



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Biologija živali
Course title:	Biology of Animals

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Biologija in ekologija z naravovarstvom, 2. stopnja	/	1	1
Biology and Ecology with Nature Conservation, 2 nd cycle	/	1	1

Vrsta predmeta / Course type

Obvezni / Compulsory

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje work	Druge oblike študija	Samost. delo Individ. work	ECTS
45		30			105	6

Nosilec predmeta / Lecturer:

Tina KLENOVŠEK

Jeziki /

Predavanja / Lectures: Slovenščina / Slovene

Languages:

Vaje / Tutorial: Slovenščina / Slovene

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

/

Prerequisites:

/

Vsebina:

Primerjalne študije izbranih skupin živali (nevretenčarji, vretenčarji) na nivoju tkiv, organov in organskih sistemov.

Povezava zgradbe, fiziologije in funkcije specifičnih organov, organskih sistemov in telesnih delov izbranih živalskih skupin.

Morfološka variabilnost, morfološke adaptacije in adaptivne radiacije izbranih živalskih skupin.

Content (Syllabus outline):

Comparative approach to the selected groups of animals (invertebrates, vertebrates) at tissue, organ and organ systems levels.

Connection among anatomy, physiology and function of specific organs, organ systems and body parts in selected animal groups.

Morphological variability, morphological adaptations and adaptive radiations of selected groups of animals.

Evolucija, raznovrstnost in taksonomija izbranih skupin živali.

Ekologija in vedenje izbranih skupin živali.
Ravnanje z laboratorijskimi živalmi in njihovo gojenje.
Naravoslovne zbirke.

Evolution, diversity and taxonomy of selected animal groups.

Ecology and behaviour of selected animal groups.
Handling and maintaining laboratory animals.
Natural collections.

Temeljni literatura in viri / Readings:

- Brusca R.C., Brusca G.J., (2003 in novejši izdaji) Invertebrates. Sinauer, Sunderland.
- Liem, K. F., W. E. Bemis, W. F. Walker, L. Grande, (2001 in novejši izdaji). Functional Anatomy of the Vertebrates. An Evolutionary Perspective. Harcourt College Publishers. Orlando.

Cilji in kompetence:

Poznavanje in razumevanje telesne zgradbe izbranih skupin živali na nivoju tkiv, organov ali organskih sistemov.

Sposobnost interpretacije odnosa med obliko, funkcijo in adaptivno radiacijo.

Poznavanje morfološke variabilnosti in taksonomije izbranih skupin živali.
Samostojna determinacija živali do nivoja družin oz. redov.

Poznavanje in sposobnost interpretacije ekologije in vedenja izbranih skupin živali.

Sposobnost primerne ravnanja z izbranimi gojenimi živalmi.
Sposobnost vzdrževanja naravoslovnih zbirk.

Uporaba različnih metod in tehnik v zoološkem delu.

Objectives and competences:

Knowledge and understanding of morphology of selected groups of animals at tissue, organ or organ systems levels.

Ability to interpret the relationship among form, function, and adaptive radiation.

Knowledge of morphological variability and taxonomy of selected groups of animals.
Ability of independent determination of animals to the level of families or orders.

Knowledge and ability to interpret the ecology and behaviour of selected groups of animals.

Ability of proper handling of selected domesticated animals.
Maintenance of natural collections.

Use of different methods and techniques in zoology.

Predvideni študijski rezultati:

Po opravljenem kurzu naj bi bili študentje sposobni:

Intended learning outcomes:

After the accomplished course the students should be able to:

Razložiti vlogo adaptacij, ki so pripeljale do raznolikosti telesne zgradbe in različnih življenjskih strategij živali.
 Razložiti povezavo med organizacijo živalskega telesa in njegovim okoljem.
 Razložiti biodiverzitetu živali na regionalnem in svetovnem nivoju.
 Uporabljati različne metode in tehnike v zoološkem delu.
 Gojiti izbrane skupine laboratorijskih živali.
 Voditi naravoslovno zbirko živali s pripadajočo informatiko.
 Načrtovati in izvajati eksperimente in meritve na živalih.
 Sodelovati pri načrtovanju monitoringa in upravljanju z izbranimi skupinami živali.

To explain the role of adaptations that have led to the diversity of the body structure and various life strategies of animals.
 To explain the connection between the organization of the animal body and its environment.
 Explain the biodiversity of animals at the regional and global level.
 Use different methods and techniques in zoology.
 Inbred selected groups of laboratory animals.
 Keep a collection of animals with related informatics.
 Plan and perform experiments and measurements on animals.
 Participate in the planning of monitoring and management of selected groups of animals.

Metode poučevanja in učenja:

- Predavanja
- Laboratorijske vaje in individualno eksperimentalno delo

Learning and teaching methods:

- Lectures
- Laboratory exercises and individual experimental practice

Delež (v %) /

Načini ocenjevanja:

Weight (in %)

Assessment:

- Seminarska naloga in predstavitev	50	- Seminar essay and presentation
- Pisni izpit	50	- Written exam

Reference nosilca / Lecturer's references:

DEVETAK, Dušan, PODLESNIK, Jan, SCHARF, Inon, KLENOVŠEK, Tina. Fine sand particles enable antlions to build pitfall traps with advanced three-dimensional geometry. *Journal of Experimental Biology*. Aug. 2020, vol. 223, no. 15, str. 1-10.

KLENOVŠEK, Tina. Modularity of the dorsal and lateral view of the skull in the European ground squirrel = Modularnost dorzalne in lateralne strani lobanje evropske tekunice. *Acta biologica slovenica : ABS*. [Tiskana izd.]. 2020, vol. 63, no. 1, str. 17-23

KRYŠTUFEK, Boris, SHENBROT, Georgy I., KLENOVŠEK, Tina, JANŽEKOVIČ, Franc. Geometric morphometrics of mandibular shape in the dwarf fat-tailed jerboa : relevancy for trinomial taxonomy. *Zoological journal of the Linnean Society*. Aug. 2021, vol. 192, iss. 4, str. 1363-1372,

KRYŠTUFEK B, JANŽEKVIČ F, HUTTERER R, KLENOVŠEK T. 2017 Morphological evolution of the skull in closely related bandicoot rats : a comparative study using geometric morphometrics. *Hystrix : the italian journal of mammalogy*, 27 (2): 1-7.

JANŽEKVIČ, Franc, KLENOVŠEK, Tina, MLÍKOVSKÝ, Jiří, TOŠKAN, Borut, VELUŠČEK, Anton. Eneolithic pile dwellers captured waterfowl in winter : analysis of avian bone remains from two pile dwellings in Ljubljansko barje (Slovenia). *International journal of osteoarchaeology*. [Print ed.]. 2021, vol. 31, iss. 6, str. 977-986.