



Univerza v Mariboru

Fakulteta za naravoslovje  
in matematiko

### UČNI NAČRT PREDMETA / COURSE SYLLABUS

<b>Predmet:</b>	<b>Izbrana poglavja iz predatorskega vedenja</b>
<b>Course title:</b>	<b>Selected Topics in Predatory Behaviour</b>

Študijski program in stopnja Study programme and cycle	Študijska smer Study option	Letnik Academic year	Semester Semester
Doktorski študij Ekološke znanosti, 3. stopnja		1. ali 2.; 1 <sup>st</sup> or 2 <sup>nd</sup>	1.- 4.; 1 <sup>st</sup> -4 <sup>th</sup>
Doctoral Study Ecological Sciences, 3 <sup>rd</sup> cycle			

Vrsta predmeta / Course type: Izbirni/Elective

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	5		10		150	6

Nosilec predmeta / Lecturer: Vesna KLOKOČOVNIK

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

**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:**

**Content (Syllabus outline):**

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

- 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:

- Rubenstein, D.R., Alcock, J., (2018). Animal behavior. 11th ed. Oxford University Press
- Alcock, J., (2013). Animal behavior: an evolutionary approach. 10th ed. Freeman, Sunderland.
- Davies, N. B., Krebs, J. R., West, S. A. (2012). An Introduction to Behavioural Ecology. Fourth edition. Wiley-Blackwell.
- 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
- 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.

### Cilji in kompetence:

Po opravljeni učni enoti naj bi bili študentje zmožni:

- predstaviti metode študija vedenja
- na primerih razložijo teorijo optimalnega plenjenja
- razložijo evlucijsko spreminjanje predatorskega vedenja
- prepoznajo vlogo predatorjev za evolucijo/ selekcijo plena
- navedejo primere strategij obrambe plena pred plenilci

### Objectives and competences:

Students:

- present advanced methods used in behavioural studies
- explain optimal foraging theory
- explain detail evolutionary trends in predatory behaviour
- recognize the role of predators in prey evolution/selection
- give examples of antipredator strategies of prey

### Predvideni študijski rezultati:

**Znanje in razumevanje:**  
Študenti:

- razumejo in znajo pojasniti povezavo med predatorskim vedenjem in evolucijo
- podrobno spoznajo in na primerih razložijo kompleksnost predatorskega vedenja
- Podrobno razumejo živčne osnove vedenja
- razložijo adaptivno vlogo plastičnosti predatorskega vedenja

### Intended learning outcomes:

**Knowledge and understanding:**  
Students:

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

<p><b>Prenesljive/ključne spretnosti in drugi atributi:</b></p> <ul style="list-style-type: none"> <li>- Sposobnost načrtovati in izvesti kompleksne eksperimente za testiranje odzivov živali na kontrolirane spremembe v njenem okolju</li> <li>- Sposobnost ovrednotiti rezultate kompleksnega etološkega poskusa</li> </ul>	<p>predatory behaviour</p> <p><b>Transferable/Key Skills and other attributes:</b></p> <ul style="list-style-type: none"> <li>- Ability to arrange complex experiments testing behavioural responses of an animal to controlled changes of its environment</li> <li>- Ability to evaluate results of a complex behavioural experiment</li> </ul>
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**Metode poučevanja in učenja:**

**Learning and teaching methods:**

<ul style="list-style-type: none"> <li>- Predavanja</li> <li>- Seminar</li> <li>- Laboratorijske vaje – individualno eksperimentalno delo</li> </ul>	<ul style="list-style-type: none"> <li>- Lectures</li> <li>- Seminar</li> <li>- Laboratory excersises – individual experimental practice</li> </ul>
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Delež (v %) /

**Načini ocenjevanja:**

Weight (in %)

**Assessment:**

<ul style="list-style-type: none"> <li>- Kolokvij iz vaj</li> <li>- Seminarska naloga</li> <li>- Pisni izpit</li> </ul>	<p>30 %</p> <p>30 %</p> <p>40 %</p>	<ul style="list-style-type: none"> <li>- Partial exam of experimental practice</li> <li>- Seminar essay</li> <li>- Written exam</li> </ul>
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**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. [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.

DEVETAK, Dušan, PODLESNIK, Jan, KLOKOČOVNIK, Vesna. Predator-prey interactions in antlions: transmission of vibrational signals deep into the sand. Acta entomologica slovenica. dec. 2018, vol. 26, št. 2, str. 121-130, ilustr. ISSN 1318-1998. [COBISS.SI-ID 1957365]