Univerza v Mariboru

Fakulteta za naravoslovje in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	**Urbana ekologija**
Course title:	**Urban Ecology**

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.**	**1.- 4.**
Doctoral Study Ecological Sciences, 3rd cycle		**1st or 2nd**	**1st-4th**

Vrsta predmeta / Course type	Izbirni/Elective
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
10	**5**			**15**	**150**	**6**

Nosilec predmeta / Lecturer:	Mirjana Šipek

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

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisits:**
Za študente s predznanjem ekologije.	For students with ecological backgrounds.

Vsebina:	**Content (Syllabus outline):**
Predmet naslavlja naslednje tematike: • umetno ustvarjeni fizični pogoji; • vzorci urbane biotske raznovrstnosti; • procesi, ki vplivajo na urbano biotsko raznovrstnost; • ekosistemi, ekosistemske storitve in družbeni sistemi v urbanih pokrajinah; • urbano oblikovanje, načrtovanje in upravljanje: lekcije iz ekologije.	The course addresses the following topics: • man-made physical conditions; • patterns of urban biodiversity; • processes affecting urban biodiversity; • ecosystems, ecosystem services, and social systems in urban landscapes; • urban design, planning, and management: lessons from ecology.

Temeljna literatura in viri / Readings:

- Niemelä, J., Breuste, J. H., Guntenspergen, G., McIntyre, N. E., Elmqvist, T. & James, P. (2011). *Urban Ecology. Patterns, Processes, and Applications.* Oxford University Press.

Dodatna študijska literatura:

- Marzluff, J. M., Shulenberger, E., Endlicher, W., Alberti, M., Bradley,G., Ryan, C., Simon, U. & ZumBrunnen, C. (Ur.). (2008). *Urban Ecology, An International Perspective on the Interaction Between Humans and Nature*. Springer Nature.
- Šipek, M. & Šajna, N. (2024). Lowland forest fragment characteristics and anthropogenic disturbances determine alien plant species richness and composition. *Biological Invasions*, 26, 1595-1614.
- Horvat, E., Šipek, M. & Šajna, N. (2024). Urban hedges facilitate spontaneous woody plants. *Urban Forestry and Urban Greening*, 96, 128336.
- Šipek, M., Horvat, E. & Šajna, N. (2022). First records of seed beetles *Megabruchidius dorsalis* (Fåhræus, 1839) and *M. tonkineus* (Pic, 1904) from three Balkan countries. *Bioinvasions Records*, 11, 101-109.

Cilji in kompetence:

- Pridobitev osnovnih znanj o ekoloških procesih in odnosih v urbanih ekosistemih.
- Vedenje o vplivu urbanizacije na fizične, kemijske in biološke značilnosti ekosistemov.
- Povzemanje in sintetiziranje ključnih izsledkov ekoloških raziskav v urbanem okolju.
- Načrtovanje samostojne ekološke raziskave v urbanem okolju.

Objectives and competences:

- Develop basic knowledge of ecological processes and relationships in urban ecosystems.
- Learn how urbanization affects ecosystems' physical, chemical, and biological characteristics.
- Summarize and synthesise key results of ecological research in an urban environment.
- Independent planning of ecological research in an urban environment.

Predvideni študijski rezultati:

Znanje in razumevanje:

- ekoloških načel, ki oblikujejo urbana okolja;
- interakcij med človeškimi in naravnimi procesi v mestih;
- izzivov v urbanih ekosistemih, kot so podnebne spremembe, svetlobna in kemična onesnaženost in njihov vpliv na organizme v urbanem okolju.

Intended learning outcomes:

Knowledge and understanding:

- of ecological principles that shape urban environments;
- of interactions between human and natural processes in cities;
- of challenges in urban ecosystems, such as climate change, pollution, and their effects on organisms in an urban environment.

Metode poučevanja in učenja:

Learning and teaching methods:

• Predavanja • Seminar • Terenske vaje	• Lectures • Seminar • Fieldwork

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
pisni izpit	50%	written exam
terensko delo	20%	fieldwork
študija primera	30%	case study

Reference nosilca / Lecturer's references:

- Šipek, M. & Šajna, N. (2024). Lowland forest fragment characteristics and anthropogenic disturbances determine alien plant species richness and composition. *Biological Invasions*, 26, 1595-1614.
- Horvat, E., Šipek, M. & Šajna, N. (2024). Urban hedges facilitate spontaneous woody plants. *Urban Forestry and Urban Greening*, 96, 128336.
- Šipek, M., Horvat, E. & Šajna, N. (2023). Eastward range expansion of the ragweed leaf beetle (*Ophraella Communa* Lesage, 1986) (Coleoptera, Chrysomelidae) in Slovenia. *Bioinvasions Records*, 12, 615-623.
- Šipek, M., Ravnjak, T. & Šajna, N. (2023). Understorey species distinguish late successional and ancient forests after decades of minimum human intervention: a case study from Slovenia. *Forest Ecosystems*, 10, 100096.
- Šipek, M., Horvat, E. & Šajna, N. (2022). First records of seed beetles *Megabruchidius dorsalis* (Fåhræus, 1839) and *M. tonkineus* (Pic, 1904) from three Balkan countries. *Bioinvasions Records*, 11, 101-109.