

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Ime predmeta: Course title:	INFORMACIJSKI SISTEMI V LOGISTIČNIH PROCESIH INFORMATION SYSTEMS IN LOGISTIC PROCESSES
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Študijski program in stopnja Study programme and cycle	Študijska smer Study option	Letnik Year of study	Semester Semester
LOGISTIKA SISTEMOV 3. stopnja		1.	1. in 2.
SYSTEM LOGISTICS 3 rd degree		1.	1. in 2.

Vrsta predmeta (obvezni ali izbirni) / Course type (compulsory or elective)	IZBIRNI
	ELECTIVE

Univerzitetna koda predmeta / University course code:	DR
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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
20					160	6

Nosilec predmeta / Course coordinator:	ROMAN GUMZEJ
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Jeziki / Languages:	Predavanja/ Lecture:	SLOVENSKI / SLOVENE
	Vaje / Tutorial:	SLOVENSKI / SLOVENE

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

Ni pogojev.

Prerequisites for enrolling in the course or for performing study obligations:

None.

Vsebina:

Vsebina predmeta je usmerjena v integracijo sistemskih znanj z najnovejšimi raziskavami na področju informacijskih v logističnih procesih:

- Logistični izzivi informacijske družbe
 - Vseprisotno računalništvo, kiber-fizikalni sistemi, delovanje v realnem času, varnost in zaupnost
 - Splet znanja in spletne ontologije, spletni agenti, komunikacijski protokoli (FIPA standard), avtonomno, samo-prilagodljivo delovanje (MAPE-K)
 - Integracija konceptov v inteligentnih logističnih sistemih, internetu stvari in fizičnem internetu
- Sistemi za podporo odločanju
 - Napredne tehnike modeliranja in simulacije kot osnova sistemskega pristopa k analizi in optimizaciji intra- in inter-logističnih procesov:

Content (Syllabus outline):

The content of the subject is aimed at integration of systems knowledge and the newest research in the area of information technologies in logistic processes:

- Logistic challenges of the information society
 - Ubiquitous computing, cyber-physical systems, real-time operation, safety and security
 - Knowledge web and web ontologies, web agents, communication protocols (FIPA standard), autonomous, self-adaptive operation (MAPE-K)
 - Integration of concepts in the framework of intelligent logistic systems, Internet of things and physical Internet
- Decision support systems

<ul style="list-style-type: none"> ○ Diskretna dogodkovna simulacija ○ Sistemska dinamika ○ Simulacija na osnovi agentov ○ Simulacija omrežja <ul style="list-style-type: none"> ● Povezovanje paradigem v več-nivojskem, intra- in inter-organizacijskem odločanju <p>3. Upravljanje kakovosti storitve v inteligentnih logističnih sistemih</p> <ul style="list-style-type: none"> ● Kazalniki in standardi kakovosti storitve (korektnost, pravočasnost, zanesljivost in predvidljivost) ● Model vrednotenja in zagotavljanja kakovosti storitve (integracija metod in standardov v CMM modelu) 	<ul style="list-style-type: none"> ● Advanced simulation modelling techniques as a foundation to systems approach to analysis and optimisation of intra- and inter-logistic processes: <ul style="list-style-type: none"> ○ Discrete event simulation ○ Systems dynamics ○ Agent-based simulation ○ Network simulation ● Paradigm integration in a multi-layered, intra- and inter-organisational decision making <p>3. Service quality management in intelligent logistic systems</p> <ul style="list-style-type: none"> ● Service quality indicators (correctness, timeliness, dependability and predictability) ● Service quality evaluation and assurance model (integration of methods and standards in a CMM model)
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Temeljni literatura in viri / Textbooks:

GUMZEJ, Roman. Računalništvo in informatika v logistiki. Celje: Fakulteta za logistiko, 2013. XIX, 195 str., graf. prikazi. ISBN 978-961-6562-87-4. ISBN 978-961-6562-86-7.

GUMZEJ, Roman. Informacijska podpora logističnim sistemom. Celje: Fakulteta za logistiko, 2013. XV, 219 str., graf. prikazi. ISBN 978-961-6562-91-1. ISBN 978-961-6562-90-4.

GUMZEJ, Roman. Logistika in e-poslovanje. Celje: Fakulteta za logistiko, 2013. XIV, 130 str., graf. prikazi. ISBN 978-961-6562-88-1. ISBN 978-961-6562-89-8.

Dodatna literatura

POLETAN JUGOVIĆ, Tanja, ČIŠIĆ, Dragan, GUMZEJ, Roman. Supply chain service quality improvement by e-marketplace automation. Promet. [Print ed.]. 2019, vol. 31, no. 2, str. 185-194, ilustr. ISSN 0353-5320. <https://doi.org/10.7307/ptt.v31i2.3042>, DOI: 10.7307/ptt.v31i2.3042.

MILIĆ, Bojan, ROSI, Bojan, GUMZEJ, Roman. An approach to e-marketplace automation. Tehnički vjesnik : znanstveno-stručni časopis tehničkih fakulteta Sveučilišta u Osijeku. May/Jun. 2019, god.=vol. 26, br.=no. 3, str. 639-649, ilustr. ISSN 1330-3651. <https://doi.org/10.17559/TV-20171201150248>, DOI: 10.17559/TV-20171201150248.

GUMZEJ, Roman, ČIŠIĆ, Dragan. Decentralized agent-based electronic marketplace supply chain ecosystem : Elektronski vir. Pomorstvo. 2018, vol. 32, no. 1, str. 21-27. ISSN 1846-8438. https://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=296855.

GUMZEJ, Roman, ROSI, Bojan. Automated authentication and authorisation of consignors and their consignments within secure supply chains : Elektronski vir. Tehnički vjesnik. 2018, vol. 25, iss. 1, str. 203-209. ISSN 1848-6339. https://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=285638.

GUMZEJ, Roman, ROSI, Bojan. An agent-based simulation of a QoS-oriented supply chain. Promet. [Print ed.]. 2017, vol. 29, no. 6, str. 593-601, ilustr. ISSN 0353-5320. [COBISS.SI-ID 512889917], [JCR, SNIP]

RASHAD, Waleed, GUMZEJ, Roman. The information technology in supply chain integration : case study of Reda Chemicals with Elemica. International journal of supply chain management. [Spletna izd.]. Mar. 2014, vol. 3, no. 1, str. 62-69. ISSN 2050-7399. <http://ojs.excelingtech.co.uk/index.php/IJSCM/article/view/876/pdf>.

GUMZEJ, Roman, RAKOVSKA, Miroslava. Simulation modeling and analysis for sustainable supply chains. V: GRZYBOWSKA, Katarzyna (ur.), AWASTHI, Anjali (ur.), SAWHNEY, Rapinder (ur.). Sustainable logistics and production in industry 4.0 : new opportunities and challenges. [S. l.]: Springer Nature, cop. 2020. Str. 145-160, ilustr. Ecoproduction. ISBN 978-3-030-33369-0. ISSN 2193-4614. https://doi.org/10.1007/978-3-030-33369-0_9, DOI: 10.1007/978-3-030-33369-0_9.

JaamSim Development Team (2019). JaamSim: Discrete-Event Simulation Software. Version 2019-10. Vir: <http://jaamsim.com>.

Wilensky U. NetLogo (1999-2016). Center for Connected Learning and Computer-Based Modeling, Northwestern University, Evanston, IL. <https://ccl.northwestern.edu/netlogo/index.shtml>
 German Aerospace Center (DLR) and others (2020). SUMO User Documentation. <https://https://sumo.dlr.de/docs/index.html>

Cilji:

Cilj je usposobiti študenta, da je sposoben

- Samostojnega znanstveno raziskovalnega dela,
- integracije in prenosa novih znanj na sistemskem nivoju oz. ob uporabi systemskega pristopa (teorije).

Objectives:

The core objectives are to make students

- Self-reliant in scientific research,
- capable for integration and transfer of new knowledge on system level by use of the systems approach (theory).

Predvideni študijski rezultati:

Znanje in razumevanje:

- Pregled literature in osnutek rešitve predvidenega problema iz doktorske disertacije z vidika informacijsko-tehnološke podpore.

Prenesljive/ključne spretnosti in drugi atributi:

- Sposobnost analize, sinteze in aplikacije najnovejših znanj na področju informacijskih tehnologij v logističnih sistemih in procesih.

Intended learning outcomes:

Knowledge and Understanding:

- Literature review and draft solution to the problem envisaged by the doctoral thesis from the viewpoint of information-technological support.

Transferable/Key Skills and other attributes:

- Ability of analysis, synthesis and application of the latest knowledge in the area of information technology in logistics systems and processes.

Metode poučevanja in učenja:

- Konzultacije – tutorstvo.
- Individualno raziskovalno delo kandidata.

Learning and teaching methods:

- Consulting – tutoring.
- Individual research work.

Načini ocenjevanja:	Delež (v %) / Weight (in %)	Assessment:
Ocena raziskovalnega dela.	100%	Assessment of the research work.

Reference nosilca / Lecturer's references:

1. POLETAN JUGOVIĆ, Tanja, ČIŠIĆ, Dragan, GUMZEJ, Roman. Supply chain service quality improvement by e-marketplace automation. *Promet*. [Print ed.]. 2019, vol. 31, no. 2, str. 185-194, ilustr. ISSN 0353-5320. <https://doi.org/10.7307/ptt.v31i2.3042>, DOI: 10.7307/ptt.v31i2.3042.
2. MILIĆ, Bojan, ROSI, Bojan, GUMZEJ, Roman. An approach to e-marketplace automation. *Tehnički vjesnik : znanstveno-stručni časopis tehničkih fakulteta Sveučilišta u Osijeku*. May/Jun. 2019, god.=vol. 26, br.=no. 3, str. 639-649, ilustr. ISSN 1330-3651. <https://doi.org/10.17559/TV-20171201150248>, DOI: 10.17559/TV-20171201150248.
3. GUMZEJ, Roman, ČIŠIĆ, Dragan. Decentralized agent-based electronic marketplace supply chain ecosystem : *Elektronski vir. Pomorstvo*. 2018, vol. 32, no. 1, str. 21-27. ISSN 1846-8438. https://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=296855.
4. GUMZEJ, Roman, ROSI, Bojan. Automated authentication and authorisation of consignors and their consignments within secure supply chains : *Elektronski vir. Tehnički vjesnik*. 2018, vol. 25, iss. 1, str. 203-209. ISSN 1848-6339. https://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=285638.

5. GUMZEJ, Roman, ROSI, Bojan. An agent-based simulation of a QoS-oriented supply chain. *Promet*. [Print ed.]. 2017, vol. 29, no. 6, str. 593-601, ilustr. ISSN 0353-5320. [COBISS.SI-ID 512889917], [JCR, SNIP]
6. RASHAD, Waleed, GUMZEJ, Roman. The information technology in supply chain integration : case study of Reda Chemicals with Elemica. *International journal of supply chain management*. [Spletna izd.]. Mar. 2014, vol. 3, no. 1, str. 62-69. ISSN 2050-7399. <http://ojs.excelingtech.co.uk/index.php/IJSCM/article/view/876/pdf>.
7. GUMZEJ, Roman, RAKOVSKA, Miroslava. Simulation modeling and analysis for sustainable supply chains. V: GRZYBOWSKA, Katarzyna (ur.), AWASTHI, Anjali (ur.), SAWHNEY, Rapinder (ur.). *Sustainable logistics and production in industry 4.0 : new opportunities and challenges*. [S. l.]: Springer Nature, cop. 2020. Str. 145-160, ilustr. *Ecoproduction*. ISBN 978-3-030-33369-0. ISSN 2193-4614. https://doi.org/10.1007/978-3-030-33369-0_9, DOI: 10.1007/978-3-030-33369-0_9.