



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Organizmi v spreminjajočem se okolju
Course title:	Organisms in a changing environment

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Enovit magistrski študijski program Predmetni učitelj, 2. stopnja	/	3. ali 4.	5. ali 8.
Unified master's study program »Subject Teacher«, 2nd cycle	/	3rd or 4th	5th or 8th

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:

Nina Šajna

Jeziki /

Languages:

Predavanja /

Lectures:

Slovenščina/ Slovenian

Vaje / Tutorial:

Slovenščina/ Slovenian

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

Prerequisites:

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Vsebina:

Ekologi želijo razumeti dinamike organizmov in njihove odnose z okoljem. Okoljske spremembe, ki imajo močan vpliv na fizikalne in biološke sisteme, so v zadnjih stoletjih predvsem povzročene s strani človeka in večanjem človeške populacije. Zato je ključno razumevanje vpliva človekovih dejavnosti: povečane emisije toplogrednih plinov, ki povzročajo globalno segrevanje, nalaganje dušika, uničevanje habitatov, drobljenje krajine, prekomerna raba ekosistemskih uslug in vnos tujerodnih vrst. Posebej zaskrbljujoč je učinek na biodiverzitetu in ekosistemske usluge.

Content (Syllabus outline):

Ecologists aim to understand the dynamics of organisms and their relationships with their environment. In the last centuries environmental changes, which have profound impact on physical and biological systems, have been mainly induced by human population development. Therefore, it is crucial to understand the impact of human activities: increases in greenhouse gas emissions, causing global climate warming, nitrogen deposition, habitat destruction, landscape fragmentation, overuse of ecosystem services and alien species introductions. Of particular concern is the effect on biological diversity and ecosystem services.

Temeljni literatura in viri / Readings:**Temeljna literatura / Basic readings:**

- Begon, M., Townsend C.R., Harper J.L., 2021: Ecology: From Individuals to Ecosystems. 5th edition, Wiley & Sons. (druge izdaje/other editions)
 - Bownam, W.D., Hacker, S.D.:2020: Ecology.5th edition, Sinauer/Oxford University Press (druge izdaje/other editions)

Priporočena literatura/ Recommended literature:

- <http://www.californiaeei.org/curriculum/>
- Rannow S., Neubert M., 2014: Managing protected areas in Central and Eastern Europe under climate change, (Advances in global change research 58). Springer

Cilji in kompetence:

- Pojasnijo pomen biodiverzitet, zgradbe in dinamike ekosistemov za usluge, ki jih naša družba prejema od naravnih in s strani človeka upravljanih ekosistemov.
- Analizirajo in diskutirajo, kako zagotoviti okoljsko in družbeno trajnost glede na globalno povečano človekovo populacijo in rabo virov.

Objectives and competences:

- Explain the importance of biological diversity, structure and dynamics of ecosystems for the benefits that our society receives from natural and managed ecosystems.
- Analyse and discuss how to assure environmental and social sustainability in the face of global increases in human consumption and population.

Predvideni študijski rezultati:**Znanje in razumevanje:**

- pomena in razlogov za nastanek biodiverzitet;
- učinkov biodiverzitet na stabilnost ekosistemov;

Intended learning outcomes:**Knowledge and understanding:**

- of basic reasons for biotic diversity;
- of how biodiversity affects stability and functioning of ecosystems;

<ul style="list-style-type: none"> • ekosistemskih uslug, ki jih naša družba prejema od naravnih in s strani človeka upravljanjih ekosistemov; • vplivov človekove aktivnosti na biodiverziteti; • različnih tehnik upravljanja z naravo za potrebe varstva biodiverzitet. 	<ul style="list-style-type: none"> • of ecosystem services which our society receives from natural and managed ecosystems; • of the impact of human activities on biodiversity; • of a range of techniques used to manage nature for biodiversity conservation.
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Metode poučevanja in učenja:

<ul style="list-style-type: none"> • Predavanja • Seminar • Laboratorijske vaje • Individualno delo

Learning and teaching methods:

<ul style="list-style-type: none"> • Lectures • Seminar • Laboratory work • Individual work

Delež (v %) /

Načini ocenjevanja:

Weight (in %)

Assessment:

<p>Način (pisni izpit, ustno izpraševanje, naloge, projekt):</p> <ul style="list-style-type: none"> • Terensko delo (prisotnost, dnevnik, pisni test) pogoj za pristop k izpitu • Seminarsko delo • Pisni izpit 	<p>Delež (v %) / Weight (in %)</p> <p>20%</p> <p>80%</p>	<p>Type (examination, oral, coursework, project):</p> <ul style="list-style-type: none"> • Field work (attendance, reports, written exam) mandatory for final exam • Seminar work • Written exam
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Reference nosilca / Lecturer's references:

<ul style="list-style-type: none"> • ŠAJNA, Nina, UREK, Tina, KUŠAR, Primož, ŠIPEK, Mirjana. The importance of thermally abnormal waters for bioinvasions - a case study of <i>Pistia stratiotes</i>. <i>Diversity</i>. 2023, vol. 15, iss. 3, [article no.] 421, 22 str. • ŠIPEK, Mirjana, RAVNJAK, Tim, ŠAJNA, Nina. Understorey species distinguish late successional and ancient forests after decades of minimum human intervention : a case study from Slovenia. <i>Forest ecosystems</i>. 2023, vol. 10, [article no.] 100096, 10 str • JELINČIĆ, Antun, ŠAJNA, Nina, ZGORELEC, Željka, PERČIN, Aleksandra. Bracken-induced increase in soil P availability, along with its high P acquisition efficiency, enables it to invade P-deficient meadows. <i>Journal of plant ecology</i>. 2022, vol. 15, iss. 4, str. 783-794. • ŠIPEK, Mirjana, ŠAJNA, Nina. Public opinions and perceptions of peri-urban plant invasion: the role of garden waste disposal in forest fragments. <i>Management of Biological Invasions</i>. 2020, vol. 11, iss. 4, str. •
