

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Ime predmeta: NAPREDNO MODELIRANJE V LOGISTIKI
Course title: ADVANCED MODELING IN LOGISTICS

Študijski program in stopnja Study programme and cycle	Študijska smer Study option	Letnik Year of study	Semester Semester
LOGISTIKA SISTEMOV 1. stopnja		3.	6.
SYSTEM LOGISTICS 1 st degree		3.	6.

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

OBVEZNI
COMPULSORY

Univerzitetna koda predmeta / University course code:

UN

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 21 a-P		18 e-V 27 a-V			90	6

Nosilec predmeta / Course coordinator:

TOMAŽ KRAMBERGER

Jeziki /Languages:

Predavanja / Lectures: 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 (kratek pregled učnega načrta):

- Osnovni koncepti modeliranja in simulacij.
- Vrste modeliranja in simulacija.
- Primeri modelov praktičnih problemov v logistiki.
- Izvedba simulacij praktičnih problemov v logistiki.

Content (syllabus outline):

- Basic concepts of modelling and simulation.
- Types of modelling and simulation.
- Modelling of practical problems in logistics.
- Simulation of practical problems in logistics.

Temeljni literatura in viri / Reading materials:

E-gradivo predmeta.
 Simchi-Levi, D., Chen, X., Bramel, J.: The Logic of Logistics, Springer Series in Operations Research, New York, 1997.

Cilji in kompetence:

- Študenti:
- spoznajo osnovne pojme in vrste modeliranja in simulacij,
 - razumejo pomen modeliranja in simulacij

Objectives and competences:

- Students:
- get familiar with the basic definitions and types of modelling, and simulation,

logističnih procesov,

- znajo uporabiti koncepte modeliranja in simulacij za analizo kompleksnejših problemov v logistiki,
- so sposobni ovrednotiti dobljene rezultate ter pripraviti načrt za njihovo implementacijo v praksi.

- understands the impact of modelling and simulation of logistics processes,
- knows how to use concepts of modelling and simulation for the analysis of complex logistics problems,
- are able to evaluate obtained results and to form a plan for their practical implementation.

Predvideni študijski rezultati:

Znanje in razumevanje:

- študenti spoznajo in razumejo osnovne pojme modeliranja in simulacij,
- znajo uporabiti pridobljena znanja, izdelati simulacijski model in analizirati obravnavan problem, ter seveda tudi dobljene rezultate,
- študenti razlikujejo med realnim in simulacijskim okoljem, ter so sposobni dobljene rezultate iz simulacijskega okolja prilagoditi za uporabo v realnem okolju.

Prenesljive/ključne spretnosti in drugi atributi:
Študenti se usposobijo za uporabo teoretičnega znanja v praktičnih primerih, predvsem pri procesih, ki so jih spoznali pri predmetih Transportna logistika, Geografski informacijski sistemi in Skladiščno poslovanje in skladiščni sistemi.

Intended learning outcomes:

Knowledge and understanding:

- students learn and understand the basics of modelling and simulation,
- knows how to use the gained knowledge, knows how to make a simulation model, and are able to analyse the problem and the obtained results,
- students understand the differences between the real and simulation environment, and are able to adjust the obtained results from the simulation model to the real environment.

Transferable/Key Skills and other attributes:
Students learn how to apply their theoretical knowledge to practical examples, especially in processes from subjects Transportation logistics, Geographical information systems, Warehouse systems and warehouse operations.

Metode poučevanja in učenja:

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. 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).

Learning and teaching methods:

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 are able to apply it. Part of the seminar is in a classroom while the rest is in the form of e-learning (e-tutorials 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:
<ul style="list-style-type: none"> ▪ Opravljene obveznosti e-predavanj in e-vaj so pogoj za pristop k izpitu. 		<ul style="list-style-type: none"> ▪ Successful completion of e-lectures and e-tutorials is a prerequisite for entering the exam.
<ul style="list-style-type: none"> ▪ Pisni izpit. 	70%	<ul style="list-style-type: none"> ▪ Written examination.
<ul style="list-style-type: none"> ▪ Seminaraska naloga. 	30%	<ul style="list-style-type: none"> ▪ Oral examination.

Reference nosilca / Course coordinator's references:

KRAMBERGER, Tomaž, MONIOS, Jason, ŠTRUBELJ, Gregor, RUPNIK, Bojan. Using dry ports for port competition : the case of Adriatic ports. *International journal of shipping and transport logistics*, ISSN 1756-6525. [Online ed.], 2018, vol. 10, iss. 1, str. 18-44, ilustr. <http://www.inderscience.com/info/inarticle.php?artid=88319>, doi: [10.1504/IJSTL.2018.10008533](https://doi.org/10.1504/IJSTL.2018.10008533). [COBISS.SI-ID [512889661](#)].

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. [Online ed.], 2018, vol. 72, str. 92-97. <https://www.sciencedirect.com/science/article/pii/S096969971730114X>, doi: [10.1016/j.jairtraman.2017.12.003](https://doi.org/10.1016/j.jairtraman.2017.12.003). [COBISS.SI-ID [512892733](#)].

BUTTON, Kenneth John, KRAMBERGER, Tomaž, VIZINGER, Tea, INTIHAR, Marko. Economic implications for Adriatic seaport regions of further opening of the Northern Sea Route. *Maritime economics & logistics*, ISSN 1479-294X. [Spletna izd.], Mar. 2017, vol. 19, iss. 1, str. 52-67, ilustr. <http://www.palgrave-journals.com/mel/journal/vaop/ncurrent/abs/mel201525a.html>, doi: [10.1057/mel.2015.25](https://doi.org/10.1057/mel.2015.25). [COBISS.SI-ID [512702781](#)].

INTIHAR, Marko, KRAMBERGER, Tomaž, DRAGAN, Dejan. Container throughput forecasting using dynamic factor analysis and ARIMAX model. *Promet*, ISSN 0353-5320. [Print ed.], 2017, vol. 29, no. 5, str. 529-542, ilustr. [COBISS.SI-ID [512879421](#)].

KRAMBERGER, Tomaž, RUPNIK, Bojan, ŠTRUBELJ, Gregor, PRAH, Klemen. Port hinterland modelling based on port choice. *Promet*, ISSN 0353-5320. [Print ed.], 2015, vol. 27, no. 3, str. 195-203, ilustr. <http://www.fpz.unizg.hr/traffic/index.php/PROMTT/article/view/1611>, doi: [10.7307/ptt.v27i3.1611](https://doi.org/10.7307/ptt.v27i3.1611). [COBISS.SI-ID [512689725](#)].