



OPIS PREDMETA / SUBJECT SPECIFICATION

Predmet:	Ekologija podzemeljskih habitatov
Subject Title:	Ecology of Hypogean Habitats

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Biologija in ekologija z naravovarstvom /Biology and ecology with nature conservation	Biologija; Ekologija z naravovarstvom / Biology; Ecology with nature conservation	2	3

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
30	15		15	15	135	7

Nosilec predmeta / Lecturer:

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

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

Vsebina: **Contents (Syllabus outline):**

<p>Podzemeljski habitati so naravne in umetne votline. S slovenskega ozemlja sta opisana prvi podzemeljski vretenčar, človeška ribica, ter prvi nevretenčar, hrošč drobnovratnik. Predavanja se začnejo s kratkim orisom zgodovine speleobiologije, ki so jo zasnovali raziskovalci na slovenskem ozemlju. Sledita pregled splošnih fizičnih razmer v podzemeljskih habitatih ter pregled splošnih značilnosti podzemeljskih živih bitij. Poudarek je na ekoloških razmerah v posameznih podzemeljskih tipih habitatov (naravne in umetne votline, epikras) ter na obravnavi troglobiontov in freatobiontov. Na terenu in v laboratoriju so prikazani vzori za ekološke raziskave podzemeljskih habitatov.</p>	<p>Hypogean habitats are natural and artificial cavities. In the Slovenian territory, the first vertebrate: the proteus, as well as the first invertebrate: the beetle leptodirus, have been described. The lectures begin with a consize historical review of the speleobiology, which had started in the territory of Slovenia. The overview of general physical characteristics of the hypogean habitats, and the characteristics of the hypogean fauna follow. The discussions on the ecological circumstances in different hypogean habitat types (natural and artificial cavities, epikarst), and the troglobites and freatobies are in focus. In field and in the laboratory, some examples of ecological investigations in hypogean habitats are presented.</p>
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Temeljni študijski viri / Textbooks:

- Bole, J., B. Drovenik, N. Mršič, B. Sket, 1993: Endemic animals in hypogean habitats in Slovenia. Naše jame, Ljubljana, 35(1): 43-55.
- Culver D. C., Christman M. C., Sket B., Trontelj P., 2004. Sampling adequacy in an extreme environment: species richness patterns in Slovenian caves. Biodiversity and Conservation, 13: 1209-1229.
- 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.
- Novak, T., 2005: Terrestrial fauna from cavities in Northern and Central Slovenia, and a review of systematically ecologically investigated cavities. Acta carsologica, 34(1): 169-210.
- Pipan, T., 2005: Epikarst – a promising 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.
- Vandel, A., 1964: Biospéologie. Guthier - Villars, Paris.

Cilji:

- Podati pregled tipov in značilnosti podzemeljskih habitatov
- Podati pregled tipov in značilnosti podzemeljskih organizmov
- Predstaviti osnovno poznavanje zgodovine speleobiologije in modernih trendov v njej
- Pojasniti osnovne ekološke razmere v podzemeljskih habitatih
- Prikazati izbrane metode ekološkega vzorčevanja v jamah

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 troglomorfnih organizmov
- Usposobljenost za ekološko raziskovalno delo v podzemeljskih votlinah

Metode poučevanja in učenja:

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

Načini ocenjevanja:

- Individualni raziskovalni projekt – pisni in ustna predstavitev
- Pisni ali ustni izpit

Delež (v %) /
Weight (in %)

50
50

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 basic knowledge about the history and modern trends in speleobiology
- To explain basic ecological circumstances in hypogean habitats
- To present selected ecological sampling methods in caves

Intended learning outcomes:

Knowledge and Understanding:

- Ecological characteristics of hypogean habitats
- Biotic characteristics 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 troglomorphic organisms
- Capability of ecological investigations in cavities

Learning and teaching methods:

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

Assessment:

- Individual project work – written, and oral presentation
- Written or oral exam

Materialni pogoji za izvedbo predmeta :

- *Multimedijska predavalnica*
- *Laboratorij z mikroskopi, binokularnimi lupami in kemijskim instrumentarijem*
- *Ekскурzije na teren*

Material conditions for subject realization

- *Lecture hall for multimedia presentations*
- *Laboratory with microscopes, binocular lenses and chemical instruments*
- *Field excursions*

Obveznosti študentov:*(pisni, ustni izpit, naloge, projekti)*

- Individualni raziskovalni projekt – pisni in ustna predstavitev
- Pisni ali ustni izpit

Students' commitments:*(written, oral examination, coursework, projects):*

- Individual project work – written, and oral presentation
- Written or oral exam