

**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 Academyear	Semester Semester
LOGISTIKA SISTEMOV 2. stopnja		2.	3.
SYSTEM LOGISTICS 2 <sup>nd</sup> 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 / Predavanja / Lectures: SLOVENSKI / SLOVENE  
 Languages: Vaje / Tutorial: SLOVENSKI / SLOVENE

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

<p>Vsebina:</p> <ul style="list-style-type: none"> <li>• Trajnostna logistika ter cilji in ukrepi javne politike</li> <li>• Trajnostna potrošnja in proizvodnja</li> <li>• Obnovljivi viri in njihove prednosti</li> <li>• Zmanjševanje emisij z uporabo različnih alternativnih virov energije</li> <li>• Obnovljivi viri energije v logističnih procesih</li> <li>• Energetsko upravljanje v logistiki</li> <li>• Povečevanje energetske učinkovitosti logističnih procesov</li> <li>• Študije praktičnih primerov</li> </ul>	<p>Content (Syllabusoutline):</p> <ul style="list-style-type: none"> <li>• Sustainable Logistics objectives and public policy</li> <li>• Sustainable consumption and production</li> <li>• Renewable resources and their benefits</li> <li>• Reducing emissions using a variety of alternative energy sources</li> <li>• Renewable energy sources in logistics processes</li> <li>• Energy Management in logistics</li> <li>• Increasing the energy efficiency of logistics processes</li> <li>• Case studies</li> </ul>
---	--

Temeljni literatura in viri / Readings:

E-gradivo predmeta.  
 Knez M., (2013) OBNOVLJIVI VIRI ENERGIJE V LOGISTIČNIH PROCESIH. E-gradivo – v pripravi. Univerza v Mariboru, Fakulteta za logistiko.  
 Muneer, Tariq, Kolhe, Mohan, Doyle Aisling. Electric Vehicles: Prospects and Challenges, 1st Edition, 2017. ISBN: 9780128030400.  
 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.

#### Intended learning outcomes:

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 generate new ideas,
- the ability to adapt to the new situations and requirements,
- ability to critically evaluate different situations

#### Metode poučevanja in učenja:

Predavanja: pri predavanjih študent nadgradi 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 nadgradi 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

#### Learning and teaching methods:

Lectures: Students upgrade 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 upgrade 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

virtualnem elektronskem učnem okolju).

electronic learning environment).

Načini ocenjevanja:	Delež (v %) / Weight (in %)	Assessment:
<ul style="list-style-type: none"><li>Opravljenosti obveznosti e-predavanj in e-vaj so pogoj za pristop k izpitu.</li><li>Raziskovalno delo in seminarska naloga.</li><li>Delo, naloge in sodelovanje na vajah.</li><li>Pisni izpit.</li></ul>	<p>30%</p> <p>20%</p> <p>50%</p>	<ul style="list-style-type: none"><li>Successful completion of e-lectures and e-tutorials is a prerequisite for entering the exam.</li><li>Research and course work.</li><li>Work and cooperation on seminars.</li><li>Written examination.</li></ul>

Reference nosilca / Lecturer's references:

- 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](https://doi.org/10.1016/j.scs.2012.07.002). [COBISS.SI-ID [512441149](#)]
- 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](http://www.ef.uns.ac.rs/sm/archive/SM2014_3.pdf). [COBISS.SI-ID [512586557](#)]
- 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](https://doi.org/10.1016/j.trd.2014.05.007). [COBISS.SI-ID [512566077](#)].
- 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](http://www.fe.uni-mb.si/images/stories/jet/e-jet/jet_5-2.pdf). [COBISS.SI-ID [1024091228](#)]
- 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](http://www.jlst.org/uploads/bajor,%20knez,%20seme_obdelano.pdf). [COBISS.SI-ID [512293181](#)]
- 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](#)]
- STERNAD, Marjan, KNEZ, Matjaž, ROSI, Bojan. Improving city transport with the objective to reduce CO<sub>2</sub> emissions. *Transport problems*, 2010, vol. 5, iss. 4, str. 95-103. [http://transportproblems.polsl.pl/pl/Archiwum/2010/zeszyt4/2010t5z4\\_12.pdf](http://transportproblems.polsl.pl/pl/Archiwum/2010/zeszyt4/2010t5z4_12.pdf). [COBISS.SI-ID [512283197](#)]
- 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](#)]
- GAGO, E. J., MUNEER, Tariq, KNEZ, Matjaž, KÖSTER, Helmut. Natural light controls and guides in buildings : energy saving for electrical lighting, reduction of cooling load. *Renewable & sustainable energy reviews : an international journal*, ISSN 1364-0321. [Print ed.], 2015, vol. 41, str. 1-13. <http://www.sciencedirect.com/science/article/pii/S1364032114006777>, doi: [10.1016/j.rser.2014.08.002](https://doi.org/10.1016/j.rser.2014.08.002). [COBISS.SI-ID [512585021](#)].
- MUNEER, Tariq, MILLIGAN, Ross, SMITH, Ian, DOYLE, Aisling, POZUELO, Miguel, KNEZ, Matjaž. Energetic, environmental and economic performance of electric vehicles : experimental evaluation. *Transportation research. Part D, Transport and environment*, ISSN 1361-9209. [Print ed.], 2015, vol. 35, no. [1], str. 40-61. <http://www.sciencedirect.com/science/article/pii/S1361920914001783>, doi: [10.1016/j.trd.2014.11.015](https://doi.org/10.1016/j.trd.2014.11.015). [COBISS.SI-ID [512609853](#)].
- OBRECHT, Matevž, KNEZ, Matjaž. Carbon and resource savings of different cargo container designs. *Journal of cleaner production*, ISSN 1879-1786. [Online ed.], 1 Jul. 2017, vol. 155, 151-156 str. <https://doi.org/10.1016/j.jclepro.2016.11.076>, doi: [10.1016/j.jclepro.2016.11.076](https://doi.org/10.1016/j.jclepro.2016.11.076). [COBISS.SI-ID [512811837](#)].

Opomba:

Navedene sestavine so obvezna sestavina učnega načrta predmeta kot ga določajo Merila za akreditacijo visokošolskih zavodov in študijskih programov v 7. členu (Ur. l. RS, št. 101/2004).