

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Upravljanje z naravnimi viri
Course title:	Natural Resources Management

Študijski programi in stopnja	Študijska smer	Letnik	Semestri
Geologija, druga stopnja, magistrski	Geookolje in geomateriali (modul)	1. letnik	Letni

Univerzitetna koda predmeta/University course code:

Predavanja	Seminar	Vaje	Klinične vaje	Druge oblike študija	Samostojno delo	ECTS
30	0	30	0	15	75	5

Nosilec predmeta/Lecturer:

Vrsta predmeta/Course type:

Jeziki/Languages:	Predavanja/Lectures:	Angleščina, Slovenščina
	Vaje/Tutorial:	Angleščina, Slovenščina

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

Zaključen prvostopenjski bolonjski študij naravoslovne smeri.	Prerequisites: Completed the first-level of Bologna natural sciences study.
---	---

Vsebina:

<p>Predavanja:</p> <ul style="list-style-type: none"> - Aktualno svetovno stanje in potreba po naravnih in energetskih virih, svetovne razmere. Pomen geologije v luči svetovnih razmer. - Neobnovljivi viri energije (nafta, premog, zemeljski plin, min. surovine). Uporaba, prednosti in slabosti. - Obnovljivi in alternativni viri energije. Geotermalna (toplotne črpalke...), vodna (termalne, mineralne vode ...), nuklearna, sončna, vetrna in ostale energije. Uporaba, prednosti in slabosti. - Vrtanje, metode in namen vrtanja. - Posledice izkoriščanja naravnih virov na okolje, odlagališča, naravne katastrofe. - Ekonomika, zakon ponudbe in povpraševanja, cikli, cene. Svetovne borze (LME, NYMEX ...) in tržne razmere. - Okoljski podatki (slovenski – ARSO, GURS, EIONET, GeoZS ..., tuji), pridobivanje podatkov, zakonski okviri uporabe. - Standardi (ISO, SIST, DIN, ASTM) in njihov pomen na področju geologije (metodologije, standardizacija ...). - Zakonodaja (Uradni list, področna zakonodaja – MOP, MG ..., organizacija in pregled glavnih zakonov, pravilnikov in uredb s področja geologije in okolja). Uvod v evropsko zakonodajo (EUR-Lex), evropske smernice. - Upravljanje z naravnimi viri, trajnostni razvoj. 	<p>Content (Syllabus outline):</p> <p>Lectures:</p> <ul style="list-style-type: none"> - The current world situation and the need for natural and energy resources, the global situation. The importance of geology in the light of global conditions. - Non-renewable energy sources (oil, coal, natural gas, min. Raw materials). Uses, advantages and disadvantages. - Renewable and alternative energy sources. Geothermal (heat pumps ...), aquatic (thermal, mineral waters ...), nuclear, solar, wind and other energies. Uses, advantages and disadvantages. - Drilling, methods and purpose of drilling. - The consequences of exploitation of natural resources on the environment, landfills, natural disasters. - Economics, law of supply and demand, cycles, prices. World Stock Exchange (LME, NYMEX ...) and market conditions. - Environmental data (Slovenian – ARSO, GURS, EIONET, GeoZS ..., foreign), data acquisition, legal framework of use. - Standards (ISO, SIST, DIN, ASTM) and their significance in the field of geology (methodology, standardization ...). - Legislation (Official Gazette, sectoral legislation – MESP, MG ..., organization and review of the main laws, regulations and regulations in the field of geology and
---	--

<p>- Usposobljenost za samostojno delo (seznanitev s potekom strokovnega izpita).</p> <p>- Aktualni problemi in aplikacije.</p> <p>Vaje:</p> <p>- Seminarska naloga.</p> <p>- Računske in računalniške vaje (splet: pregled stanja naravnih in obnovljivih virov, zakonodaja, ekonomika, okoljski podatki ...).</p> <p>Terenske vaje:</p> <p>Ogled izbranega izkoriščanja naravnih virov in okoljske problematike.</p>	<p>environment). Introduction to European legislation (EUR-Lex), European guidelines.</p> <p>- Management of natural resources, sustainable development.</p> <p>- Ability to work independently (familiarization with the course of the professional examination).</p> <p>- Current problems and applications.</p> <p>Exercises:</p> <p>- Seminar work.</p> <p>- Computer and computer work (online: an overview of the state of natural and renewable resources, legislation, economics, environmental data ...).</p> <p>Field work:</p> <p>View of selected exploitation of natural resources and environmental issues.</p>
--	---

Temeljna literatura in viri/Readings:

Izbrana poglavja iz knjig/Selected chapters from books:

Smil, V., 2005, Energy at the crossroads: Global perspectives and Uncertainties. MIT Press, Cambridge, 443 str.

Schlager, N. & Weisblatt, J. (eds), 2006, Alternative Energy, Vol. 1, 2, 3. Thomson Gale. 510 str.

Craig, J. R., Vaughan, D. J., Skinner, B. J., 1996, Resources of the Earth. Origin, Use, and Environmental Impact. Prentice-Hall, Inc, 520 str.

Field, B. C., 2008, Natural Resource Economics. 2nd ed., Waveland Press, Inc, 480 str.

Banks, D., 2008, An Introduction to Thermogeology: Ground Source Heating and Cooling. Wiley-Blackwell, 352 str.

standardi (SIST, ISO, DIN, ASTM), zakonski akti / standard materials (SIST, ISO, DIN, ASTM), legislation acts

periodika, znanstvene in strokovne revije / periodicals, scientific and professional journals

Cilji in kompetence:

CILJI: Osvojiti koncept upravljanja z naravnimi viri ter spoznati njihovo uporabo, prednosti in slabosti posameznih virov ter vpliv njihovega izkoriščanja na okolje (problematika CO₂, segrevanja, ...). Spoznati aktualno vlogo geologije v luči aktualnega svetovnega povpraševanja po obnovljivih in alternativnih energetskih virih. Razumeti osnove ekonomike, trga ter zakona ponudbe in povpraševanja. Obvladati širšo geološko zakonodajo in njeno uporabo. Samostojno reševati probleme s področja naravnih virov.

KOMPETENCE: Sposobnost upravljanja z naravnimi viri, poznavanje zakonodaje in standardov, ekonomike in uporabe različnih naravnih virov ter predvidevanje okoljskih posledic pri njihovem izkoriščanju.

Objectives and competences:

OBJECTIVES: To conquer the concept of natural resource management and to learn about their use, the advantages and disadvantages of individual sources and the impact of their exploitation on the environment (CO₂, heating, ...). To learn about the current role of geology in the light of the current global demand for renewable and alternative energy sources. Understand the basics of economics, the market and the law of supply and demand. To master wider geological legislation and its application. Independently solve problems in the field of natural resources.

COMPETENCES: Ability to manage natural resources, knowledge of legislation and standards, economics and the use of various natural resources and anticipate the environmental consequences of their exploitation.

Predvideni študijski rezultati:

Študentje poznajo koncept upravljanja z naravnimi viri. Poznajo njihovo uporabo, razumejo prednosti in slabosti posameznih virov. Ukvarjajo se z aktualno tematiko vpliva izkoriščanja teh virov na okolje. Razumejo aktualno vlogo geologije v luči aktualnega svetovnega povpraševanja po obnovljivih in alternativnih energetskih virih. Obvladajo osnove ekonomike ter širše geološke zakonodaje.

Intended learning outcomes:

Students know the concept of managing natural resources. They know how to use them, understand the strengths and weaknesses of individual resources. They deal with the current theme of the impact of exploiting these resources on the environment. They understand the current role of geology in the light of the current global demand for renewable and alternative energy sources. They master the basics of economics and wider geological legislation.

Metode poučevanja in učenja:

Learning and teaching methods:

Predavanja, seminarske in laboratorijske vaje, terensko delo.	Lectures, seminar and laboratory work, fieldwork.
---	---

Načini ocenjevanja:	Delež/Weight	Assessment:
Pisni izpit	50,00 %	Theoretical exam
Praktični del	30,00 %	Practical exam
Seminar	20,00 %	Seminar work
Ocenjevalna lestvica: 51-60% (6); 61-70% (7); 71-80% (8); 81-90% (9); 91-100% (10) ob upoštevanju Statuta UL in fakultetnih pravil.		Evaluation scale: 51-60% (6); 61-70% (7); 71-80% (8); 81-90% (9); 91-100% (10) having regard to the Statute of UL and faculty rules.

Reference nosilca/Lecturer's references:

ROGAN ŠMUC, Nastja, DOLENEC, Matej, KRAMAR, Sabina, MLADENOVIČ, Ana, Geochemical equilibrium and processes in seawater. Heavy metal signature and environmental assessment of nearshore sediments: Port of Koper (Northern Adriatic Sea). *Geosciences*, ISSN 2076-3263, 2018, vol. 8, iss. 11, 18 str., ilustr., doi: [10.3390/geosciences8110398](https://doi.org/10.3390/geosciences8110398)

SERAFIMOVSKI, Todor, DOLENEC, Tadej, TASEV, Goran, ROGAN, Nastja, DOLENEC, Matej. The composition of major minerals from the Buchim porphyry copper deposit, Republic of Macedonia. *Geologica Macedonica*, ISSN 0352-1206, 2008, vol. 22, str. 17-26.

KRAMAR, Sabina, LUX, Judita, PRISTACZ, Helmut, MIRTič, Breda, ROGAN ŠMUC, Nastja. Mineralogical and geochemical characterization of Roman slag from the archaeological site near Mošnjah (Slovenia) = Mineraloška in geokemična karakterizacija rimske žlindre z arheološkega najdišča pri Mošnjah (Slovenija). *Materiali in tehnologije*, ISSN 1580-2949. [Tiskana izd.], 2015, letn. 49, št. 3, str. 343-348, ilustr. <http://mit.imt.si/Revija/izvodi/mit153/kramar.pdf>

4.DOLENEC, Tadej, SERAFIMOVSKI, Todor, TASEV, Goran, DOBNIKAR, Meta, DOLENEC, Matej, ROGAN, Nastja. Major and trace elements in paddy soil contaminated by Pb-ZN mining: a case study of Kočani field, Macedonia. *Environmental geochemistry and health*, ISSN 0269-4042, 2007, vol. 29, no. 1, str. 21-32.