



OPIS PREDMETA / SUBJECT SPECIFICATION

Predmet:	Izbrana poglavja iz ekofiziologije živali
Subject Title:	Selected Topics in Animal Ecophysiology

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Doktorski študij Ekološke znanosti / Doctoral Study Ecological Sciences		Izbirni 1 ali 2 ali 3	2 ali 3 ali 4 ali 5

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Lab. work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
5			5		140	5

Nosilec predmeta / Lecturer:

Jeziki / Predavanja / Lecture:
Languages: Vaje / Tutorial:

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

Poznavanje ekofiziologije živali na ravni univerzitetnega programa

Prerequisites:

Knowledge of animal ecophysiology at graduate level

Vsebina:

Obravnavana so izbrana poglavja iz naslednjih sklopov.

- Notranje okolje: intracelularno in ekstracelularno okolje. Zunanje okolje: atmosfera, vodno in kopensko okolje
- Homeostaza in regulacijski mehanizmi: toleranca in rezistenca; aklimatizacija in aklimacija
- Energetika živali: sproščanje in pretvorbe energije, aerobna in anaerobna presnova
- Temperatura in termoregulacija. Hitrost reakcij. Temperaturno okolje. Izmenjava toplote. Ektotermi, endotermi. (kaj pa poikilo- in hooetermi?) Biokemijske adaptacije na določene temperature
- Čutila in okolje
- Dihanje: dihanje v vodnem okolju in na kopnem.
- Voda in telesne tekočine. Izločanje
- Prehrana in prebava. Vzorci prehranjevanja. Specializirani prebavni sistemi (celuloza, hitin, voski)

Contents (Syllabus outline):

Selected topics in the following chapters are discussed.

- Internal environment: intracellular and extracellular environment. External environment: atmosphere, aquatic and terrestrial environments
- Homeostasis and regulation: tolerance and resistance; acclimatization and acclimation
- Animal energetics: energy release and transformations; aerobic metabolism; anaerobic metabolism
- Temperature and thermoregulation. Reaction rates. Thermal environment. Heat exchange. Ectotherms, endotherms. Biochemical adaptations to specific temperatures
- Sensory receptors and environment.
- Aquatic respiration; aerial respiration
- Water and body fluids. Excretion
- Nutrition and digestion. Feeding patterns
- Specialized digestive systems (cellulose, chitin, wax)

Temeljni študijski viri / Textbooks:

- Randall, D., W. Burggren, K. French, 2000: Eckert Animal Physiology. W. H. Freeman and Company, New York.
- Withers, P. C., 2002: Comparative Animal Physiology. Saunders College Publishing, Philadelphia, New York.

Cilji:

- Obravnavati zveze živalski organizem – zunanje okolje – notranje okolje na izbranih živalih
- Podrobno razumeti vpliv dejavnikov okolja na temeljne fiziološke procese
- Podrobno predstaviti fiziološke procese v izbranem živalskem organizmu

Objectives:

- To discuss relations: animal organism – internal environment – external environment on selected animals
- Advanced understanding the influence of environmental factors on general physiological processes
- To present in detail physiological processes in selected animal organisms

Predvideni študijski rezultati:

Znanje in razumevanje:

- Podrobno razumevanje zvez živalski organizem – zunanje okolje – notranje okolje
- Podrobno razumevanje procesov metabolizma od celičnega nivoja do organizma.

Prenesljive/ključne spretnosti in drugi atributi:

- Sposobnost načrtovati zahtevne vrhunske eksperimente za testiranje odzivov živali na kontrolirane spremembe v njenem okolju
- Sposobnost ovrednotiti zahtevne rezultate fiziološkega poskusa

Intended learning outcomes:

Knowledge and Understanding:

- Advanced understanding of relations: animal organism – internal environment – external environment
- Advanced understanding of metabolic processes from cell to organismic level.

Transferable/Key Skills and other attributes:

- Ability to arrange exacting experiments testing responses of an animal to controlled changes of its environment
- Ability to evaluate results of an exacting experiment in animal physiology

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:

• Laboratorijski dnevnik	10 %	• Diary of experimental practice
• Kolokvij iz vaj	20 %	• Partial exam of experimental practice
• Seminarska naloga	30 %	• Seminar essay
• Pisni izpit	40 %	• Written exam

Materialni pogoji za izvedbo predmeta :

- *Multimedijska predavalnica*
- *Laboratorij za fiziologijo živali*

Material conditions for subject realization

- *Lecture hall for multimedia presentation*
- *Laboratory for animal physiology*

Obveznosti študentov:

(pisni, ustni izpit, naloge, projekti)

Students' commitments:

(written, oral examination, coursework, projects):

<ul style="list-style-type: none">• Laboratorijski dnevnik• Kolokvij iz vaj• Seminarska naloga• Pisni izpit	<ul style="list-style-type: none">• Diary of experimental practice• Partial exam of experimental practice• Seminar essay• Written exam
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