



Univerza v Mariboru

Fakulteta za naravoslovje  
in matematiko

**UČNI NAČRT PREDMETA / COURSE SYLLABUS**

<b>Predmet:</b>	<b>Geologija s paleontologijo</b>
<b>Course title:</b>	<b>Geology with Paleontology</b>

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Univerzitetni študijski program Ekologija z naravovarstvom, 1. stopnja		2.; 2nd	3.; 3rd
Undergraduate university programme Ecology with Nature Conservation, 1st degree			

**Vrsta predmeta / Course type** Obvezni / Obligatory

**Univerzitetna koda predmeta / University course code:**

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Lab. vaje Laboratory work	Terenske vaje Field work	Samost. delo Individ. work	ECTS
30			15		75	4

**Nosilec predmeta / Lecturer:** Bojana Dolinar

**Jeziki / Predavanja / Lectures:** slovenski / slovene  
**Languages: Vaje / Tutorial:** slovenski / slovene

**Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:** Naravoslovna znanja na nivoju splošne mature. **Prerequisites:** Science knowledge at the level of the general baccalaureate.

**Vsebina:**

- Zgradba Zemlje, termodinamika
- Mineralogija: vrste in lastnosti mineralov
- Petrologija: nastanek, vrste in klasifikacija kamnin in zemljin, geološka zgradba in mineralne surovine v Sloveniji
- Geotektonika: teorija tektonike plošč
- Geodinamika:

**Content (Syllabus outline):**

- Earth constitution, thermodynamics
- Mineralogy: types and properties of minerals
- Petrology: origin, types and classification of rocks and soils, geological structure and mineral resources in Slovenia
- Geotectonics: the theory of plate tectonics
- Geodynamics:

-endodinamika: plutonizem, vulkanizem, seizmologija  
 -eksodinamika: preperevanje, erozija, abrazija, denudacija, kraški pojavi, plazovi

- Hidrogeologija
- Stratigrafija: starost kamnin
- Paleontologija: nastanek življenja na Zemlji, teorija evolucije, metode fosilizacije, zgodovinski pregled pestrosti življenja in masovna izumiranja.

-Endodynamics: plutonism, volcanism, seismology  
 -Exodynamic: weathering, erosion, abrasion, denudation, karst phenomena, landscapes

- Hydrogeology
- Stratigraphy: age of rocks
- Paleontology: Beginning of life on Earth, Theory of evolution, Methods of fossilization, Historical view of life variety and mass dying out.

### Temeljni literatura in viri / Readings:

- Brown, G. C., Hawkesworth, C.J., Wilson, R.C.L. (1992) Understanding the Earth: a new synthesis. Cambridge University Press.
- Dolinar, B. (2012) Geologija s paleontologijo. Zapiski predavanj, UM, Fakulteta za gradbeništvo.
- Grafenauer, S., Duhovnik J. (1977) Sistematska mineralogija. Fakulteta za naravoslovje in tehnologijo, Ljubljana.
- Mirtič, B., Mladenovič, A., Vesel, J., Vižintin, N. (1999) Slovenski naravni kamen. Restavratorski center RS, Ljubljana.
- McGeary, D., Plummer, C.C. (2000) Physical Geology. Earth revealed. Wm. C. Brown Publishers (Dubuque, Iowa).
- Pavšič, J. (1995) Fosili. Tehniška založba Slovenije, Maribor.
- Pavšič, J. (1999) Osnove geologije. Filozofska fakulteta, Univerza v Ljubljani.
- Pavšič, J. (2003) Paleontologija. Naravoslovnotehniška fakulteta, Univerza v Ljubljani.
- Skinner, B.J., Porter, S.C., Park, J. (1992) The Dynamic Earth. John Willey & Sons.

### Cilji in kompetence:

Cilj izbrane vsebine je pridobitev splošnih znanj o nastanku, spremembah, sestavi in lastnostih Zemljine skorje ter razvoju življenja. Snov predmeta je podlaga za razumevanje časovne percepcije današnjih procesov in pojavov, predvsem v zvezi z geomorfološkimi značilnostmi.

### Objectives and competences:

The aim of the selected contents is gain of general knowledge about history, origin, composition and properties of earth's crust and evolution of life. The case of the subject should be the base of time perception of recent processes involved in geomorphological characteristics.

### Predvideni študijski rezultati:

#### Znanje in razumevanje:

- Razumevanje nastanka in sestave mineralov, kamnin in zemljin ter s tem povezanih fizikalnih in mehanskih lastnosti.
- Poznavanje in razumevanje procesov, ki oblikujejo Zemljino površje in vplivajo na atmosfero, biosfero in hidrosfero.

### Intended learning outcomes:

#### Knowledge and understanding:

- Understanding the origin and composition of minerals, rocks and soils and the associated physical and mechanical properties.
- Knowledge and understanding of the processes that shape the Earth's surface and affecting on the atmosphere, biosphere and

- Spoznavanje osnov in pomena paleotologije v geologiji.
- Poznavanje geološke zgradbe Slovenije.

**Prenesljive/ključne spretnosti in drugi atributi:**

Študentje razumejo, kako različni procesi, ki neprestano potekajo v zemljini notranjosti in na njeni površini, vplivajo na okolje in s tem na evolucijo vseh živih bitij. Poznajo najbolj razširjene vrste kamnin in njihove okvirne fizikalne lastnosti.

hydrosphere.

- Getting to know the basics and importance of paleontology in geology.
- Knowledge of the geological composition of Slovenia.

**Transferable/Key Skills and other attributes:**

Students understand how the different processes that are constantly taking place in the Earth's interior and on its surface, affect the environment and thus the evolution of all living beings. They know the most prevalent types of rocks and their indicative physical properties.

**Metode poučevanja in učenja:**

- Predavanja
- Laboratorijske vaje

**Learning and teaching methods:**

- Lectures
- Laboratory exercises

Delež (v %) /

**Načini ocenjevanja:**

Weight (in %)

**Assessment:**

<ul style="list-style-type: none"> <li>• Pisni izpit</li> <li>• Ustni izpit</li> </ul>	<p>60</p> <p>40</p>	<ul style="list-style-type: none"> <li>• Written exam</li> <li>• Oral exam</li> </ul>
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**Reference nosilca / Lecturer's references:**

1. DOLINAR, Bojana. Practical application of the results for optically measured total suspended solids concentrations in the Drava River. *Journal of water resource and protection*, ISSN 1945-3108. [Online ed.], May 2014, vol. 6, no. 7, str. 710-721. <http://www.scirp.org/journal/jwarp/>, doi: [10.4236/jwarp.2014.67068](https://doi.org/10.4236/jwarp.2014.67068). [COBISS.SI-ID [17860630](https://www.cobiss.si/id/17860630)]
2. DOLINAR, Bojana. A simplified method for determining the external specific surface area of non-swelling fine-grained soils. *Applied clay science*, ISSN 0169-1317. [Print ed.], Aug. 2012, vol. 64, str. 34-37, doi: [10.1016/j.clay.2011.04.013](https://doi.org/10.1016/j.clay.2011.04.013). [COBISS.SI-ID [16216854](https://www.cobiss.si/id/16216854)], [JCR, SNIP, WoS]
3. DOLINAR, Bojana, ŠKRABL, Stanislav. The matrix potential of fine-grained soils at the liquid limit. *Engineering geology*, ISSN 0013-7952, 15 May 2012, vol. 135-136, str. 48-51, doi: [10.1016/j.enggeo.2012.03.003](https://doi.org/10.1016/j.enggeo.2012.03.003). [COBISS.SI-ID [15986966](https://www.cobiss.si/id/15986966)], [JCR, SNIP, WoS]
4. DOLINAR, Bojana. Predicting the normalized, undrained shear strength of saturated fine-grained soils using plasticity-value correlations. *Applied clay science*, ISSN 0169-1317. [Print ed.], Feb. 2010, vol. 47, iss. 3/4, str. 428-432, doi: [10.1016/j.clay.2009.12.013](https://doi.org/10.1016/j.clay.2009.12.013). [COBISS.SI-ID [13823254](https://www.cobiss.si/id/13823254)], [JCR, SNIP, WoS]
5. DOLINAR, Bojana. Predicting the hydraulic conductivity of saturated clays using plasticity-value correlations. *Applied clay science*, ISSN 0169-1317. [Print ed.], June 2009, vol. 45, iss. 1/2, str. 90-94, doi: [10.1016/j.clay.2009.04.001](https://doi.org/10.1016/j.clay.2009.04.001). [COBISS.SI-ID [13225238](https://www.cobiss.si/id/13225238)], [JCR, SNIP, WoS]

