



Univerza v Mariboru



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Fakulteta za naravoslovje in
matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Gozdna entomologija
Course title:	<i>Forest Entomology</i>

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

Vrsta predmeta / Course type Izbirni / Elective

Univerzitetna koda predmeta / University course code:

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

Nosilec predmeta / Lecturer: Maja Jurc

Jeziki / Languages:

Predavanja / Lectures:	Slovensko / Slovene
Vaje / Tutorial:	Slovensko / Slovene

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

Poznavanje biodiverzitete Slovenije.

Knowledge of biodiversity of Slovenia.

Vsebina:

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

Content (Syllabus outline):

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:

- 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., 2005: Gozdna zoologija.- 1. 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.

Cilji in kompetence:

Objectives and competences:

- Spoznajo entomofavno gozdnega ekosistema, predvsem najpomembnejše herbivore vrste žuželk
- Z razumevanjem bionomije, avteologije 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
- Combinig biological and conservation biology knowledge

Predvideni študijski rezultati:

Znanje in razumevanje:

- Usvojijo temeljna znanja o živalski komponenti gozdnega ekosistema ter poglobljeno znanje o gozdni entomofavni
- S terenskim delom študentje spoznajo metode nabiranja entomološkega materiala, arhiviranja ter določanja pomembnejših žuželk z uporabo določevalnih ključev
- Razumejo pomen entomofavne v biosferi in potrebe po njeni ohranitvi

Intended learning outcomes:

Knowledge and understanding:

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

Metode poučevanja in učenja:

- Predavanja
- Terenske vaje
- Seminarska naloga

Learning and teaching methods:

- Lectures
- Field work
- Seminar essay

Načini ocenjevanja:	Delež (v %) / Weight (in %)	Assessment:
Način (pisni izpit, ustno izpraševanje, naloge, projekt)		Type (examination, oral, coursework, project):
• Seminarska naloga	50	• Seminar essay
• Pisni izpit	50	• Written exam

Reference nosilca / Lecturer's references:

JURC, Maja, BOJOVIC, Srdjan, FERNÁNDEZ, Mercedes Fernández, JURC, Dušan. The attraction of cerambycids and other xylophagous beetles, potential vectors of *Bursaphelenchus xylophilus*, to semio-chemicals in Slovenia. *Phytoparasitica*, 2012, vol. 40, no. 4, str. 337-349, ilustr. <http://dx.doi.org/10.1007/s12600-012-0234-4>, doi: [10.1007/s12600-012-0234-4](http://dx.doi.org/10.1007/s12600-012-0234-4). [COBISS.SI-ID [3368358](http://dx.doi.org/10.1007/s12600-012-0234-4)]

JURC, Maja. Lipin moljac miner (*Phyllonorycter Issikii*) u Sloveniji = The Lime leafminer (*Phyllonorycter Issikii*) in Slovenia. *Šumar. list*, 2012, god. 136, br. 3/4, str. 119-127, ilustr. <http://hrcak.srce.hr/file/120568>. [COBISS.SI-ID [3356070](#)]

OGRIS, Nikica, JURC, Maja. Sanitary felling of Norway spruce due to spruce bark beetles in Slovenia : a model and projections for various climate change scenarios. *Ecol. model.* [Print ed.], 2010, vol. 221, no. 2, str. 290-302, ilustr. <http://dx.doi.org/10.1016/j.ecolmodel.2009.05.015>, doi: [10.1016/j.ecolmodel.2009.05.015](https://doi.org/10.1016/j.ecolmodel.2009.05.015). [COBISS.SI-ID [2415014](#)]

JURC, Maja. Nekatere škodljive domače in tujerodne žuželke v gozdovih na območju Ljubljane = Some harmful native and non-native insects in the forests of the Ljubljana area. *Gozd. vestn.*, 2010, letn. 68, št. 5/6, str. 321-329, ilustr. [COBISS.SI-ID [2982310](#)]

JURC, Maja, BOJOVIĆ, Srdjan, KOMJANC, Boštjan, KRČ, Janez. Xylophagous entomofauna in branches of oaks (*Quercus* spp.) and its significance for oak health in the Karst region of Slovenia. *Biologia*, 2009, vol. 64, no. 1, str. 130-138, ilustr. <http://dx.doi.org/10.2478/s11756-009-0024-8>, doi: [10.2478/s11756-009-0024-8](https://doi.org/10.2478/s11756-009-0024-8). [COBISS.SI-ID [2331046](#)]