



OPIS PREDMETA / SUBJECT SPECIFICATION

Predmet:	Ekofiziologija živali
Subject Title:	Animal Ecophysiology

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Biologija in ekologija z naravovarstvom /Biology and Ecology with Nature Conservation	Biologija / Biology	1	2

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
30	15		30	10	155	8

Nosilec predmeta / Lecturer:

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

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

Prerequisites:

Vsebina:

- 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. Biokemijske adaptacije na določene temperature.
- Čutila in okolje.
- Dihanje: dihanje vodnih in kopenskih organizmov.
- Voda in telesne tekočine. Izločanje.
- Prehrana in prebava. Vzorci prehranjevanja. Specializirani prebavni sistemi (celuloza, hitin, voski).

Contents (Syllabus outline):

- 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.
- Schmidt-Nielsen, K. 1997: Animal Physiology. Adaptation and Environment. 5th Edition. Cambridge Univ. Press, Cambridge.
- Withers, P. C., 2002: Comparative Animal Physiology. Saunders College Publishing, Philadelphia, New York.

Cilji:

- Obravnavati zveze živalski organizem – zunanje okolje – notranje okolje
- Pojasniti vpliv dejavnikov okolja na temeljne fiziološke procese
- Predstaviti temeljne fiziološke procese v živalskem organizmu

Objectives:

- To discuss relations: animal organism – internal environment – external environment
- To explain the influence of environmental factors on general physiological processes
- To present fundamental physiological processes in animal organisms

Predvideni študijski rezultati:

Znanje in razumevanje:

- Razumevanje zvez živalski organizem – zunanje okolje – notranje okolje
- Osnovni procesi metabolizma od celičnega nivoja do organizma.

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 fiziološkega poskusa

Intended learning outcomes:

Knowledge and Understanding:

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

Transferable/Key Skills and other attributes:

- Ability to arrange simple experiments testing responses of an animal to controlled changes of its environment
- Ability to evaluate results of an 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
- Kolokvij iz vaj
- Seminarska naloga
- Pisni izpit

10
20
30
40

- Diary of experimental practice
- Partial exam of experimental practice
- Seminar essay
- 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:**Students' commitments:**

<i>(pisni, ustni izpit, naloge, projekti)</i>	<i>(written, oral examination, coursework, projects):</i>
<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