



Univerza v Mariboru

Fakulteta za naravoslovje  
in matematiko

### UČNI NAČRT PREDMETA / COURSE SYLLABUS

<b>Predmet:</b>	<b>Etologija</b>
<b>Course title:</b>	<b>Ethology</b>

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Enovit magistrski študijski program druge stopnje Predmetni učitelj	/		
Five-year master's degree program Subject Teacher	/		

**Vrsta predmeta / Course type**

**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
15	15		15		135	6

**Nosilec predmeta / Lecturer:**

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

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

Poznavanje osnov zoologije. Poznavanje metod dela v fiziologiji živali.

**Prerequisites:**

Knowledge of fundamentals of zoology. Knowledge of methods of animal physiology.

**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

**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

- Ekologija socialnega vedenja
- Etološke osnove vedenja človeka

- Care for offspring
- The ecology of social behaviour
- Ethological basis of human behaviour

### Temeljni literatura in viri / Readings:

- Alcock, J., 2005: Animal behavior: an evolutionary approach. 8th ed. Freeman, Sunderland.
- Barrows, E. M., 2003: Animal Behavior Desk Reference. CRC Press, Boston.
- Dugatkin, L. A. (ed.), 2001: Model systems in behavioural ecology. Princeton University Press, Princeton.
- McFarland, D., 1985: Animal Behaviour, Longman, Harlow.

### Cilji in kompetence:

- Razumejo metode, ki se uporabljajo pri študiju vedenja
- Usvojijo temeljna znanja za raziskovanje kompleksnosti vedenja
- Spoznajo, da se je vedenje med evolucijo spreminjalo
- Spoznajo področja, na katerih se aplicirajo znanja etologije (npr. sociologija, filozofija, psihologija)

### Objectives and competences:

- Understand basic methods used in behavioural studies
- acquire basic knowledge necessary to study complexity of behaviour
- understand evolutionary trends in behaviour
- In addition, students get acquainted with the areas in which ethology is applied (e. g. sociology, philosophy, psychology)

### Predvideni študijski rezultati:

#### Znanje in razumevanje:

- Razumejo povezavo med vedenjem in evolucijo
- Spoznajo kompleksnost vedenja
- Razumejo živčne osnove vedenja
- Razumejo adaptivno vlogo plastičnosti vedenja
- Razumejo pomen socialnega vedenja

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

- Sposobnost načrtovati in izvesti preproste eksperimente za testiranje odzivov živali na kontrolirane spremembe v njenem okolju
- Sposobnost ovrednotiti rezultate etološkega poskusa

### Metode poučevanja in učenja:

- Predavanja
- Laboratorijske vaje – individualno eksperimentalno delo

### Intended learning outcomes:

#### Knowledge and understanding:

- Understand relations between behaviour and evolution
- Become aware of the complexity of behaviour
- Understand the neural basis of behaviour
- Understand an adaptive role of plasticity of behaviour
- Understand the significance of social behaviour

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

- Ability to arrange simple experiments testing behavioural responses of an animal to controlled changes of its environment.
- Ability to evaluate results of a behavioural experiment.

### Learning and teaching methods:

- Lectures
- Laboratory excersises – individual experimental practice

Načini ocenjevanja:	Weight (in %)	Assessment:
Praktično delo in seminarska naloga.	50%	Practical work and seminar essay.
Pisni izpit.	50%	Written exam.

#### Reference nosilca / Lecturer's references:

1. DEVETAK, Dušan, NOVAK, Tone, JANŽEKOVIČ, Franc. Effect of substrate density on behaviour of antlion larvae (Neuroptera: Myrmeleontidae). *Acta oecologica*. [Print ed.], 2012, vol. 43, str. 1-7. [COBISS.SI-ID [19210248](#)]
2. KLOKOČOVNIK, Vesna, DEVETAK, Dušan, ORLAČNIK, Marina. Behavioral plasticity and variation in pit construction of antlion larvae in substrates with different particle sizes. *Ethology*, Nov. 2012, vol. 118, iss. 11, str. 1102-1110, doi: [10.1111/eth.12012](#). [COBISS.SI-ID [19324936](#)]
3. LIPOVŠEK DELAKORDA, Saška, LETOFSKY-PAPST, Ilse, HOFER, Ferdinand, LEITINGER, Gerd, DEVETAK, Dušan. The evidence on the degradation processes in the midgut epithelial cells of the larval antlion *Euroleon nostras* (Geoffroy in Fourcroy, 1785) (Myrmeleontidae, Neuroptera). *Micron (1993)*. [Print ed.], 2012, vol. 43, iss. 5, str. 651-665, ilustr., doi: [10.1016/j.micron.2011.11.012](#). [COBISS.SI-ID [18855176](#)]
4. LIPOVŠEK DELAKORDA, Saška, LETOFSKY-PAPST, Ilse, HOFER, Ferdinand, PABST, Maria Anna, DEVETAK, Dušan. Application of analytical electron microscopic methods to investigate the function of spherites in the midgut of the larval antlion *Euroleon nostras* (Neuroptera: Myrmeleontidae). *Microsc. res. tech. (Print)*, 2012, vol. 75, iss. 4, str. 397-407, ilustr., doi: [10.1002/jemt.21069](#). [COBISS.SI-ID [18638856](#)]
5. DEVETAK, Dušan, LIPOVŠEK DELAKORDA, Saška, PABST, Maria Anna. Larval morphology of the antlion *Neuroleon microstenus* (McLachlan, 1898) (Neuroptera, Myrmeleontidae), with notes on larval biology. *Zootaxa (Print)*, 2010, 2428, str. 55-63, ilustr. <http://www.mapress.com/zootaxa/2010/f/zt02428p063.pdf>. [COBISS.SI-ID [17543944](#)]