



Univerza v Mariboru

Fakulteta za naravoslovje  
in matematiko

### UČNI NAČRT PREDMETA / COURSE SYLLABUS

<b>Predmet:</b>	Izbrana poglavja iz gozdne entomologije
<b>Course title:</b>	Selected Topics in Forest Entomology

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Doktorski študij Ekološke znanosti, 3. stopnja		1. ali 2.; 1st or 2nd	1. 2. ali 3. ; 1st, 2nd or 3rd
Doctoral Study Ecological Sciences, 3rd degree			

**Vrsta predmeta / Course type**

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

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Lab. vaje Laboratory work	Terenske vaje Field work	Samost. delo Individ. work	ECTS
5	5				140	5

**Nosilec predmeta / Lecturer:**

**Jeziki / Predavanja / Lectures:**   
**Languages: Vaje / Tutorial:**

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

Poznavanje členonožcev, ekologije in biodiverzitete na ravni univerzitetnega programa

**Prerequisites:**

Knowledge of arthropods, ecology and biodiversity at graduate level

**Vsebina:**

Obravnavana so izbrana poglavja iz naslednjih sklopov. Pri predmetu študenti pridobijo podrobna znanja o taksonomiji, morfologiji, biologiji in ekologiji žuželk, ki živijo v gozdu. Spoznajo ekološko in ekonomsko pomembne vrste ter varstvo biodiverzitete žuželk.

- Gozd kot primarni ekosistem (organizacija, delovanje, ekološke sukcesije biocenoz, zoocenoz, biotsko in ekološko ravnotežje, avteologija ter demekologija žuželk)
- Najpomembnejše skupine žuželk v gozdovih

**Content (Syllabus outline):**

Selected topics in the following chapters are discussed. Students learn taxonomy, morphology, biology and ecology of insects in forests in detail. They learn about ecologically and economically important species, and the insect diversity conservation.

- A forest as a primary ecosystem (organization, functioning and ecological successions of biocenoses, zoocenoses, biotic and ecological equilibrium, autecology and demecology of insects)

- srednje Evrope ter njihov gospodarski pomen
- Osnovne značilnosti skupin Apterygota ter Pterygota (Coleoptera: Scolytidae, Buprestidae, Cerambycidae, Curculionidae; Hymenoptera ter Lepidoptera)
- Biologija in ekologija vrst, ki povzročajo motnje v gozdovih, predvsem s prehranjevanjem ter ukrepanje v smislu varstva gozda
- Invazivne in karantenske vrste žuželk, ki so nevarni za naše gozdove
- Varstvo biodiverzitete žuželk

- The most important groups of insects in forests of central Europe and their economic importance
- General characteristics of insects groups as Apterygota and Pterygota (Coleoptera: Scolytidae, Buprestidae, Cerambycidae, Curculionidae, Hymenoptera and Lepidoptera)
- Biology and ecology of insects which cause disturbances in forests, particularly by feeding, and preventive measures in the sense of forest protection
- Invasive and quarantine insects, which are dangerous for our forests
- Insect diversity conservation

### Temeljni literatura in viri / Readings:

- Anderson, D. T. (ed.), 2001: Invertebrate zoology.- Second edition. Oxford University Press
- Freude, H., K. W. Harde, G. A. Lohse ( eds.), 1965-1984: Die Käfer Mitteleuropas.- Band I-XI, Goecke & Evers Verlag, Krefeld.
- Groom, M. J., G. K. Meffe, C. R. Carroll (Eds.), 2005: Principles of Conservation Biology.- Third Edition, Sinauer.
- Jurc, M., 2008: Gozdna zoologija.- 2. izdaja, Univerzitetni učbenik, Univerza v Ljubljani, Biotehniška fakulteta, Oddelek za gozdarstvo in obnovljive gozdne vire.
- Lieutier, F., K. R. Day, A. Battisti, J.-C. Grégoire, H. F. Evans, 2004: Bark and Wood Boring Insects in Living Trees in Europe, a Synthesis.- Kluwer Academic Publishers.
- Ruppert, E. E. and D. R. Barnes, 1996: Invertebrate zoology.- Sixth edition. Saunders College Publishing.
- Samways, M., 2005: Insect Diversity Conservation. Cambridge University Press.
- Speight, M. C. D., 1989: Saproxylic invertebrates and their conservation. Strasbourg, Council of Europe.
- Stockland, J. N., J. Siitonen, B. G. Johnsson, 2012. Biodiversity in Dead Wood. Cambridge University Press. New York.

### Cilji in kompetence:

- Podrobno spoznajo entomofavno gozdnega ekosistema, predvsem najpomembnejše herbivore vrste žuželk
- Z razumevanjem bionomije, avteologije in demekologije različnih žuželčnih vrst študentje podrobno spoznajo njihovo vlogo in pomen v gozdnem sistemu
- Podrobno razumejo potrebe po njihovem ohranjanju

### Objectives and competences:

- Percieving of the entomofauna of the forest ecosystem in detail, including the most important herbivorous species of insects
- By understanding the bionomy, autecology, and demecology of various insect species in detail, students learn about their role and importance in forest system
- Understanding in detail the need for their conservation

### Predvideni študijski rezultati:

#### Znanje in razumevanje

- Podrobno usvojijo znanja o živalski komponenti gozdnega ekosistema ter poglobljeno znanje o gozdni entomofavni
- S terenskim delom študentje podrobno spoznajo metode nabiranja entomološkega materiala, arhiviranja ter določanja žuželk
- Podrobno razumejo pomen entomofavne v biosferi in potrebe po njeni ohranitvi

### Intended learning outcomes:

#### Knowledge and Understanding

- They acquire advanced knowledge of animal component of forest ecosystem and advanced knowledge of entomofauna
- During field work students learn in detail methods of collecting entomological material, making archives, and identifying insect species
- They understand in detail significance of entomofauna in biosphere, and needs for it conservation

Prenesljive/ključne spretnosti in drugi atributi:

- Podrobno povezovanje bioloških znanj in znanj varstvene biologije

Transferable/Key Skills and other attributes:

- Combining biological and conservation biology knowledge in detail

**Metode poučevanja in učenja:**

- Predavanja
- Seminarska naloga

**Learning and teaching methods:**

- Lectures
- Seminar essay

Delež (v %) /

**Načini ocenjevanja:**

Weight (in %)

**Assessment:**

- Seminarska naloga
- Pisni izpit

50 %  
50 %

- Seminar essay
- Written exam

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

1. DEVETAK, Dušan, KLOKOČOVNIK, Vesna, RAUSCH, Hubert, JANŽEKOVIČ, Franc. Fauna of the Neuropterida (Raphidioptera, Neuroptera) of the Protected area Jasen, Macedonia : a summer flash. *Turkish journal of zoology*, ISSN 1300-0179, 2014, str. 1-13, ilustr. <http://journals.tubitak.gov.tr/havuz/zoo-1305-43.pdf>, doi: [10.3906/zoo-1305-43](https://doi.org/10.3906/zoo-1305-43). [COBISS.SI-ID [20717576](#)], [JCR, SNIP]
2. DEVETAK, Dušan, PODLESNIK, Jan, JANŽEKOVIČ, Franc. Antlion Dendroleon pantherinus (Fabricius, 1787) (Neuroptera: Myrmeleontidae) in Slovenia = Volkec vrste Dendroleon pantherinus (Fabricius, 1787) (Neuroptera: Myrmeleontidae) v Sloveniji. *Acta entomologica slovenica*, ISSN 1318-1998, dec. 2010, vol. 18, št. 2, str. 159-162, ilustr. [COBISS.SI-ID [18005256](#)]
3. DEVETAK, Dušan. Neuroptera in oak forests in the submediterranean district of Slovenia. *Acta zoologica Academiae Scientiarum Hungaricae*, ISSN 1217-8837, 2002, vol. 48, suppl. 2, str. 67-73. [COBISS.SI-ID [12137480](#)], [WoS do 7. 6. 2006: št. citatov (TC): 0, čistih citatov (CI): 0, normirano št. čistih citatov (NC): 0, Scopus do 31. 3. 2011: št. citatov (TC): 0, čistih citatov (CI): 0, normirano št. čistih citatov (NC): 0]
4. STELZL, M..., DEVETAK, Dušan. Neuroptera in agricultural ecosystems. V: PAOLETTI, Mauriyio G. (ur.). *Invertebrate biodiversity as bioindicators of sustainable landscapes : practical use of invertebrates to assess sustainable land use*. 2nd impression. Amsterdam [et al.]: Elsevier, 2001, str. 305-321, ilustr. [COBISS.SI-ID [11324168](#)]