



Univerza v Mariboru

Fakulteta za naravoslovje  
in matematiko

### UČNI NAČRT PREDMETA / COURSE SYLLABUS

|                      |                                        |
|----------------------|----------------------------------------|
| <b>Predmet:</b>      | <b>Temelji splošne zoologije</b>       |
| <b>Course title:</b> | <b>Fundamentals of General Zoology</b> |

| <b>Študijski program in stopnja</b><br><b>Study programme and level</b>    | <b>Študijska smer</b><br><b>Study field</b> | <b>Letnik</b><br><b>Academic year</b> | <b>Semester</b><br><b>Semester</b> |
|----------------------------------------------------------------------------|---------------------------------------------|---------------------------------------|------------------------------------|
| <b>Enovit magistrski študijski program druge stopnje Predmetni učitelj</b> |                                             | <b>1.; 1st</b>                        | <b>1.; 1st</b>                     |
| <b>Five-year master's degree program Subject Teacher</b>                   |                                             |                                       |                                    |

**Vrsta predmeta / Course type**

Obvezni/Compulsory

**Univerzitetna koda predmeta / University course code:**

| <b>Predavanja</b><br><b>Lectures</b> | <b>Seminar</b><br><b>Seminar</b> | <b>Vaje</b><br><b>Tutorial</b> | <b>Lab. vaje</b><br><b>Laboratory work</b> | <b>Terenske vaje</b><br><b>Field work</b> | <b>Samost. delo</b><br><b>Individ. work</b> | <b>ECTS</b> |
|--------------------------------------|----------------------------------|--------------------------------|--------------------------------------------|-------------------------------------------|---------------------------------------------|-------------|
| <b>30</b>                            |                                  |                                | <b>30</b>                                  |                                           | <b>90</b>                                   | <b>5</b>    |

**Nosilec predmeta / Lecturer:**

Tina Klenovšek

**Jeziki /**

**Predavanja / Lectures:**

slovenski / Slovene

**Languages:**

**Vaje / Tutorial:**

slovenski / Slovene

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

Vsaka izmed obveznosti naštetih v načinih ocenjevanja mora biti opravljena s pozitivno oceno. Poročilo iz laboratorijskih vaj in pozitivna ocena pri laboratorijskem delu sta pogoj za pristop k pisnemu izpitu.

**Prerequisites:**

Each of the mentioned commitments must be assessed with a passing grade. Laboratory work report and a passing grade of the laboratory work are required for taking the written exam.

**Vsebina:**

- Osnovne značilnosti živali.
- Osnovni taksonomski in filogenetski pregled živali. Osnovna delitev živali glede na različne kriterije.
- Zunanje značilnosti glavnih skupin živali.
- Osnovna zgradba, vloga in delovanje živalskih tkiv: epitelno in žlezno tkivo, veziva in opornine, mišično tkivo, živčno

**Content (Syllabus outline):**

- Basic characteristics of animals.
- Basic taxonomic and phylogenetic overview of animals. Basic division of animals according to various criteria.
- External characteristics of major animal groups.
- Basic structure, role and function of animal tissues: epithelial and gland

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| <p>tkivo.</p> <ul style="list-style-type: none"> <li>- Osnovna zgradba, delovanje in vloga organskih sistemov in organov živali: integument, ogrodje, gibala, prehranjevanje in prebavila, dihanje in dihalna, organi za transport snovi, osmoregulacija, izločanje in izločala, čutila, živčevje, endokrini sistem, reproduktivni sistem.</li> <li>- Osnove nespolnega in spolnega razmnoževanja ter ostenetskega razvoja pri živalih.</li> <li>- Laboratorijske vaje se navezujejo na vsebino posameznih poglavij iz predavanj s poudarkom na spoznavanju osnovne histologije in anatomije živali in njihovih struktur.</li> </ul> | <p>tissues, connective and skeletal tissues, muscle tissue, nervous tissue.</p> <ul style="list-style-type: none"> <li>- Basic structure, role and function of organ systems and organs of animals: integumentary system, skeleton, motion organs, feeding and digestion organs, breathing and respiratory organs, circulatory systems, osmoregulation, excretion and excretory systems, sense organs, nervous system, endocrine system, reproductive system.</li> <li>- Basics of asexual and sexual reproduction and ontogenetic development in animals.</li> <li>- Laboratory exercises are linked with the content of individual lectures with emphasis on basic histology and anatomy of animals and their structures.</li> </ul> |
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#### Temeljni literatura in viri / Readings:

Hickman, C. P. (2020). *Integrated principles of zoology* (18th ed., str. XIII, 844, 88). McGraw-Hill.

Štrus, J. (2002). *Splošna zoologija* (2. popravljena izd., str. 179). Študentska založba.

Klenovšek, T., & Lipovšek Delakorda, S. (2013). *Splošna zoologija: kompendij z navodili za vaje za študijski program Izobraževalna biologija* (str. 53). Fakulteta za naravoslovje in matematiko, Oddelek za biologijo.

#### Cilji in kompetence:

Študentje bodo pridobili temeljno znanje in razumevanje:

- o osnovnih značilnostih živalskih organizmov in zakonitosti življenja živali z vidika raznolikosti in obenem enotnosti.
- osnovne zgradbe živalskih organizmov in njihovo delovanje na nivoju celic, tkiv, organov, organskih sistemov in skupnosti organizmov.
- osnovnih procesov razvoja in razmnoževanja živalskih organizmov.

Študentje bodo pridobili tudi osnovne spretnosti in praktične sposobnosti mikroskopiranja, sekcije živali, prepoznavanja in poimenovanja histoloških, morfoloških in anatomskih struktur živalskih organizmov.

#### Objectives and competences:

Students will gain fundamental knowledge and understanding of:

- basic characteristics of animal organisms and principles of animal life from the aspect of variation as well as uniformity.
- basic structure of animal organisms and their function on the level of cells, tissues, organs, organ systems and associations of animals.
- of the basic processes in animal development and reproduction.

Students will also gain basic skills and practical abilities for microscopy, dissection of animals, recognition and naming of histological, morphological and anatomical structures of animal organisms.

#### Predvideni študijski rezultati:

#### Intended learning outcomes:

Po opravljenem kurzu naj bi bili študentje sposobni na osnovnem nivoju:

- naštet in opisati glavne značilnosti živali.
- opisati in pojasniti osnovno taksonomsko in filogenetsko delitev živali glede na različne kriterije.
- opisati in razlikovati zunanjo telesno zgradbo glavnih skupin živali.
- opisati in razlikovati živalska tkiva in pojasniti njihovo vlogo in delovanje.
- navesti in pojasniti zgradbo, delovanje in vlogo organov in organskih sistemov pri različnih skupinah živali.
- opisati različne načine in zakonitosti spolnega in nespolnega razmnoževanja in ontogenetskega razvoja.
- samostojno mikroskopirati s svetlobnim mikroskopom.
- po navodilih samostojno in varno secirati manjšo žival.
- prepoznati in poimenovati najpomembnejše strukture na mikroskopskih in makroskopskih preparatih živali.

#### Metode poučevanja in učenja:

- Predavanja
- Laboratorijske vaje

After the accomplished course the students should be, on basic level, able to:

- list and describe the main characteristics of the animals.
- describe and clarify the basic taxonomic and phylogietic division of animals according to different criteria.
- describe and distinguish the external body structure of the main groups of animals.
- describe and distinguish animal tissues and clarify their role and function.
- indicate and clarify the structure, function and role of organs and organ systems in different animal groups.
- describe different types of sexual and asexual reproduction and ontogenetic development.
- independetly use the light microscope.
- following instructions, independently and safely dissect a smaller animal.
- identify and name the most important structures on microscopic and macroscopic preparations of animals.

#### Learning and teaching methods:

- Lectures
- Laboratory excersises

| Načini ocenjevanja:                                                                            |  | Delež (v %) /<br>Weight (in %) | Assessment:                                                                                 |
|------------------------------------------------------------------------------------------------|--|--------------------------------|---------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Laboratorijsko delo</li> <li>• Pisni izpit</li> </ul> |  | 50                             | <ul style="list-style-type: none"> <li>• Laboratory work</li> <li>• Written exam</li> </ul> |
|                                                                                                |  | 50                             |                                                                                             |

#### Reference nosilca / Lecturer's references:

KLENOVŠEK, Tina. Modularity of the dorsal and lateral view of the skull in the European ground squirrel = Modularnost dorzalne in lateralne strani lobanje evropske tekunice. *Acta biologica slovenica : ABS*, ISSN 1408-3671. [Tiskana izd.], 2020, vol. 63, no. 1, str. 17-23, ilustr. [COBISS.SI-ID 27972611]

JANŽEKOVICH, Franc, KLENOVŠEK, Tina. The biogeography of diet diversity of barn owls on Mediterranean islands. *Journal of biogeography*. 2020, vol. 47, iss. 11, str. 2353-2361, ilustr. ISSN 0305-0270. [COBISS.SI-ID 35935747],

KLENOVŠEK, Tina, JAKŠIĆ, Predrag, JANŽEKOVICH, Franc. Size and shape variability of the wing in burnet moth, *Zygaena ephialtes* (L., 1767) (Lepidoptera: Zygaenidae) = Burnet güvesi, *Zygaena ephialtes* (L., 1767) (Lepidoptera: Zygaenidae)'nde kanadın boy ve şekil değişkenliği. *Turkish journal of entomology*. 2022, vol. 46, iss. 2, str. 239-247. ISSN 2536-491X. DOI: [10.16970/entoted.1096288](https://doi.org/10.16970/entoted.1096288). [COBISS.SI-ID 118037251],