UČNI NAČRT PREDMETA/COURSE SYLLABUS	
Predmet:	UPORABA STATISTIČNIH METOD V LOGISTIKI
Course title:	APPLICATION OF STATISTICAL METHODS IN LOGISTICS

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
GOSPODARSKA IN TEHNIŠKA LOGISTIKA 1.stopnja		2.	4.
PROFESSIONAL HIGHER EDUCATION STUDY PROGRAMME ECONOMIC AND TECHNICAL LOGISTICS 1st degree		2.	4.

Vrsta predmeta / Course type

OBVEZNI

Univerzitetna koda predmeta / University course code:

VS

Predavanja Lectures	Seminar Seminar	vaje Tutorial	Klinične vaje Laboratory work	Druge oblike študija Field work	Samost. delo Individ. work	ECTS
24 e-P 21 a-P		12 e-V 6 a-V	12 LV		105	6

Nosilec predmeta / Lecturer:

TOMAŽ KRAMBERGER

Jeziki / Languages:	Predavanja / Lectures:	SLOVENSKI / SLOVENE
	Vaje / Tutorial:	SLOVENSKI / SLOVENE

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	Prerequisits:
Ni pogojev.	None.

Vsebina:	Content (Syllabus outline):
Urejanje in prikazovanje podatkov. Statistične mere: srednje vrednosti, mere variabilnosti, asimetrije, sploščenosti. Osnove verjetnostnega računa. Slučajne spremenljivke, najpomembnejše diskretne in zvezne porazdelitve, številske karakteristike slučajnih spremenljivk. Vzorčni pristop: intervalno ocenjevanje statističnih parametrov. Testiranje domnev o vrednostih statističnih parametrov in o porazdelitvah. Osnove regresije in korelacije. Osnove analize časovnih vrst. Uporaba EXCELA v statistiki.	Editing and presenting data. Statistical measures: mean values, variability measures, asymmetries, kurtosis. Basis of probability calculus. Random variables, most important discrete and continuous distributions, numerical characteristics of random variables. Sample approach: interval estimation of statistical parameters. Testing assumptions on values of statistical parameters and on disseminations. Basics of regression and correlation. Basics of analysis of time series. The use of Excel in statistics.

Temeljni literatura in viri / Readings:

E-gradivo predmeta.
KRAMBERGER, Tomaž. *Osnove modeliranja u logistici*. Subotica: [Ekonomski fakultet], 2015. 290 str., ilustr. ISBN 978-86-84819-98-9. [COBISS.SI-ID 512672317].
Tominc, P.: Statistika v prometu, Univerza v Mariboru, Fakulteta za gradbeništvo, Maribor, 2000.
Spiegel, M.: Schaum's outline of theory and problems of statistics, London, McGraw-Hill International, 1992.

Cilji in kompetence:	Objectives and competences:
Študenti: ▪ se naučijouporabljati orodja, tehnike in metode, ki omogočajo spremeniti različne podatke v uporabne informacije, ▪ se naučijo uporabe statističnih metod v analizi logističnih procesov in logističnih sistemov, ▪ se naučijo uporabljati Excel v namene statističnega preučevanja pojavov v logistiki.	Students: ▪ learn to use tools, techniques and methods which enable them to change various data into useful information, ▪ learn to apply statistical methods in analysis of logistics processes and logistics systems, ▪ learn to use Excel for statistical analysis of phenomena in logistics.

Predvideni študijski rezultati:	Intended learning outcomes:
Znanje in razumevanje: ▪ zmožnost analize in sinteze, ▪ zmožnost učenja, ▪ prepoznavanje in uporaba ustreznih analitičnih, ▪ konceptov in orodij, ▪ zmožnost analize problema in iskanja primernih rešitev. Prenesljive/ključne spretnosti in drugi atributi: Študenti se usposobijo za uporabo teoretičnega znanja v praktičnih primerih, predvsem pri predmetih upravljanje s človeškimi viri, management v logistiki, odličnost v logistiki.	Knowledge and understanding: ▪ the ability to analyse and synthesise, ▪ the ability to learn, ▪ the ability to recognise and apply appropriate analytical concepts and tools, ▪ the ability to analyse a problem and to find adequate solutions to it. Transferable/key skills and other attributes: Students gain the ability to apply theoretical knowledge in practical examples, especially in courses management of human resources, management in logistics and excellence in logistics.

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. 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 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 %) / Weight (in %)	Assessment:
Opravljene obveznosti e-predavanj in e-vaj so pogoj za pristop k izpitu.		Successful completion of e-lectures and e-tutorials is a prerequisite for entering the exam.
▪ Pisni izpit,	▪ 70%	▪ Written examination,
▪ seminarska naloga.	▪ 30%	▪ project work.

Reference nosilca / Lecturer's references:

1. KRAMBERGER, Tomaž, ŽEROVNIK, Janez. Priority constrained Chinese postman problem. *Logistics and sustainable transport*, 22-05-07, vol. 1, no 1, 15 str. http://www.jlst.org/uploads/priority_constrained_chinese_postman_kramb.zer.pdf.

2. KRAMBERGER, Tomaž, ROSI, Bojan. Do managers have enough quality information for decision-making. *Organizacija (Kranj)*, sep.-okt. 2007, letn. 40, št. 5, str. 207-217.

3. KRAMBERGER, Tomaž, ŽEROVNIK, Janez. A contribution to environmentally friendly winter road maintenance: : optimizing road de-icing. *Transp. res., Part D Transp. environ.*. [Print ed.], July 2008, vol. 13, iss. 5, str. 340-346. http://dx.doi.org/10.1016/j.trd.2008.03.007, doi: 10.1016/j.trd.2008.03.007.

4. KRAMBERGER, Tomaž, ŠTRUBELJ, Gregor, ŽEROVNIK, Janez. Chinese postman problem with priority nodes. *Fund. Computing Decis. Sci.*, 2009, vol. 34, no. 4, str. 233-264. http://fcds.cs.put.poznan.pl/FCDS2/ArticleDetails.aspx?articleId=218.

5. FOŠNER, Maja, KRAMBERGER, Tomaž. Logistics as a part of leisure and tourism industry. V: 15th Annual Conference European Council for Business Education, May 28-30, 2010, Lausanne, Switzerland. *"Co-operation and competition - in the leisure and service industries" : proceedings of the 15th Annual Conference European Council for Business Education, May 28-30, 2010, Lausanne, Switzerland*, (ECBE proceedings of the Annual Conference, 2010). Lausanne: European Council for Business Education: = ECBE, 2010, str. 70-78.