1. stopnja | | | | |  | | | | | | | 1. | | 2 | | |
| PROFESSIONAL HIGHER EDUCATION STUDY PROGRAMME ECONOMIC AND TECHNICAL LOGISTICS 1st degree | | | | |  | | | | | | | 1. | | 2 | | |
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| **Vrsta predmeta (obvezni ali izbirni) /**  **Course type (compulsory or elective)** | | | | | | | | | | | OBVEZNI | | | | | |
| COMPULSORY | | | | | |
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| **Univerzitetna koda predmeta / University course code:** | | | | | | | | | | | VS | | | | | |
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| **Predavanja**  **Lectures** | **Seminar**  **Seminar** | | | **Vaje**  **Tutorial** | | **Klinične vaje**  **Clinical training** | | | | **Druge oblike študija**  **Other forms of study** | | | **Samost. delo**  **Individual work** | |  | **ECTS** |
| 24 e-P  36 a-P |  | | | 9 e-V  21 a-V | |  | | | |  | | | 90 | |  | 6 |
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| **Nosilec predmeta / Course coordinator:** | | | | | **BOJAN ROSI** | | | | | | | | | | | |
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| **Jeziki /Languages:** | | | **Predavanja / Lectures:** | | | | SLOVENSKI/SLOVENE | | | | | | | | | |
| **Vaje / Tutorial:** | | | | SLOVENSKI/SLOVENE | | | | | | | | | |
| **Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:** | | | | | | | |  | **Prerequisites for enrolling in the course or for performing study obligations:** | | | | | | | |
| Ni pogojev. | | | | | | | |  | None. | | | | | | | |
| **Vsebina (kratek pregled učnega načrta):** | | | | | | |  | | **Content (syllabus outline):** | | | | | | | |
| * Izhodišča teorije sistemov. * Razvoj teorije sistemov. * Osnovne karakteristike sistemov. * Lastnosti sistemov, struktura in delovanje sistemov ter stanje sistema. * Sistemski procesi. * Osnove modeliranja in simulacij~~e~~ sistemov. * Osnove FUZZY teorije. * Osnove teorije živih sistemov. * Metodologija mehkih sistemov. | | | | | | |  | | * Introduction to the theory of systems. * Development of the theory of systems. * Basic characteristics of systems. * Characteristics of systems, structure and functioning of systems and the state of a system. * System processes. * Basic of modelling and simulations of systems. * Basic of fuzzy theory. * Basic of theory of living systems. * Soft systems methodology. | | | | | | | |

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| **Temeljni literatura in viri / Reading materials:** | | | | | |
| Bertalanffy, v. L. (1979). Ge*neral Systems Theory, Foundations, Development, Applications, Revised Edition*. Sixth Printing, New York, Brazillier.  Rosi, B. (2008). Ali ste pripravljeni dialektično omrežno razmišljati? Maribor, RoBo.  Mulej, M. (2000). *Dialektična in druge mehkosistemske teorije*. Maribor: Ekonomsko-poslovna fakulteta, Univerza v Mariboru.  ROSI, Bojan. *Smart solutions in the Tezno Business Production Zone in Maribor and upgrade design*. Celje: Fakulteta za logistiko, 2022. 1 spletni vir (1 PDF datoteka (9 str.)), ilustr. <http://fl.um.si/knjiznicaFL/eknjige/Rosi_2021_Smart_solutions_in_the_Tezno_Business_Production_Zone.pdf>. | | | | | |
| **Cilji in kompetence:** | |  | | **Objectives and competences:** | |
| Cilji predmeta so:   * razumevanje osnovnih pojmov iz teorije sistemov, * razumevanje temeljnih variant teorij sistemov * razumevanje ustrezne uporabe sistemskega razmišljanja in sistemskega pristopa pri razreševanju (logističnih) problemov   Kompetence:   * študent je zmožen prepoznati in uporabiti ustrezne osnovne pojme teorije sistemov * študent je zmožen uporabiti sistemsko razmišljanje in sistemski pristop pri razreševanju (logističnih) problemov * študent je sposoben prepoznati vlogo posameznih sestavin (logističnega) sistema in jih primerno umestiti ter povezati v zaokroženo, dovolj celovito celoto * študent se nauči praktične uporabnosti sisitemskih pristopov v vsakodnevni praksi | |  | | The objectives of the course are:   * understanding of basic concepts from systems theory, * understanding the basic variants of systems theories * understanding the appropriate use of systems thinking and a systems approach to problem-solving (in logistics)   Competences:   * the student can recognize and use the relevant basic concepts of systems theory * the student can use systems thinking and a systems approach to solving (logistic) problems. * the student can recognize the role of individual components of the (logistics) system and place them appropriately and connect them into a rounded, sufficiently complete whole * the student will learn the practical applicability of systemic approaches in everyday practice | |
| **Predvideni študijski rezultati:** | | |  | **Intended learning outcomes:** | |
| Po uspešno zaključenem predmetu so študenti zmožni:   * opisati osnovne gradnike (sestavine in povezave) teorije sistemov, * uporabiti sistemski pristop pri reševanju (logističnih) problemov, * razlikovati temeljne značilnosti posameznih teorij sistemov, * uporabiti sistemsko metodologijo v praksi. | | |  | Upon successful completion of this course, students can:   * describe the basic building blocks (components and connections) of systems theory, * use a systematic approach to (logistic) problem-solving, * distinguish the essential characteristics of individual systems theories, * use a system methodology in practice. | |
| **Metode poučevanja in učenja:** | | |  | **Learning and teaching methods:** | |
| Predavanja: pri predavanjih študent spozna teoretične vsebine predmeta. Del predavanj se izvaja na klasični način v predavalnici, del pa v obliki e-predavanj (e-predavanja se lahko izvajajo na videokonferenčni način ali s pomočjo posebej v ta namen didaktično pripravljenih e-gradiv v virtualnem elektronskem učnem okolju).  Vaje:  pri vajah študent utrdi teoretično znanje in spozna aplikativne možnosti. Praktične strokovne ekskurzije v podjetja v RS. Del vaj se izvaja na klasični način v predavalnici, del pa v obliki e-vaj (e-vaje se lahko izvajajo na videokonferenčni način ali s pomočjo posebej v ta namen didaktično pripravljenih e-gradiv v virtualnem elektronskem učnem okolju). | | |  | Lectures: students understand the theoretical frameworks of the course. Part of the lecture course is in a classroom, while the rest is in the form of e-learning (e-lectures may be given via video-conferencing or with the help of specially designed e-material in a virtual electronic learning environment).  Tutorials:  Students enhance their theoretical knowledge and learn how to apply it. Part of the seminar is in a classroom, while the rest is in the form of e-tutorial (e-seminars may be given via video-conferencing or with the help of specially designed e-material in a virtual electronic learning environment). | |
| **Načini ocenjevanja:** | Delež (v %) /  Share (in %) | | | | **Assessment methods:** |
| Opravljene obveznosti (e-predavanja, e-vaje in predstavitev seminarske/projektne naloga) so pogoj za pristop k izpitu.   * Pisni izpit * E-vaje in E-predavanja * Predstavitev seminarske/projektne naloge v okviru vaj | 70 %  10 %  20 % | | | | Successful completion of e-lectures, e tutorials and presentation of a seminar/project work at tutorials is a prerequisite for entering the exam.   * Written examination * E-lectures and E-tutorials * Presentation of a seminar/project work at tutorials |

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| **Reference nosilca / Course coordinator's references:** |
| 1. HRIBAR, Gašper, PODBREGAR, Iztok, ROSI, Bojan. A model of citizens' trust in intelligence services. *Security journal*, ISSN 1743-4645.  2. DRAGAN, Dejan, KESHAVARZSALEH, Abolfazl, POPOVIĆ, Vlado, JEREB, Borut, ROSI, Bojan. Model-based condition monitoring : state-space solution for counter-current heat exchanger. *Journal of engineering thermophysics*, ISSN 1990-5432, 2020, vol. 2, iss. 1, str. 503-517, ilustr.   3. BUTTON, Kenneth John, KRAMBERGER, Tomaž, GROBIN, Klemen, ROSI, Bojan. A note on the effects of the number of low-cost airlines on small tourist airports' efficiencies. *Journal of Air Transport Management*, ISSN 1873-2089.  4. STERNAD, Marjan, JAGRIČ, Timotej, ROSI, Bojan. Railway usage charges based on marginal maintenance costs. *Proceedings of the Institution of Civil Engineers - Transport*, ISSN 1751-7710. 3  5. GUMZEJ, Roman, ROSI, Bojan. Automated authentication and authorisation of consignors and their consignments within secure supply chains : Elektronski vir. *Tehnički vjesnik*, ISSN 1848-6339, 2018, vol. 25, iss. 1, str. 203-209.  6. GUMZEJ, Roman, ROSI, Bojan. An agent-based simulation of a QoS-oriented supply chain. *Promet*, ISSN 0353-5320. [Print ed.], 2017, vol. 29, no. 6, str. 593-601, ilustr. |