



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Osnove etologije
Course title:	Foundations of Ethology

Študijski program in stopnja Study programme and cycle	Študijska smer Study option	Letnik Academic year	Semester Semester
Univerzitetni študijski program Biologija, 1. stopnja		2., 3.	4., 6
Undergraduate university programme Biology, 1 st cycle		2 nd , 3 rd	4 th , 6 th

Vrsta predmeta / Course type

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Lab. vaje Laboratory work	Druge oblike študija	Samost. delo Individ. work	ECTS
30			15		135	6

Nosilec predmeta / Lecturer:

Jeziki / Languages: Predavanja / Lectures:
Vaje / Tutorial:

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

Jih ni.

Prerequisites:

None.

Vsebina:

- Iz zgodovine študija vedenja živali
- Raznolikost vedenja
- Vedenje in dednost
- Razvoj vedenja
- Živčne osnove vedenja
- Organizacija vedenja
- Trendi v evoluciji vedenja
- Evolucija adaptacij. Evolucija komunikacij
- Izbira habitata, migracije, teritorialnost
- Adaptivno prehranjevalno vedenje
- Adaptacije na plenilstvo
- Razmnoževalne strategije; ekologija razmnoževanja
- Skrb za potomstvo
- Ekologija socialnega vedenja
- Etološke osnove vedenja človeka

Content (Syllabus outline):

- On the history of the study of animal behaviour
- The diversity of behaviour
- The genetics of behaviour
- The development of behaviour
- The neural basis of behaviour
- The organization of behaviour
- The evolution of behaviour: historical pathways
- The evolution of adaptations and communication
- Habitat selection, migration, territoriality
- Adaptive feeding behaviour
- Coping with predators
- Reproductive tactics; the ecology of mating system
- Care for offspring
- The ecology of social behaviour
- Ethological basis of human behaviour

Temeljni literatura in viri / Readings:

Temeljni viri/ Basic literature:

- Manning, A., Stamp Dawkins, M. (2012). An introduction to animal behaviour. Cambridge University Press

Dopolnilni viri/ Recommended literature:

- Rubenstein, D.R., Alcock, J., (2018). Animal behavior. 11th ed. Oxford University Press
- Davies, N. B., Krebs, J. R., West, S. A. (2012). An Introduction to Behavioural Ecology. Fourth edition. Wiley-Blackwell.
- Martin, P. R., Bateson, P. P. G. (2010). Measuring behaviour : an introductory guide. Cambridge University Press.

Cilji in kompetence:

Študenti:

- opredelijo različne tipe vedenj na osnovi primerov;
- razumejo vpliv notranjih in zunanjih dejavnikov na vedenje;
- znajo uporabiti različne metode pri študiju vedenja;
- razložijo, kako se je vedenje med evolucijo spreminjalo;
- povežejo etologijo in druga področja, na katerih se aplicirajo znanja etologije

Objectives and competences:

Students:

- identify different types of behaviour based on examples;
- understand the effect of internal and external factors on the behaviour;
- understand different methods used in behavioural studies;
- understand evolutionary trends in behaviour;
- In addition, students get acquainted with the areas in which ethology is

(npr. sociologija, filozofija, psihologija, kmetijstvo);

- samostojno zasnujejo ter izvedejo etološki poskus
- kritično ovrednotijo rezultate poskusa

applied (e. g. sociology, philosophy, psychology, agriculture);

- perform an ethological experiment independently
- - critically evaluate the result of experiment

Predvideni študijski rezultati:

Po opravljeni učni enoti naj bi bili študenti zmožni:

- prepoznati različne tipe vedenj na osnovi primerov;
- razumeti povezavo med vedenjem in evolucijo;
- pojasniti kompleksnost vedenja;
- razumeti in razložiti živčne osnove vedenja;
- razložiti adaptivno vlogo plastičnosti vedenja;
- razložiti socialno vedenje ter njegov pomen
- aplicirati znanje o vedenju živali na druga področja

Prenesljive/ključne spretnosti in drugi atributi:

- znajo načrtovati in izvesti preproste etološke eksperimente
- znajo ovrednotiti rezultate etološkega poskusa
- pripraviti ter opraviti predstavitev

Intended learning outcomes:

Knowledge and understanding:
Students:

- identify different types of behaviour on a case-by-case basis;
- understand connection between behaviour and evolution;
- understand and become aware of the complexity of behaviour;
- understand the neural basis of behaviour;
- understand and explain an adaptive role of plasticity of behaviour;
- explain the significance of social behaviour.
- apply knowledge about animal behavior on other areas.

Transferable/Key Skills and other attributes:

- ability to plan and perform simple ethological experiments
- ability to evaluate the results of a behavioural experiment
- prepare and perform presentation

Metode poučevanja in učenja:

Predavanja
Laboratorijske vaje
Individualno eksperimentalno delo

Learning and teaching methods:

Lectures
Laboratory exercises
Individual experimental work

Načini ocenjevanja:	Delež (v %) / Weight (in %)	Assessment:
<ul style="list-style-type: none"> – Kolokvij iz vaj – Individualno eksperimentalno delo s predstavitevijo – Pisni izpit 	<p style="text-align: center;">25 25 50</p>	<ul style="list-style-type: none"> – Examination of exercises – Individual experimental work and presentation – Written examination
<p>Pozitivno opravljena kolokvij iz laboratorijskih vaj in individualnega eksperimentalnega dela s predstavitevijo sta pogoja za pristop k izpitu.</p>		<p>Positive results of the laboratory exercise examination and individual experimental work with presentation are prerequisites for the written exam.</p>

Reference nosilca / Lecturer's references:

KLOKOČOVNIK, Vesna, DEVETAK, Dušan. Efficiency of antlion trap design and larval behavior in capture success. *Behavioral ecology*. 2022, vol. 33, no. 1, str. 184-189, ilustr. ISSN 1045-2249. DOI: [10.1093/beheco/arab124](https://doi.org/10.1093/beheco/arab124). [COBISS.SI-ID [84527107](https://www.cobiss.si/id/84527107)] financer: ARRS, Programi, P1-0403, SI, Računsko intenzivni kompleksni sistemi; Razvoj raziskovalne infrastrukture za mednarodno konkurenčnost slovenskega RRI prostora - RI-SI-LifeWatch.

KLOKOČOVNIK, Vesna, VELER, Eva, DEVETAK, Dušan. Antlions in interaction : confrontation of two competitors in limited space. *Israel journal of ecology & evolution*. 2020, vol. 66, iss. 1/2, str. 73-81, ilustr. ISSN 1565-9801. DOI: 10.1163/22244662-20191058. [COBISS.SI-ID 24894216] financer: ARRS, Programi, P1-0403 (A), SI, Računsko intenzivni kompleksni sistemi.

PODLESNIK, Jan, KLOKOČOVNIK, Vesna, LORENT, Vincent, DEVETAK, Dušan. Prey detection in antlions : propagation of vibrational signals deep into the sand. *Physiological entomology*. 2019, vol. 44, iss. 3/4, str. 215-221. ISSN 0307-6962. DOI: 10.1111/phen.12295. [COBISS.SI-ID 24646664]financer: ARRS, Programi, P1-0403, SI, Računsko intenzivni kompleksni sistemi.