

UČNI NAČRT PREDMETA/COURSE SYLLABUS

Predmet:	Sedimentologija karbonatov in klastitov
Course title:	Sedimentology of Carbonates and Clastic Sedimentary Rocks

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

Univerzitetna koda predmeta/University course code:

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

Osnovno znanje geologije, sedimentologije, geokemije, geomorfologije strukturne geologije in tektonike pridobljeno na dodiplomskem študiju.
Obveznosti študenta: Študent mora redno obiskovati vaje, oddati vse zahtevane samostojne naloge ter opraviti preizkus teoretičnega in praktičnega znanja.

Prerequisites:

Basic knowledge of geology, sedimentology, geochemistry, geomorphology, structural geology and tectonics acquired at the undergraduate level
Methods: The student must regularly attend work, submit all required separate tasks and pass the test of theoretical and practical knowledge.

Vsebina:

Karbonatni sedimenti in kamnine: osnove
Geološko ozadje sedimentacije karbonatov
Moderna karbonatna okolja
Nekdanja karbonatna okolja
Mineralogija in kemija karbonatov
Diageneza karbonatov
Dolomitizacija in dolomitizacijski modeli
Karbonati v sedimentnih zapisih
Klastični sedimenti in kamnine: osnove
Geološko ozadje sedimentacije klastitov
Moderna klastična okolja
Nekdanja klastična okolja
Mineralogija in kemija klastitov
Diageneza klastitov
Klastiti v sedimentnih zapisih

Content (Syllabus outline):

Carbonates: the basics
Geological background sedimentation of carbonates
Modern carbonate environment
Former carbonate environment
Mineralogy and chemistry of carbonates
Diagenesis of carbonates
Dolomitization
Carbonate sedimentary records
Clastic sediments and rocks: the basics
Geological background of clastics sedimentation
Modern clastic environment
Former clastic environment
Mineralogy and chemistry of clastics
Diagenesis
Clastic rocks in clastic sedimentary records

Temeljna literatura in viri/Readings:

FLÜGEL E., 2004, Microfacies of carbonate rocks, Analysis, Interpretation and Application, Springer, 976pp.
LEGGER, J.K. 2005, Marine Clastic Sedimentology, Concepts and Case Studies, Springer, 304pp.
McLAINE, M., 1995, Sedimentology, Oxford University Press, 448 pp.
TUCKER, M.E. & WRIGHT, P., 1991, Carbonate sedimentology, Blackwell Science, 496 pp.

Cilji in kompetence:

CILJI: Cilj predmeta je študente poglobljeno seznaniti z različnimi karbonatnimi in klastičnimi sedimenti. Predmet pa je predvsem usmerjen v spoznavanje in razumevanje procesov, ki delujejo pred, med in po sedimentaciji in povzročijo nastanek karbonatnih in klastičnih kamnin. Procesi so odvisni od množine vplivnih faktorjev, ki jih bodo slušatelji spoznali.

KOMPETENCE: Sedimentne kamnine predstavljajo najpogostejše kamnine, ki jih najdemo na zemljinem površju, med njimi pa so daleč najpogostejši prav karbonati in klastiti. Predmet se ukvarja z poznavanjem sestave in geneze karbonatnih in klastičnih sedimentov in sedimentnih kamnin in izdelavo modelov sedimentacije. Omenjene kamnine so izredno pestre in so nastajale v najrazličnejših okoljih prav tako pa na njihov nastanek vpliva tako tektonika, fizikalno-kemični pogoji, ekološki pogoji, astronomski faktorji, klima in drugi. Sedimentacija v določenem okolju se namreč pojavi kot posledica interakcije med dotokom sedimenta, njegove predelave in modificiranje preko fizikalnih, kemičnih in bioloških procesov ter akomodacijskega prostora.

Objectives and competences:

OBJECTIVES: The aim of the course is an in-depth acquaintance with different carbonate and clastic sediments. Object is primarily focused on learning about and understanding of the processes that run before, during and after the sedimentation and lead to the formation of carbonate and clastic rocks. The processes are dependent on the amount of influence factors which students will learn.

COMPETENCES: Sedimentary rocks represent the most common rocks, which can be found on the Earth's surface. The course deals with the knowledge of the structure and genesis of carbonate and clastic sediments and sedimentary rocks and making models of sedimentation. These rocks are extremely diverse and are made in a variety of settings as well as their sedimentation is affected by tectonic, physico-chemical conditions, ecological conditions, astronomical factors, and others. Sedimentation in a particular environment does occur as a result of interaction between the sediment, its reworking through physical, chemical and biological processes and accommodation space.

Predvideni študijski rezultati:

Študent spozna različna karbonatne in klastične sedimente ter sedimentne kamnine in razume procese, ki so botrovali njihovemu nastanku. Na podlagi pridobljenega znanja zna interpretirati okolje nastanka, dinamiko sedimentacije. Spremembe v sedimentaciji zna povezati z regionalnimi in lokalnimi geološkimi procesi in stanji.

Intended learning outcomes:

Student learns different carbonate and clastic sediments and sedimentary rocks and understand processes that leads to their deposition. Based on the acquired knowledge she-he can interpret environmental occurrence, the dynamics of sedimentation. It is able to link changes in sedimentation with regional and local geological processes and conditions.

Metode poučevanja in učenja:

Predavanja z uporabo prezentacij.
Vaje potekajo kot vodene seminarske laboratorijske vaje.

Learning and teaching methods:

Lectures using presentations.
Tutorials take place as guided seminar lab work.

Načini ocenjevanja:**Delež/Weight****Assessment:**

Pisni izpit	100,00 %	Written exam
Pisni izpit: Za pozitivno oceno mora biti pravilno rešenih najmanj 50% teoretičnih vprašanj.		Written exam: The positive assessment must be properly resolved, at least 50% of the theoretical issues.

Reference nosilca/Lecturer's references:

ŠMUC, Andrej, ROŽIČ, Boštjan. The Jurassic Prehodavci Formation of the Julian Alps: easternmost outcrops of Rosso Ammonitico in the Southern Alps (NW Slovenia). Swiss journal of geosciences, ISSN 1661-8726, 2010, vol.103, issue 2, str. 241-255, doi:10.1007/s00015-010-0015-3.

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.], 2016, 17 str., doi: 10.1111/arc.12250.

ŠMUC, Andrej. Jurassic and cretaceous stratigraphy and sedimentary evolution of the Julian Alps, NW Slovenia. Ljubljana: Založba ZRC, ZRC SAZU, 2005. 98 str.