



Univerza v Mariboru
University of Maribor

Fakulteta za naravoslovje in
matematiko
Faculty of Natural Sciences and
Mathematics



OPIS PREDMETA / SUBJECT SPECIFICATION

Predmet:	Fiziologija živali
Subject Title:	Animal Physiology

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Biologija/Biology	Biologija/Biology	3	6

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
45			30		105	6

Nosilec predmeta / Lecturer:

Dušan DEVETAK

Jeziki /
Languages:

Predavanja /
Lecture: slovenski / Slovenian

Vaje / Tutorial: slovenski / Slovenian

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

Prerequisites:

Potrebno je znanje fizike, kemije in splošne zoologije

Knowledge of Physics, Chemistry and General Zoology is required

Vsebina:

Contents (Syllabus outline):

- Zunanje in notranje okolje.
- Energetika celice. Energetika organizma.
- Temperatura in termoregulacija.
- Fiziologija membran: od zgradbe membrane do živčne integracije.
- Senzorična fiziologija: čutila in zaznavanje okolja.
- Hormoni in endokrini sistem.
- Celično gibanje, mišice in gibanje živali.
- Živčevje in vedenje.
- Kri in krvožilje.
- Izmenjava plinov – dihanje.
- Ionsko in osmotsko ravnotežje.
- Prehrana in prebava.
- Organizacija vedenja in njegova raznolikost.
- Evolucija vedenja, adaptacij in

- External and internal environments.
- Cellular energetics. Animal energetics.
- Temperature and thermoregulation.
- Membrane physiology: from membrane structure to neural integration.
- Sensory physiology: sensory organs and sensing the environment.
- Hormones and endocrine system.
- Cell movement, muscles and animal movement.
- Nervous system and behaviour.
- Blood and circulation.
- Gas exchange – respiration.
- Ionic and osmotic balance.
- Feeding and digestion.
- Organisation of behaviour and its diversity.
- Evolution of behaviour, adaptations and

- komunikacije.
- Reprodukcijska in spolna vedenja. Predatorstvo.
- Prehranjevalno vedenje. Skrb za potomce. Socialno vedenje.

- communication.
- Reproduction, sexual behaviour. Predation. Feeding. Caring for offsprings. Social behaviour.

Temeljni študijski viri / Textbooks:

- Alcock, J., 2005: Animal behavior: an evolutionary approach. 8th ed. Freeman, Sunderland.
- 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
- Pojasniti vlogo celičnih membran pri temeljnih fizioloških procesih
- Pojasniti integracijsko vlogo senzoričnega, hormonalnega in živčnega sistema
- Predstaviti temeljne fiziološke procese v živalskem organizmu
- Predstaviti raznolikost vzorcev vedenja in njegovo kompleksnost
- Podati evolucijski pristop pri študiju vedenja živali

Objectives:

- To discuss relations: animal organism – internal environment – external environment
- To explain the role of cell membranes in general physiological processes
- To explain integrative role of sensory, hormonal and nervous system
- To present fundamental physiological processes in animal organisms.
- To present diversity and complexity of behaviour.
- To give an evolutionary approach to animal behaviour.

Predvideni študijski rezultati:

Znanje in razumevanje:

- Razumevanje zvez živalski organizem – zunanje okolje – notranje okolje
- Vloga celičnih membran pri temeljnih fizioloških procesih
- Vloga integracijskih sistemov - senzoričnega, hormonalnega in živčnega sistema
- Osnovni procesi metabolizma od celičnega nivoja do mnogoceličnega organizma
- Kompleksnost vedenja živali

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 in etološkega poskusa

Intended learning outcomes:

Knowledge and Understanding:

- Understanding of relations: animal organism – internal environment – external environment
- The role of membranes in general physiological processes
- Integrative role of sensory system, hormonal and nervous systems
- Metabolic processes from cell to multicellular organism
- Complexity of animal behaviour

Transferable/Key Skills and other attributes:

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

Metode poučevanja in učenja:

- Predavanja
- Laboratorijske vaje – individualno eksperimentalno delo

Learning and teaching methods:

- Lectures
- Laboratory excersises – individual experimental practice

Načini ocenjevanja:

- Kolokvij iz vaj
- Seminarska naloga in predstavitev
- Pisni izpit

Delež (v %) /
Weight (in %)

30

30

40

Assessment:

- Partial exam of experimental practice
- Seminar essay and presentation
- 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)*

- Kolokvij iz vaj
- Seminarska naloga in predstavitev
- Pisni izpit

Students' commitments:*(written, oral examination, coursework, projects):*

- Partial exam of experimental practice
- Seminar essay and presentation
- Written exam