



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Izbrana poglavja iz predatorskega vedenja
Course title:	Selected Topics in Predatory Behaviour

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Doktorski študij Ekološke znanosti, 3. stopnja		1. ali 2.; 1st or 2nd	1. 2. ali 3. ; 1st, 2nd or 3rd
Doctoral Study Ecological Sciences, 3rd degree			

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
5	5				140	5

Nosilec predmeta / Lecturer:

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

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

Poznavanje fiziologije in ekologije na ravni univerzitetnega programa ter eksperimentalnih metod v fiziologiji na ravni drugostopenjskega programa

Prerequisites:

Knowledge of physiology and ecology at graduate level, and Knowledge of experimental methods in physiology at master level

Vsebina:

Obravnavana so izbrana poglavja iz naslednjih sklopov.
 – Zaznavanje plena in njegovo prepoznavanje
 – Teorija optimalnega iskanja hrane
 – Predator in učinkovitost iskanja hrane
 – Vpliv predatorjev in kompetitorjev na optimalno iskanje hrane
 – Lov plena; socialnost in lov večjega plena
 – Prilagoditve plena na predatorje: zmanjšanje možnosti zaznavanja; zmanjšanje možnosti napada; zmanjšanje možnosti ulova; zmanjšanje možnosti konzumiranja

Content (Syllabus outline):

– Detecting prey and its recognition
 – Theory of optimal foraging
 – Predator and foraging efficiency
 – Role of predators and competitors in optimal foraging
 – Capturing prey; Sociality and the capture of large prey
 – Coping with predators adaptively: Making detection less likely. Making an attack less likely. Making capture less likely. Making consumption less likely.

Temeljni literatura in viri / Readings:

- Alcock, J., (2013). Animal behavior: an evolutionary approach. 10th ed. Freeman, Sunderland.
- Foelix, R. F. (2011). Biology of spiders. Oxford University Press.
- Herberstein, M. E. (2011). Spider behaviour : flexibility and versatility. Cambridge University Press.
- McFarland, D. (1999). Animal Behaviour : Psychobiology, ethology and evolution. Pearson: Prentice Hall.
- Dugatkin, L. A. (ed.), (2001). Model systems in behavioral ecology. Princeton University Press, Princeton

Cilji in kompetence:

Študenti:

- Podrobno razumejo metode študija vedenja
- Podrobno usvojijo znanja za raziskovanje kompleksnosti predatorskega vedenja
- Podrobno razumejo evolucijsko spreminjanje predatorskega vedenja
- Podrobno spoznajo vlogo predatorjev za evolucijo/ selekcijo plena

Objectives and competences:

Students:

- Understand advanced methods used in behavioural studies
- Acquire advanced knowledge necessary to study complexity of predatory behaviour
- Understand in detail evolutionary trends in predatory behaviour
- Get acquainted in detail with the role of predators in prey evolution/selection

Predvideni študijski rezultati:

Znanje in razumevanje:

Študenti:

- Podrobno razumejo povezavo med predatorskim vedenjem in evolucijo
- Podrobno spoznajo kompleksnost predatorskega vedenja
- Podrobno razumejo živčne osnove vedenja
- Podrobno razumejo adaptivno vlogo plastičnosti predatorskega vedenja

Prenesljive/ključne spretnosti in drugi atributi:

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

Intended learning outcomes:

Knowledge and understanding:

Students:

- Understand advanced connection between predatory behaviour and evolution
- Become advanced knowledge of the complexity of predatory behaviour
- Understand in detail the neural basis of behaviour
- Understand in detail the adaptive role of plasticity of predatory behaviour

Transferable/Key Skills and other attributes:

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

Metode poučevanja in učenja:

- Predavanja
- Laboratorijske vaje – individualno eksperimentalno delo

Learning and teaching methods:

- Lectures
- Laboratory excersises – individual experimental practice

Načini ocenjevanja:	Delež (v %) / Weight (in %)	Assessment:
– Kolokvij iz vaj	30 %	– Partial exam of experimental practice
– Seminarska naloga	30 %	– Seminar essay
– Pisni izpit	40 %	– Written exam

Reference nosilca / Lecturer's references:

- DEVETAK, Dušan. Sand-borne vibrations in prey detection and orientation of antlions. V: COCROFT, Reginald Bifield (ur.), et al. *Studying vibrational communication*, (Animal signals and communication, ISSN 2197-7305, vol. 3). Berlin: Springer, 2014, str. 319-330, ilustr., doi: [10.1007/978-3-662-43607-3_16](https://doi.org/10.1007/978-3-662-43607-3_16). [COBISS.SI-ID [20779528](#)]
- KLOKOČOVNIK, Vesna, DEVETAK, Dušan. Pit-builder vs non-pit-builder : advantage of trap building strategy in antlion larvae does not mean greater behaviour diversity. *Behaviour*, ISSN 0005-7959, 2014, vol. 151, issue 5, str. 653-668, ilustr. <http://booksandjournals.brillonline.com/content/journals/10.1163/1568539X-00003156>, doi: [10.1163/1568539X-00003156](https://doi.org/10.1163/1568539X-00003156). [COBISS.SI-ID [20356872](#)], [JCR, SNIP, WoS do 5. 5. 2014: št. citatov (TC): 0, čistih citatov (CI): 0, normirano št. čistih citatov (NC): 0, Scopus do 14. 4. 2014: št. citatov (TC): 0, čistih citatov (CI): 0, normirano št. čistih citatov (NC): 0]
- DEVETAK, Dušan, ARNETT, Amy E. A click beetle larva (Coleoptera: Elateridae) preying upon an antlion larva (Neuroptera: Myrmeleontidae). *Entomological news*, ISSN 0013-872X, 2010, vol. 121, no. 5, str. 514-516. [COBISS.SI-ID [18950408](#)], [JCR, SNIP, WoS do 6. 3. 2012: št. citatov (TC): 0, čistih citatov (CI): 0, normirano št. čistih citatov (NC): 0, Scopus do 28. 3. 2012: št. citatov (TC): 0, čistih citatov (CI): 0, normirano št. čistih citatov (NC): 0]
- DEVETAK, Dušan. Effects of larval antlions *Euroleon nostras* (Neuroptera, Myrmeleontidae) and their pits on the escape-time of ants. *Physiological entomology*, ISSN 0307-6962, 2005, 30, str. 82-86, graf. prikazi. [COBISS.SI-ID [13844488](#)], [JCR, SNIP, WoS do 6. 5. 2014: št. citatov (TC): 8, čistih citatov (CI): 4, normirano št. čistih citatov (NC): 4, Scopus do 15. 4. 2014: št. citatov (TC): 8, čistih citatov (CI): 4, normirano št. čistih citatov (NC): 4]