



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Gozdna entomologija
Course title:	Forest Entomology

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Biologija in ekologija z naravovostvom, 2. stopnja	/	1/2	Poletni/ Zimski
Biology and Ecology with Nature Conservation, 2 nd cycle	/	1/2	Summer/ Winter

Vrsta predmeta / Course type

Izbirni / Elective

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individual work	ECTS
15	15			15	135	6

Nosilec predmeta / Lecturer:

Maja Jurc

Jeziki /

Predavanja / Lectures: Slovenski / Slovenian

Languages:

Vaje / Tutorial: Slovenski / Slovenian

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

Jih ni.

Prerequisites:

No prerequisites.

Vsebina:

Content (Syllabus outline):

Pri predmetu študenti pridobijo znanja o taksonomiji, morfologiji, biologiji in ekologiji žuželk, ki živijo v gozdu. Spoznajo ekološko in ekonomsko pomembne vrste ter osnove varstva biodiverzitete žuželk.

Kratek povzetek vsebin

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

Students learn taxonomy, morphology, biology and ecology of insects in forests. They learn about ecologically and economically important species, and about principles of insect diversity conservation.

Short abstract of contents:

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

Temeljna literatura / Basic literature:

– Jurc, M., 2011: Gozdna zoologija (3. natis). Univerza v Ljubljani, Biotehniška fakulteta, Oddelek za gozdarstvo in obnovljive gozdne vire.

Priporočena literatura / Recommended literature:

– Gullan, P.J., P.S. Cranston, 2015: The Insects: An Outline of Entomology 5th Edition. Wiley-Blackwell, West Sussex, UK.

– Pedigo, L.P., M.E. Rice, 2015: Entomology and Pest Management, Sixth Edition. Waveland Press, Inc, Long Grove, IL.

– 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.

– Speight, M. C. D., 1989: Saproxylic invertebrates and their conservation. Strasbourg, Council of Europe.

– Wermelinger, B., 2017: Insekten im Wald – Vielfalt, Funktionen und Bedeutung. Eidg. Forschungsanstalt WSL, Birmensdorf; Haupt, Bern.

Cilji in kompetence:

Objectives and competences:

- Spoznajo entomofavno gozdnega ekosistema, predvsem najpomembnejše herbivore vrste žuželk
- Z razumevanjem bionomije, avtekologije in demekologije različnih žuželčnih vrst študentje spoznajo njihovo vlogo in pomen v gozdnem sistemu
- Razumejo potrebe po njihovem ohranjanju
- Povezovanje bioloških znanj in znanj varstvene biologije

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

Predvideni študijski rezultati:

- Po uspešno opravljeni učni enoti naj bi bili študenti zmožni:
- Razpravljati o temeljnih znanjih o živalski komponenti gozdnega ekosistema ter poglobljenih znanjih o gozdnih entomofavnih vrstah
 - Uporabljati metode nabiranja entomološkega materiala, arhiviranja ter določanja pomembnejših žuželk z uporabo določevalnih ključev
 - Razumeti pomen entomofavne v biosferi in potrebe po njeni ohranitvi

Intended learning outcomes:

- By the end of this course students should be able to:
- Discuss basic knowledge of animal component of forest ecosystem and advanced knowledge of entomofauna
 - use methods of collecting entomological material, making archives, and identifying most important insect species using determination keys
 - understand significance of entomofauna in biosphere, and needs for its conservation

Metode poučevanja in učenja:

- Predavanja
- Terenske vaje
- Seminarjska naloga

Learning and teaching methods:

- Lectures
- Field work
- Seminar essay

Delež (v %) /

Weight (in %)

Načini ocenjevanja:

Assessment:

<p>Način (pisni izpit, ustno izpraševanje, naloge, projekt):</p> <ul style="list-style-type: none"> - Seminarjska naloga - Pisni izpit 	<p>50</p> <p>50</p>	<p>Type (examination, oral, coursework, project):</p> <ul style="list-style-type: none"> - Seminar essay - Written exam
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Reference nosilca / Lecturer's references:

NÈVE REPE, Andreja, DE GROOT, Maarten, JURC, Maja. Assemblages of ophiostomatoid fungi vectored by *Ips amitinus* (Coleoptera: Scolytinae) on Norway spruce depend on colonization time, position on the host tree and development stage = Vektorski odnos ofiostomatoidnih gljiva i *Ips amitinus* (Coleoptera: Scolytinae) na smreci ovisno o vremenu naseljavanja, položaju na stablu i fazi razvoja. *Šumarski list*, ISSN 0373-1332, 2018, vol. 142, no. 3/4, str. 171-178, graf. prikazi. https://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=293580. [COBISS.SI-ID [5094310](#)]

JURC, Maja, BOJOVIĆ, Srđan, JURC, Dušan. Non-native insects in urban and forest areas of Slovenia and the introduction of *Torymus sinensis* with *Dryocosmus kuriphilus*. *Open journal of forestry*, ISSN 2163-0437, 2017, vol. 7, vol. 7, str. 416-427, ilustr. <https://doi.org/10.4236/ojf.2017.74025>, doi: [10.4236/ojf.2017.74025](https://doi.org/10.4236/ojf.2017.74025). [COBISS.SI-ID [4893094](#)]

PODLESNIK, Jan, MIHAJLOVIĆ, Ljubodrag, JURC, Maja. A two-year study of parasitoid entomofauna associated with spruce bark beetles (Coleoptera: Curculionidae) in the altimontane belt of Slovenia (Pohorje). *Phytoparasitica*, ISSN 0334-2123, 2017, vol. 45, no. 2, str. 135-145, doi: [10.1007/s12600-017-0574-1](https://doi.org/10.1007/s12600-017-0574-1). [COBISS.SI-ID [23042056](#)]

BADANO, Davide, BALESTRIERI, Rosario, BASILE, M., BIRTELE, Daniele, CISTRONE, L., COREZZOLA, Serena, COSTA, M., DE GROOT, Maarten, JURC, Maja, MASON, Franco, METERC, Gregor, POSILLICO, Mario, ROMANO, A., ZAPPONI, Livia. Assessing indicators of animal diversity. *Annals of Silvicultural Research*, ISSN 2284-354X, 2016, vol. 40, iss. 1, str. 88-97. <http://dx.doi.org/10.12899/asr-1214>, doi: [10.12899/asr-1214](https://doi.org/10.12899/asr-1214). [COBISS.SI-ID [4501670](#)]

JURC, Maja, HAUPTMAN, Tine, PAVLIN, Roman, BORKOVIČ, Danijel. Target and non-target beetles in semiochemical-baited cross vane funnel traps used in monitoring *Bursaphelenchus xylophilus* (PWN) vectors in pine stands. *Phytoparasitica*, ISSN 0334-2123, 2016, vol. 44, iss. 2, str. 151-164, ilustr. <http://dx.doi.org/10.1007/s12600-016-0515-4>, doi: [10.1007/s12600-016-0515-4](https://doi.org/10.1007/s12600-016-0515-4). [COBISS.SI-ID [4367014](#)]