Univerza v Mariboru
University of Maribor

Fakulteta za naravoslovje in matematiko / Faculty of Natural Sciences and Mathematics

OPIS PREDMETA / SUBJECT SPECIFICATION	
Predmet: **Subject Title:**	**Osnove fiziologije živali** *Fundamentals of Animal Physiology*

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Izobraževalna biologija / Educational 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
30	-	-	30	-	90	**5**

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:

Ni pogojev

Prerequisites:

No prerequisites

Vsebina:

Zunanje in notranje okolje.
Energetika celice. Energetika organizma.
Temperatura in termoregulacija.
Fiziologija membran: od zgradbe membrane do živčne integracije.
Senzorična fiziologija: 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.

Contents (Syllabus outline):

External and internal environments.
Cellular energetics. Animal energetics.
Temperature and thermoregulation.
Membrane physiology: from membrane structure to neural integration.
Sensory physiology: 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.

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.
- Alcock, J., 2005: Animal behavior: an evolutionary approach. 8th ed. Freeman, Sunderland.

Cilji:

Objectives:

• Podati povezavo med živalskim organizmom in njegovim zunanjim in notranjim okoljem • Pojasniti vlogo membran pri temeljnih fizioloških procesih. • Pojasniti integracijsko vlogo senzoričnega sistema, živčevja in hormonalnega sistema. • Predstaviti temeljne fiziološke procese v živalskem organizmu.	• To give the connection between animal organism and its internal and external environment. • To explain the role of membranes in general physiological processes. • To explain integrative role of sensory system, hormones and nervous system. • To present fundamental physiological processes in animal organisms.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: • Povezava med živalskim organizmom in njegovim zunanjim in notranjim okoljem • Vlogo membran pri temeljnih fizioloških procesih. • Vloga integracijskih sistemov - senzoričnega sistema, živčevja in hormonalnega sistema. • 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.	Knowledge and Understanding: • Connection between animal organism and its internal and external environment. • The role of membranes in general physiological processes. • Integrative role of sensory system, hormones and nervous system. • Metabolic processes from cell to organism. 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:	**Learning and teaching methods:**
• Predavanja • Laboratorijske vaje – individualno eksperimentalno delo	• Lectures • Laboratory excersises – individual experimental practice

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
• Kolokvij iz vaj • Pisni izpit	50 50	• Partial exam of experimental practice • Written exam

Materialni pogoji za izvedbo predmeta :	***Material conditions for subject realization***
• *Multimedijska predavalnica* • *Laboratorij za fiziologijo živali*	• *Lecture hall for multimedia presentation* • *Laboratory for animal physiology*

Obveznosti študentov:	***Students' commitments:***
(pisni, ustni izpit, naloge, projekti)	*(written, oral examination, coursework, projects):*
• Kolokvij iz vaj • Pisni izpit	• Partial exam of experimental practice • Written exam