

UČNI NAČRT PREDMETA/COURSE SYLLABUS

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| Predmet: | Analiza sedimentacijskih okolij |
| Course title: | Sedimentary Environments |

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| Študijski programi in stopnja | Študijska smer | Letnik | Semestri |
| Geologija, druga stopnja, magistrski | Ni členitve (študijski program) | 1. letnik | Zimski |

Univerzitetna koda predmeta/University course code:

| Predavanja | Seminar | Vaje | Klinične vaje | Druge oblike študija | Samostojno delo | ECTS |
|------------|---------|------|---------------|----------------------|-----------------|------|
| 60 | 30 | 30 | 0 | 30 | 150 | 10 |

Nosilec predmeta/Lecturer:

Vrsta predmeta/Course type:

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

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

Osnovno znanje geologije, sedimentologije, strukturne geologije in tektonike in stratigrafije 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, structural geology and tectonics and stratigraphy acquired at the undergraduate level.
The student must regularly attend exercises and submit all required tasks and pass the test of theoretical and practical knowledge.

Vsebina:

Sedimentna okolja; definicije, klasifikacija in osnovne značilnosti
Vplivni faktorji na sedimentno zaporedje
Mehanizmi nastanka različnih sedimentnih okolij
Aluvialni sistemi
Jezera
Puščavska sedimentacijska okolja
Klastične obale
Plitva klastična morja
Morski evaporiti
Plitvodna karbonatna okolja
Globljemorsko okolje
Glacialna okolja
Vulkanska okolja
Izdelava seminarske naloge

Content (Syllabus outline):

Sedimentary environment; definitions, classification and basic characteristics
Influencing factors on the sedimentary sequence
Mechanisms of origin of different sedimentary environments
Alluvial Systems
Lakes
Deserta
Clastic coasts
Shallow marine clastic seas
Marine evaporite environments
Shallow water carbonate environments
Deepwater environment
Glacial environments
Volcanic environment
Seminar work

Temeljna literatura in viri/Readings:

NICHOLS, G., 2009, Sedimentology and Stratigraphy, Wiley-Blackwell, 419.
READING, H.G., 1996, Sedimentary Environments, Processes, Facies and Stratigraphy, Blackwell Science, 688.
EINSELE, G., 1991, Sedimentary Basins, Evolution, Facies and Sediment Budget, Springer, 628.

PERRY, C., TAYLOR, K., 2007, Environmental Sedimentology, Blackwell, 441.
 BENN, D.I, EVANS, D.J.A., 2010, Glaciers and Glaciation, Routledge, 802.
 CAS, R.A.F., WRIGHT, J.V., 1995, Volcanic successions, Modern and Ancient. Chapman & Hall, 528.

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| <p>Cilji in kompetence:</p> <p>CILJI: Cilj predmeta je študente seznaniti z različnimi sedimentnimi okolji, procesi, ki se v njih odvijajo ter z dinamiko nastajanja sedimentov. Cilj predmeta je tako spoznavanje in interpretacija različnih sedimentnih zaporedij, značilnih za posamezna okolja ter spoznavanje njihove odvisnosti od lokalnih in globalnih tektonskih procesov ter klimatskih in bioloških sprememb.</p> <p>KOMPETENCE: Sedimentne kamnine predstavljajo najpogostejše kamine, ki jih najdemo na zemljinem površju. V Sloveniji sedimente kamnine pokrivajo 90% površine, tako da se z njimi v svoji poklicni karieri sreča vsak geolog. Nekdanja sedimentacijska okolja, v katerih so omenjene kamine nastajale, rekonstruiramo najprej preko interpretacije procesa ali procesov, ki so povzročili nastanek določenega tipa sedimentov ter v naslednjem koraku preko interpretacije okolja v katerem so ti procesi potekali. Sedimentacijska okolja v katerih nastajajo kamine so izredno raznolika prav tako pa so raznoliki tudi faktorji, ki vplivajo na sedimentacijo. Sedimentacija v določenem okolju se namreč pojavi kot posledica interakcije med dotokom sedimenta, njegove predelave in modificiranje preko fizikalnih, kemilnih in bioloških procesov ter akomodacijskega prostora. Poznavanje recentnih in nekdanjih sedimentnih okolij, procesov, ki v njih delujejo ter sedimentnih zaporedij, ki so značilna za posamezna okolja je tako bistveno za vse geološke stroke.</p> | <p>Objectives and competences:</p> <p>OBJECTIVES: The aim of the course is to acquaint students with different sedimentary environments, processes that take place in them, and the dynamics of sedimentation. The aim of the course is understanding and interpretation of various sedimentary sequences specific to each environment and recognition of local and global tectonic processes and climatic and biological changes that took place in them.</p> <p>COMPETENCES: Sedimentary rocks represent the most common rocks which can be found on the Earth's surface. In Slovenia sediment rocks cover 90% of the surface. Former sedimentary environments in which these rocks were formed are reconstructed first in the view of processes that have led to the deposition of sediments, and in the next step over the interpretation of the environment in which these processes take place. Sedimentary environments are very diverse as well as factors affecting the sedimentation. Sedimentation in a particular environment does occur as a result of interaction between the incoming sediment, its processing and modification via physical, chemical and biological processes and accommodation space. Knowledge of recent and past sedimentary environments, processes that are active in them, and of sedimentary sequences, which are specific to each environment is essential for all geological profession.</p> |
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| <p>Predvideni študijski rezultati:</p> <p>Študent spozna različna sedimentacijska okolja in razume procese, ki delujejo v njih. Na podlagi sedimentnih zaporedij zna interpretirati okolja nastanka in dinamiko zapolnjevanja. S pomočjo poznavanja vzrokov sprememb v sedimentaciji razume spremembe regionalnih in lokalnih geoloških procesov in stanj. Zna izbrati in uporabiti ustrezne analitske tehnike ter ustrezno obdelavo podatkov.</p> | <p>Intended learning outcomes:</p> <p>Student learns different sedimentary environments and understand the processes operating in them. Based on the sedimentary sequences he or she can interpret environment origin and dynamics of sedimentation. With knowledge of the causes of changes in the sedimentation she or he understand changes in the regional and local geological processes. She can select and use appropriate analytical techniques and appropriate data processing.</p> |
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| <p>Metode poučevanja in učenja:</p> <p>Predavanja z uporabo prezentacij. Izdelava seminarja na izbrano tematiko in njegova javna predstavitev Vaje potekajo kot vodene kabinetne vaje (30 ur) Terenske vaje obsegajo 3 dni dela na terenu.</p> | <p>Learning and teaching methods:</p> <p>Lectures by using the presentations. Creating a seminar on a selected topic and its public presentation Exercises will take place as a cabinet-guided exercises (30 hours) Field activities include three days of field work.</p> |
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| Načini ocenjevanja: | Delež/Weight | Assessment: |
|---|--------------|--|
| Izdelava in predstavitev seminarja | 30,00 % | Preparation and presentation of seminar |
| Pisni izpit | 70,00 % | Written exam |
| Za pozitivno oceno mora biti pravilno rešenih najmanj 50% teoretičnih vprašanj. | | 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.

MURI, Gregor, ČERMELJ, Branko, JAČIMOVIČ, Radojko, SKABERNE, Dragomir, ŠMUC, Andrej, BURNIK ŠTURM, Martina, TURŠIČ, Janja, VREČA, Polona. Consequences of anthropogenic activity for two remote alpine lakes in NW Slovenia as tracked by sediment geochemistry. *Journal of paleolimnology*, ISSN 0921-2728, 2013, vol. 50, no. 4, str. 457-470, doi: 10.1007/s10933-013-9738-2.

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