

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Inženirsko geološko obravnavanje prostora
Course title:	Engineering Geology for Geotechnical Structures

Študijski programi in stopnja	Študijska smer	Letnik	Semestri
Geologija, druga stopnja, magistrski	Aplikativna geologija (modul)	1. letnik, 2. letnik	Zimski

Univerzitetna koda predmeta/University course code: 725

Predavanja	Seminar	Vaje	Klinične vaje	Druge oblike študija	Samostojno delo	ECTS
30	0	45	0	0	75	5

Nosilec predmeta/Lecturer: Karmen Fifer Bizjak

Vrsta predmeta/Course type: Izbirni / Elective

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

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

Znanje osnov geologije, geologije okolja, hidrologije, hidrogeologije, inženirske geologije in geofizike.	Prerequisites: Knowledge of Basics of Geology, Hydrology, Hydrogeology, Engineering Geology and Geophysics.
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Vsebina:

<p>Posegi v prostor se izvajajo z različnimi namen in z uporabo različnih tehnik in tehnologij, ki v veliki meri določajo kakšni bodo vplivi le teh. Poznavanje in razumevanje namenov in tehničnih vidikov posameznih posegov v prostor, je ključno pri razumevanju odziva geološkega prostora in pri podajanju inženirsko geoloških pogojev pod katerimi se ti ukrepi lahko izvajajo. Predmet predstavlja sintezo vseh pridobljenih geoloških znanj in njihovo uporabo pri podajanju pogojev za varno in ekonomično poseganje v prostor s stališča inženirske geologije.</p> <p>Pri predmetu bo večji poudarek na praktičnih primerih, ki so povzeti iz različnih projektnih dokumentacij in na dejanskih primerih iz prakse.</p>	<p>Content (Syllabus outline):</p> <p>Spatial interventions are accomplished for various purposes and by using different techniques and technologies, which largely determine the impacts of these. Knowing and understanding of the purposes and technical aspects of individual interventions into space is crucial in understanding of the response of the geological area and in giving the engineering geological conditions under which these measures can be implemented. The subject represents the synthesis of all the acquired geological knowledge and its application in providing conditions for safe and economical interventions into space from the engineering geology point of view.</p> <p>In the course, the emphasis will be placed on practical examples, which are summarized from various project designs and actual cases from practice.</p>
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Temeljna literatura in viri/Readings:

<p>L.Gonzalez de VALLEJO, M. Ferrer, 2011. Geological Engineering. Taylor & Francis Group, London, UK. C.W.DUNCAN, 2004. Rock Slope Engineering and Civil Mining. Spon Press, London. E.HOEK, E.T.BROWN, 1996. Underground Excavation in Rock. E& FN Spon, London. J.P.HARRISON, J.A.HUDSON, 2000. Engineering Rock Mechanics. An Introduction to the principles. Pergamon, Amsterdam G.B.CROSTA, P.FRATTINI, 2007. Landslides: from Mapping to Loss and Risk estimation. IUSS Press, Pavia, Italy. D.E.DANIEL, 1993. Geotechnical Practice for Waste Disposal. Chapman&Hall, London.</p>

<p>Cilji in kompetence:</p> <p>CILJI: Razumevanje tehničnih in tehnoloških ukrepov, ki se uporabljajo pri posegih v geološki prostor. Podajanje inženirsko geološke ocene pri različnih posegih v prostor (prometnice, objekti, pregrade in akumulacije, predori, odlagališča odpadkov, hidroelektrarne). Razumevanje interakcij med geološkim prostorom in predvidenimi ter izvedenimi posegi.</p> <p>KOMPETENCE: Poznavanje ustreznih ukrepov s katerimi so mogoči varni in ekonomični posegi v geološki prostor.</p>	<p>Objectives and competences:</p> <p>OBJECTIVES: Understanding of technical and technological measures that are used in interventions in the geological area. Providing engineering geological assessments for various interventions in the space (roads, buildings, dams and reservoirs, tunnels, landfills, hydroelectric power stations). Understanding of interactions between the geological space and the planned and performed interventions.</p> <p>COMPETENCES: Knowing of appropriate for safe and economical interventions into the geological area.</p>
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<p>Predvideni študijski rezultati:</p> <p>Razviti sposobnost podajanja inženirskih ocen in mnenj na osnovi katerih je mogoče varno in ekonomično posegati v prostor, na področju gradbeništva, varovanja okolja, rudarstva. Pridobiti osnovna razumevanja, ki jih inženirski geolog potrebuje v praksi.</p>	<p>Intended learning outcomes:</p> <p>Development of the ability to provide engineering assessments and opinions on the basis of which it is possible to safely and economically intervene in the space, in the field of construction, environmental protection, mining. Acquiring the basic understandings, which the engineering geologist needs in practice.</p>
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<p>Metode poučevanja in učenja:</p> <p>Predavanja z uporabo prezentacij. Seminarske naloge študentov s predstavitvami. Vaje potekajo kot vodene seminarske vaje. Terenske vaje.</p>	<p>Learning and teaching methods:</p> <p>Lectures by using presentations. Student seminar papers with presentations. Rehearsals will take place as tutorials. Tutorials in the field.</p>
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Načini ocenjevanja:	Delež/Weight	Assessment:
Pisni izpit: teoretična vprašanja	45,00 %	Written exam: theoretical questions
Seminarji: predstavitev in seminar	50,00 %	Seminar works: presentation and seminar
Prisotnost na predavanjih in vajah	5,00 %	The presence at lectures and tutorials
Pogoji za pristop k izpitu: vsaj 75% prisotnost na predavanjih in 100 % prisotnost na vajah, pozitivno opravljene vaje in seminarji (predstavitev, naloga) in seminarske vaje. Ocenjevalna lestvica: 51-60% (6); 61-70% (7); 71-80% (8); 81-90% (9); 91-100% (10) ob upoštevanju Statuta UL in fakultetnih pravil.		Conditions for the exam: at least 75% attendance at lectures and 100 % attendance at tutorials, successfully done tutorials and seminars (presentation and paper) and tutorials. Grading 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.

<p>Reference nosilca/Lecturer's references:</p> <p>FIFER BIZJAK, Karmen, KNEZ, Friderik, LENART, Stanislav, SLANC, Katja. Life-cycle assessment and repair of the railway transition zones of an existing bridge using geocomposite materials. Structure and infrastructure engineering, ISSN 1573-2479, 2017, vol. 13, iss. 3, str. 331-344.</p> <p>FIFER BIZJAK, Karmen, DAWSON, Andrew, HOFF, Inge, MAKKONEN, Lasse, YLHÄISI, Jussi, CARRERA, Alessandra. The impact of climate change on the European road network. Proceedings of the Institution of Civil Engineers - Transport, ISSN 0965-092X. [Print ed.], Mar. 2014, vol. 167, issue 5, str. 281-295.</p> <p>GÁSPÁR, László, STRYK, Josef, MARCHTRENKER, Stefan, DE BEL, Régis, GERSEN, Finn, SEDRAN, Thierry, FIFER BIZJAK, Karmen, HELLMAN, Fredrik, HENBERG, Helen, MCNALLY, Ciaran, ARM, Maria, BENCZE, Zsolt. Recycling reclaimed road material in hydraulically bound layers. Proceedings of the Institution of Civil Engineers - Transport, ISSN 0965-092X. [Print ed.], Nov. 2014, vol. 168, issue 3, str. 276-28.</p>
