



Univerza v Mariboru

Fakulteta za naravoslovje  
in matematiko

**UČNI NAČRT PREDMETA / COURSE SYLLABUS**

**Predmet:** Sistematika in filogenija nevretenčarjev  
**Course title:** Systematics and Phylogeny of Invertebrates

| Študijski program in stopnja<br>Study programme and level                                   | Študijska smer<br>Study field | Letnik<br>Academic year | Semester<br>Semester |
|---|-------------------------------|-------------------------|----------------------|
| Univerzitetni študijski program Ekologija z naravovarstvom, 1. stopnja                      | /                             | 2                       | 3                    |
| Undergraduate university programme Ecology with Nature Conservation, 1 <sup>st</sup> degree | /                             | 2                       | 3                    |

**Vrsta predmeta / Course type**

Obvezni / Compulsory

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

| Predavanja<br>Lectures | Seminar<br>Seminar | Lab. vaje<br>Laboratory work | Klinične vaje<br>work | Terenske vaje<br>Field work | Samost. delo<br>Individ. work | ECTS |
|------------------------|--------------------|------------------------------|-----------------------|-----------------------------|-------------------------------|------|
| 45                     |                    | 30                           |                       | 15                          | 120                           | 7    |

**Nosilec predmeta / Lecturer:**

Dušan Devetak

**Jeziki / Predavanja / Lectures:** Slovenski / Slovenian

**Languages: Vaje / Tutorial:** Slovenski / Slovenian

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

Jih ni.

**Prerequisites:**

No.

**Vsebina:**

**Content (Syllabus outline):**

- Principi živalske sistematike
- Protozoa, praživali
- Porifera, spužve. Placozoa, plakozoji
- Cnidaria, ožigalkarji. Ctenophora, rebrače
- Plathelminthes, ploskavci. Mesozoa.
- "Aschelminthes": Cycloneuralia and Gnathifera
- Mollusca, mehkužci
- Nemertea, nitkarji
- Annelida, kolobarniki. Echiurida, zvezdaši
- Arthropoda, členonožci: Trilobitomorpha, Chelicerata, Mandibulata (Crustacea, Myriapoda, Hexapoda)
- Lophophorata, lofoforati.
- Chaetognatha, ščetinočeljstnice
- Hemichordata, polstrunarji. Chordata, strunarji
- Echinodermata, iglokožci
- Evolucija nevretenčarjev

- Coping with animal diversity
- Protozoa
- Porifera and Placozoa
- Cnidaria and Ctenophora
- Plathelminthes. Mesozoa
- "Aschelminthes": Cycloneuralia and Gnathifera
- Mollusca
- Nemertea
- Annelida. Echiurida.
- Arthropoda: Trilobitomorpha, Chelicerata, Mandibulata (Crustacea, Myriapoda, Hexapoda)
- Lophophorata
- Chaetognatha
- Hemichordata and Chordata
- Echinodermata
- Patterns of Invertebrate Evolution

#### Temeljni literatura in viri / Readings:

Temeljna literatura / Basic:

Brusca, R. C., W. Moore, S. M. Shuster, 2016: Invertebrates. 3rd. ed. Sinauer, Sunderland

Devetak, D., Klokočovnik, V. 2013: Praktikum iz zoologije nevretenčarjev. Fakulteta za naravoslovje in matematiko. Maribor.

Priporočena literatura / Recommended:

Sket, B., M. Gogala, V. Kuštor, 2003: Živalstvo Slovenije. Tehniška založba, Ljubljana

Nielsen, C. 2012: Animal evolution : interrelationships of the living phyla. Oxford University Press, Oxford.

#### Cilji in kompetence:

- Predstaviti temeljne skupine nevretenčarjev
- Podati povezavo med gradbenim planom in načinom življenja
- Predstaviti raznolikost in kompleksnost nevretenčarjev
- Podati evolucijski pristop pri študiju nevretenčarjev

#### Objectives and competences:

- To present fundamental invertebrate groups
- To give the relations between animal "Bauplan" and its environment
- To present diversity and complexity of Animal Kingdom
- To give an evolutionary approach in the study of invertebrates

#### Predvideni študijski rezultati:

#### Intended learning outcomes:

Po uspešno opravljeni učni enoti naj bi bili študenti zmožni:

- opisati, primerjati in razlikovati predstavnike glavnih debel nevretenčarjev;
- prepoznati nevretenčarje do nivoja redov in definirati njihove diagnostične značilnosti;
- opredeliti in zagovarjati glavne evolucijske trende pri deblih nevretenčarjev.

By the end of this course students should be able to:

- describe, discriminate and compare traits of the invertebrate phyla;
- identify invertebrates to the order level and define their diagnostic traits;
- define and justify main evolutionary trends in the invertebrate phyla.

**Metode poučevanja in učenja:**

- Predavanja
- Laboratorijske vaje – individualno eksperimentalno delo
- Terensko delo

**Learning and teaching methods:**

- Lectures
- Laboratory exercises – individual experimental practice
- Field work

Delež (v %) /

Weight (in %)

**Načini ocenjevanja:**

**Assessment:**

|  |                     |   |
|--|---------------------|---|
| <ul style="list-style-type: none"> <li>● Kolokvij iz vaj</li> <li>● Pisni izpit</li> </ul> <p>Pozitivno opravljen kolokvij iz laboratorijskih vaj je je pogoj za pristop k izpitu.</p> | <p>50</p> <p>50</p> | <ul style="list-style-type: none"> <li>● Examination of exercises</li> <li>● Written examination</li> </ul> <p>Positive result of the exercise examination is a prerequisite for the written examination.</p> |
|--|---------------------|---|

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

DEVETAK, Dušan, MIHELAK, Katarina, KOS, Ivan. Gregarines (Apicomplexa: Eugregarinida) of Chilopoda and Diplopoda in Slovenia. *Acta zoologica bulgarica*, ISSN 0324-0770, 2019, vol. 71, no. 1, str. 121-128, ilustr. [COBISS.SI-ID [5037903](#)]

DEVETAK, Dušan. *Neuropterida of Slovenia*. College Station: Texas A & M University, 2017. <http://lacewing.tamu.edu/Slovenia/Main>. [COBISS.SI-ID [23694856](#)]

RUECKERT, Sonja, DEVETAK, Dušan. Gregarines (Apicomplexa, Gregarinasina) in psocids (Insecta, Psocoptera) including a new species description and their potential use as pest control agents. *European journal of protistology*, ISSN 0932-4739, 2017, vol. 60, str. 60-67, ilustr., doi: [10.1016/j.ejop.2017.05.007](https://doi.org/10.1016/j.ejop.2017.05.007). [COBISS.SI-ID [23354376](#)]

DEVETAK, Dušan, KLOKOČOVNIK, Vesna. The feeding biology of adult lacewings (Neuroptera) : a review. *Trends in entomology*, ISSN 0972-4761, 2016, vol. 12, str. 29-42, ilustr. [COBISS.SI-ID [22624264](#)]

PODLESNIK, Jan, KLOKOČOVNIK, Vesna, KLENOVŠEK, Tina, JANŽEKOVIČ, Franc, DEVETAK, Dušan. First records of spongillaflies (Neuroptera: Sisyridae) in Serbia and Bosnia and Herzegovina, with notes on their occurrence in the Balkan countries. *Turkish journal of zoology*, ISSN 1300-0179, 2017, vol. 41, iss. 1, str. 164-169, ilustr., doi: [10.3906/zoo-1508-48](https://doi.org/10.3906/zoo-1508-48). [COBISS.SI-ID [22917640](#)]