Univerza v Mariboru
University of Maribor

Fakulteta za naravoslovje in matematiko / Faculty of Natural Sciences and Mathematics

OPIS PREDMETA / SUBJECT SPECIFICATION	
Predmet:	**Speleobiologija**
Subject Title:	Speleobiology

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Biologija/Biology		3	zimski ali letni

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Lab. work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
15				30	135	6

Nosilec predmeta / Lecturer: Tone NOVAK

Jeziki / Languages:
Predavanja / Lecture: slovenski / Slovenian
Vaje / Tutorial: slovenski / Slovenian

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

Prerequisites:

Vsebina:

- Uvod v speleobiologijo
- Jame, špranje, umetni rovi, podzemeljsko površinsko okolje, tla
- Izviri, intersticialno okolje, hipotelminoreik, jezerske in morske globine, morske jame
- Troglomorfoze: velikost trupa in okončin, anoftalmija, depigmentiranost, apterizem, fizogastrija, psevdofizogastrija
- Troglobionti, troglofili, troglokseni; freatobionti; stigobionti
- Pregled organizmov v podzemlju: prokarioti; glive; rastline; živali
- Porifera, Protozoa, Cnidaria, Turbellaria, Nemertea, Nematoda, Mollusca, Polychaeta, Oligochaeta, Hirudinea, Chelicerata, Crustacea, Myriapoda, Insecta, Vertebrata
- Geografska razširjenost podzemeljskih živali
- Fiziologija in etologija podzemeljskih živali
- Evolucija podzemeljskih živali
- Slovenija kot država z največjo diverziteto podzemeljskih taksonov v svetovnem merilu
- Pregled najvažnejših podzemeljskih živali

Contents (Syllabus outline):

- Introduction into speleobiology
- Caves, fissures, artificial tunnels, superficial hypogean environment, soils
- Springs, interstitial environment, hipothelminoreic environment, deep lake and deep sea regions, marine caves
- Troglomorphoses: body and appendages size, anophthalmy, apterism, physogastry, pseudophysogastry
- Troglobionts, troglophiles, trogloxenes; freatobionts; stygobionts
- Review of organisms in the hypogean environments: Procaryota, Fungi, Plants, Animals
- Porifera, Protozoa, Cnidaria, Turbellaria, Nemertea, Nematoda, Mollusca, Polychaeta, Oligochaeta, Hirudinea, Chelicerata, Crustacea, Myriapoda, Insecta, Vertebrata
- Geographical distribution of the hypogean organisms
- Physiology and ethology of the hypogean organisms
- Evolution of the hypogean organisms
- Slovenija as the state with the highest diversity of the hypogean organisms in the World
- Review of the most prominent hypogean animals

Temeljni študijski viri / Textbooks:

- Chapman, P., 1993: Caves and cave life. Harper Collins, London.
- Culver, D. C., W. B. White (eds.), 2005: Encyclopedia of caves. Elsevier/Academic Press, Amsterdam/Boston.
- Gunn, J., 2004: Encyclopedia of caves and karst science. Taylor & Francis Books Inc., New York/London.
- Juberthie, C. & V. Decu (eds.), 1992-1996: Encyclopaedia biospeologica I-III. Societé de biospéologie, Moulis, Bukarest.
- Pipan, T., 2005: Epikarst – a promissing habitat. Carsologica, Založba ZRC, Ljubljana.
- Sket B., Paragamian K., Trontelj P., 2004. A census of the obligate subterranean fauna of the Balkan peninsula. In: Griffiths H. I., B. Kryštufek (eds.): Balkan Biodiversity. Pattern and Process in Europe's Biodiversity Hotspot. Kluwer Academic Publishers: 309-322.

Cilji:

- Podati pregled tipov in značilnosti podzemeljskih habitatov
- Podati pregled tipov in značilnosti podzemeljskih organizmov
- Predstaviti poseben status Slovenije glede diverzitete podzemeljskih taksonov

Objectives:

- To give an overview of typology and characteristics of hypogean habitats
- To give an overview of typology and characteristics of hypogean organisms
- To present the prominent position of Slovenia as for the diversity of the hypogean taxa

Predvideni študijski rezultati:

Znanje in razumevanje:

- Ekološke značilnosti podzemeljskih habitatov
- Biotske značilnosti podzemeljskih organizmov
- Zgodovina speleobiologije in trendi modernih znanstvenih raziskav
- Poznavanje osnovnih vzorčevalnih metod v podzemeljskih habitatih

Prenesljive/ključne spretnosti in drugi atributi:

- Prepoznavanje troglomorfoz in troglomorfoznih organizmov
- Usposobljenost za biološko raziskovalno delo v podzemeljskih votlinah

Intended learning outcomes:

Knowledge and Understanding:

- Ecological characteristics of hypogean habitats
- Biotic characterstics of hypogean organisms
- The history of speleobiology and modern trends of scientific investigations
- Knowledge about the elementary sampling methods in hypogean habitats

Transferable/Key Skills and other attributes:

- Recognition of troglomorphoses and troglomorphotic organisms
- Capability of biological investigations in cavities

Metode poučevanja in učenja:

- Predavanja
- Laboratorijske vaje
- Terenske vaje
- Individulano načrtovanje izbrane raziskave

Learning and teaching methods:

- Lectures
- Laboratory excersises
- Field excersises
- Individual planning of a selected investigation

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
• Seminarska naloga • Pisni izpit	20 80	• Seminar essay • Written examination

Materialni pogoji za izvedbo predmeta :

Material conditions for subject realization

• *Multimedijska predavalnica* • *Laboratorij z mikroskopi, binokularnimi lupami in kemijskim instrumentarijem* • *Ekskurzije na teren*	• *Lecture hall for multimedia presentations* • *Laboratory with microscopes, binocular lenses and chemical instruments* • *Field excursions*
Obveznosti študentov:	***Students' commitments:***
(pisni, ustni izpit, naloge, projekti)	*(written, oral examination, coursework, projects):*
• Seminarska naloga • Pisni izpit	• Seminar essay • Written examination