UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	OBNOVLJIVI VIRI ENERGIJE V LOGISTIČNIH PROCESIH
Coursetitle:	RENEWABLE ENERGY SOURCES IN LOGISTICS PROCESSES

Študijski program in stopnja Studyprogrammeandlevel	Študijska smer Studyfield	Letnik Academicyear	Semester Semester
Logistika sistemov 2.stopnja		2	3.
SYSTEM LOGISTICS 2.degree		2	3.

Vrsta predmeta / Coursetype	IZBIRNI
Univerzitetna koda predmeta / Universitycoursecode:	MAG

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje Laboratorywork	Druge oblike študija Fieldwork	Samost. delo Individ. work	ECTS
24 e-P 21 a-P		19 e-V 21 a-V			65	5

Nosilec predmeta / Lecturer:	MATJAŽ KNEZ
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:

- Trajnostna logistika ter cilji in ukrepi javne politike
- Trajnostna potrošnja in proizvodnja
- Obnovljivi viri in njihove prednosti
- Zmanjševanje emisij z uporabo različnih alternativnih virov energije
- Obnovljivi viri energije v logističnih procesih
- Energetsko upravljanje v logistiki
- Povečevanje energetske učinkovitosti logističnih procesov
- Študije praktičnih primerov

Content (Syllabusoutline):

- Sustainable Logistics objectives and public policy
- Sustainable consumption and production
- Renewable resources and their benefits
- Reducing emissions using a variety of alternative energy sources
- Renewable energy sources in logistics processes
- Energy Management in logistics
- Increasing the energy efficiency of logistics processes
- Case studies

Temeljni literatura in viri / Readings:

Knez M., (2013) OBNOVLJIVI VIRI ENERGIJE V LOGISTIČNIH PROCESIH. E-gradivo – v pripravi. Univerza v Mariboru, Fakulteta za logistiko.
McKinnon A., Browne M., Whiteing A. (2012) GreenLogistics, ImprovingtheEnvironmentalSustainabilityofLogistics.
Muneer T. (2012) SolarRadiationandDaylightModels. Routledge.
Zbirka Zelena Slovenija (2009) Obnovljivi viri energije. Fitmedia d.o.o.
Makower J., 2009. StrategiesfortheGreenEconomy. McGrawHill, New York.
MacKinnon D., Shaw J., Docherty I. (2008) DivergingMobilities? Devolution, Transport andpolicyInnovation. Elsevier.
Esty D.C., Winston A.S. (2009) Green to Gold. Howsmartcompaniesuseenvironmentalstrategy to innovate, createvalue, andbuildcompetitiveadvantage. John Wiley&Sons, Inc. Hoboken New Jersey.
Trainer T. (2007) RenewableEnergyCannotSustain a ConsumerSociety. Springer.
Clini C., Musu I., LodovicaGullino M. (2008) SustainableDevelopmentandEnvironmentalManagement. ExperiencesandCaseStudies. Springer Science + BusinessMedia B.V.
Dodatna literatura: Izbrani članki ter nova izdana literatura s področja predmeta

Cilji in kompetence:

Cilj tega predmeta je:

- Poznavanje potencialnih virov obnovljive energije in njihova integracija v logističnih procesih,
- poznavanje možnosti in načinov energijske pretvorbe ter rabe v logističnih procesih
- Poznavanje vplivov energetike na okolje,
- nadgraditi razumevanje postopkov in orodij za optimizacijo logističnih procesov v smislu vzpostavljanja trajnostnega razvoja,
- se usposobiti za samostojno znanstveno raziskovalno delo na tem področju,
- se usposobiti za predstavitev svojega raziskovalnega dela (članki, referati).

Objectives and competences:

The objective of the course is to:

- identification of potential sources of renewable energy and their integration in logistics processes,
- knowledge of the possibilities and ways of energy conversion and use in logistics processes
- knowing environmental impact of energy industry
- enhance understanding of processes and tools to optimize the logistics processes in terms of creating sustainable development
- qualify for independent scientific research work in this field,
- qualify for the presentation of their own research work (articles, papers).

Predvideni študijski rezultati:

Znanje in razumevanje:

- razumevanje energijske pretvorbe v naravi in njenega izkoriščanja;
- poznavanje tehnologije, naprav in opreme za izrabo obnovljivih virov energije;
- razumevanje poslovanja logističnih in nelogističnih podjetij v moderni in trajnostno naravnani družbi,
- razumevanje pojmov s področja zelene logistike in zelenih oskrbovalnih verig,
- razumevanje pomena ogljičnega odtisa ter načine za njegovo zmanjševanje

Prenesljive/ključne spretnosti in drugi atributi:

- študenti se usposobijo za uporabo teoretičnega znanja v praktičnih primerih
- zmožnost generiranja novih idej
- zmožnost prilagajanja novim razmeram
- sposobnost kritične presoje različnih situacij

Intendedlearningoutcomes:

Knowledge and understanding:

- understanding the energy conversion in nature and its use;
- knowledge of technologies, devices and equipment for renewable energy use
- understanding operations of logistics and “nonlogistics” companies in modern and sustainable society
- understanding key concepts of green logistics and management of sustainable green supply chains,
- Understanding the importance of carbon footprint and ways of reducing

Transferable/Key skills and other attributes:

- The ability to apply theoretical knowledge to professional practice.
- the ability to adapt to the new situations and requirements
- ability to critically evaluate different situations

Metode poučevanja in učenja:	Learningandteachingmethods:
• 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-predavanj (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) • Seminars: 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-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 %) / Weight (in %)	Assessment:
• Raziskovalno delo in seminarska naloga • Delo, naloge in sodelovanje na vajah • Pisni izpit	30 20 50	• Research and course work • Work and cooperation on seminars • Written examination

Reference nosilca / Lecturer's references:

1. KNEZ, Matjaž, JEREB, Borut. Solar power plants - alternative sustainable approach to greener environment: : a case of Slovenia. *Sustainable cities and society*, ISSN 2210-6715. [Spletna izd.], Feb. 2013, vol. 6, str. 27-32, doi:10.1016/j.scs.2012.07.002. [COBISS.SI-ID 512441149]

2. OBRECHT, Matevž, KNEZ, Matjaž. Opportunities for transition to sustainable energy strategy in Slovenia. *Strategic management*, 2014, vol. 19, no. 3, str. 31-37. http://www.ef.uns.ac.rs/sm/archive/SM2014_3.pdf. [COBISS.SI-ID512586557]

3. KNEZ, Matjaž, JEREB, Borut, OBRECHT, Matevž. Factors influencing the purchasing decisions of low emission cars : a study of Slovenia. *Transportation research. Part D, Transport and environment*, ISSN 1361-9209. [Print ed.], July 2014, vol. 30, str. 53-61. http://www.sciencedirect.com/science/article/pii/S1361920914000339, doi: 10.1016/j.trd.2014.05.007. [COBISS.SI-ID 512566077].

4. KNEZ, Matjaž, PREDIN, Andrej, ROSI, Bojan. 'Forklift to grid' - how to synergise the electricity and logistics sectors = 'Viličar na omrežje' - kako sinergijsko povezati električno omrežje z logističnim sektorjem. *Journal of energy technology*, May 2012, vol. 5, iss. 2, str. 13-27. http://www.fe.uni-mb.si/images/stories/jet/e-jet/jet_5-2.pdf. [COBISS.SI-ID 1024091228]

5.KNEZ, Matjaž, BAJOR, Péter, SEME, Sebastijan. Green logistics - a solar warehouse concept. *Logistics & sustainable transport*, ISSN 1854-3332. [Tiskana izd.], 01-03-11, vol. 2, iss. 2, 8 str.http://www.jlst.org/uploads/bajor,%20knez,%20seme_obdelano.pdf. [COBISS.SI-ID 512293181]

6. KNEZ, Matjaž, PREDIN, Andrej, ROSI, Bojan. Poslovni model OVE/F2G V.1 za učinkovitejši energetski menedžment logističnih podjetij. *Proj. mreža Slov.*, apr. 2012, letn. 15, št. 1, str. 10-17, 43, ilustr. [COBISS.SI-ID 1024084572]

7. STERNAD, Marjan, KNEZ, Matjaž, ROSI, Bojan. Improving city transport with the objective to reduce CO[sub]2 emissions. *Transport problems*, 2010, vol. 5, iss. 4, str. 95-103. http://transportproblems.polsl.pl/pl/Archiwum/2010/zeszyt4/2010t5z4_12.pdf. [COBISS.SI-ID 512283197]

8. OBRECHT, Matevž, KNEZ, Matjaž. Policies and measures for promotion of alternative fuelled vehicles in Slovenia. V:

SCHLIEPHAKE, Konrad (ur.), ROSI, Bojan (ur.), STERNAD, Marjan (ur.). *Transport research in a changing world : case studies from Slovenia and Germany = Verkehrsanalysen im wandelnden Raumbezug : Fallstudien aus Slowenien und Deutschland*, (Würzburger geographische Manuskripte, ISSN 0931-8623, 82). Würzburg: Geographisches Institut der Universität Würzburg, 2014, str. 46-56. [COBISS.SI-ID 512600893]