

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Sedimentna petrologija
Course title:	Sedimentary Petrology

Študijski programi in stopnja	Študijska smer	Letnik	Semestri
Geologija, prva stopnja, univerzitetni	Ni členitve (študijski program)	2. letnik	Zimski

Univerzitetna koda predmeta/University course code:

Predavanja	Seminar	Vaje	Klinične vaje	Druge oblike študija	Samostojno delo	ECTS
45	0	30	0	30	105	7

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:

Pogoji za vključitev v delo je vpis v 2. letnik študija geologije ter obvezno opravljeni izpiti iz Osnov geologije, Paleontologije, Kristalografije in Mineralogije za pristop k izpitu.

Prerequisites:

Condition for inclusion in the work is inscription to the 2nd academic year, and passed exams in Introduction to Geology, Paleontology, Crystallography and Mineralogy to take an exam.

Vsebina:

Uvod v sedimentno petrologijo
Izvor, klasifikacija in nastopanje sedimentnih kamnin
Struktura sedimentnih kamnin
Tekstura sedimentnih kamnin
Siliciklastične sedimentne kamnine:
- sestava in klasifikacija: konglomerati, peščenjaki, muljevci in glinavci
- diagenza in poroznost
- provenienca siliciklastičnih sedimentnih kamnin
Karbonatne sedimentne kamnine
- sestava in klasifikacija: apneneci, dolomiti
- diagenza apnencev
- dolomitizacija in dolomiti
Karbonatni klastiti
Druge kemične/biokemične sedimentne kamnine in organske sedimentne kamnine: evaporiti, roženci, železove sedimentne kamnine, fosforiti in organske sedimentne kamnine
Vulkanoklastične kamnine: nastanek, klasifikacija in diagenza

Content (Syllabus outline):

Introduction to sedimentary petrology
Origin, classification, and occurrence of sedimentary rocks
Sedimentary texture
Sedimentary structure
Siliciclastic sedimentary rocks:
- composition and classification: conglomerates, sandstones, mudstones and shales
- diagenesis and porosity
- provenance of siliciclastic sedimentary rocks
Carbonate sedimentary rocks
- composition and classification: limestones, dolomites
- diagenesis of limestones
- dolomitization and dolomites
Carbonate clastic rocks
Other chemical/biochemical sedimentary rocks and carbonaceous sedimentary rocks: evaporites, cherts, iron-rich sedimentary rocks, phosphorites and carbonaceous sedimentary rocks
Volcaniclastic rocks: origin, classification and diagenesis

Temeljna literatura in viri/Readings:

BOGGS, S. Jr., 2009: Petrology of Sedimentary Rocks. Cambridge Univ. Press, Cambridge, 600 p.
 LEYRIT, H. & MONTENAT, C. (Eds.), 2000: Volcaniclastic Rocks, from Magmas to Sediments. Gordon and Breach Science Publishers, Amsterdam, 299 p.
 NICHOLS, G., 1999: Sedimentology and Stratigraphy. Blackwell Science, Oxford, 355 p.
 TIŠLIJAR, J., 2001: Sedimentologija karbonata i evaporita, Institut za geološka istraživanja, Zagreb, 375 p.
 TUCKER, M., 2011: Sedimentary Rocks in the Field, 4th ed., Wiley-Blackwell, UK, 275 p.
 TUCKER, M., 2001: Sedimentary Petrology. 3rd ed., Blackwell Science, Oxford, 262 p.
 TUCKER, M. (Ed.), 1988: Techniques in sedimentology. Blackwell Scientific Publications, Oxford, 394 p.

Atlasi za mikroskopijo / Atlas for microscopy:

ADAMS, A.E., MACKENZIE, W.S. & GUILFORD, C., 1994: Atlas of sedimentary rocks under the microscope. John Wiley & Sons, New York, 104 p.

ADAMS, A.E. & MACKENZIE, W.S., 2001: A Colour Atlas of Carbonate Sediments and Rocks Under the Microscope. Manson Publishing, London, 180 p.

SCHOLLE, P.A., 1978: A Color Illustrated Guide To Carbonate Rock Constituents, Textures, Cements, and Porosities. The American Association of Petroleum Geologists, Memoir 27, U.S.A., 241 p.

SCHOLLE, P.A., 1979: A Color Illustrated Guide To Constituents, Textures, Cements, and Porosities of sandstones and Associated Rocks. The American Association of Petroleum Geologists, Memoir 28, U.S.A., 201 p.

Cilji in kompetence:

CILJI: Spoznavanje procesov nastanka, sestave ter strukturnih in teksturnih značilnosti vseh sedimentnih kamnin.

KOMPETENCE: Študent zna prepoznati vse vrste sedimentnih kamnin. Usposobljen je za samostojno terensko delo, zna na izdanku in vrtini popisati vse lastnosti sedimentnih kamnin. Na podlagi terenskih in laboratorijskih raziskav je sposoben identificirati in interpretirati sedimentacijske in diagenetske procese nastanka sedimentnih kamnin.

Objectives and competences:

OBJECTIVES: Students get familiar with the processes of origin, occurrence, composition, and structural and textural characteristics of sedimentary rocks.

COMPETENCES: Students can recognize all kinds of sedimentary rock. Students are qualified for independent fieldwork, and knows how to profile and list all necessary properties of sedimentary rocks on an outcrop or borehole. On the basis of field and laboratory research students are able to identify and interpret sedimentary and diagenetic processes of sedimentary rocks.

Predvideni študijski rezultati:

Študent spozna, osvoji in razume osnovno sedimentološko terminologijo in metode proučevanja sedimentov in sedimentnih kamnin, prepozna vse vrste sedimentnih kamnin ter pridobi osnove makroskopske in mikroskopske analize sedimentnih kamnin za interpretacijo sedimentacijskih in postsedimentacijskih procesov.

Intended learning outcomes:

Students learn, understand and conquer basic sedimentological terminology and methods for studying sediments and sedimentary rocks. Students are able to identify all types of sedimentary rocks, and learn the basics of macroscopic and microscopic analysis of sedimentary rocks necessary for the interpretation of sedimentary and postsedimentary processes.

Metode poučevanja in učenja:

Predavanja, vaje v mikroskopirnici in predavalnici (mikroskopiranje preparatov najbolj tipičnih sedimentnih kamnin in njihovo makroskopsko prepoznavanje), 4 dni terenskega dela. V okviru terenskih vaj študenti izdajo terensko poročilo.

Learning and teaching methods:

Lectures, practical work in the microscope laboratory and classroom (microscopy of most typical sedimentary rocks in thinsections), 4 days of fieldwork. Within the fieldwork students will prepare fieldwork report.

Načini ocenjevanja:

Načini ocenjevanja:	Delež/Weight	Assessment:
Pisni izpit ali oddane domače naloge	60,00 %	Written exam or given homework
Ustno preverjanje mikroskopskega in makroskopskega prepoznavanja kamnin	25,00 %	Oral exam of microscopic and macroscopic identification of rocks
Poročilo terenskega dela	10,00 %	Fieldwork report
Aktivno sodelovanje pri predavanjih	5,00 %	Active participation in lectures

Reference nosilca/Lecturer's references:

VRABEC, Mirijam, PREISINGER, Davo. Kristali halita iz slovenskih solin in o evaporitih na splošno. V: JERŠEK, Miha (ur.).

Mineralna bogastva Slovenije, (Scopolia, Supplementum, 3). Ljubljana: Prirodoslovni muzej Slovenije: = Slovenian Museum of Natural History, 2006, 2006, str. 448-453.

JANAK, Marian, CORNELL, David, FROITZHEIM, Nikolaus, HOOG, J.C.M. De, BROSKA, Igor, VRABEC, Mirijam, HURAI, Vratislav. Eclogite-hosting metapelites from the Pohorje Mountains (Eastern Alps): P-T evolution, zircon geochronology and tectonic implications. *European journal of mineralogy*, 2009, vol. 21, no. 6, str. 1191-1212, doi: 10.1127/0935-1221/2009/0021-1966.

ROGAN ŠMUC, Nastja, SERAFIMOVSKI, Todor, DOLENEC, Tadej, DOLENEC, Matej, VRHOVNIK, Petra, VRABEC, Mirijam, JAČIMOVIĆ, Radojko, LOGAR ZORN, Vesna, KOMAR, Darja. Mineralogical and geochemical study of Lake Dojran sediments (Republic of Macedonia). *Journal of geochemical exploration*, ISSN 0375-6742. [Print ed.], 2015, vol. 150, str. 73-83, doi: 10.1016/j.gexplo.2014.12.019.

ŠMUC, Andrej, DOLENEC, Matej, KIKELJ, Martina L., LUX, Judita, PFLAUM, Miran, ŠEME, Blaž, ŽUPANEK, Bernarda, GALE, Luka, KRAMAR, Sabina. Variety of black and white limestone tesserae used in ancient mosaics in Slovenia. *Archaeometry*, ISSN 0003-813X. [Tiskana izd.], 2017, vol. 59, iss. 2, str. 205-221, doi: 10.1111/arc.12250.

MURI, Gregor, ČERMELJ, Branko, JAČIMOVIĆ, Radojko, RAVNIKAR, Tina, ŠMUC, Andrej, TURŠIČ, Janja, VREČA, Polona. Factors that contributed to recent eutrophication of two Slovenian mountain lakes. *Journal of paleolimnology*, ISSN 0921-2728, str. 1-16, doi: 10.1007/s10933-017-9996-5.

IVANČIČ, Kristina, TRAJANOVA, Mirka, SKABERNE, Dragomir, ŠMUC, Andrej. Provenance of the Miocene Slovenj Gradec Basin sedimentary fill, Western Central Paratethys. *Sedimentary geology*, ISSN 0037-0738. [Print ed.], 2017, str. 1-54, doi: 10.1016/j.sedgeo.2017.11.002.