Univerza v Mariboru

FAKULTETA ZA NARAVOSLOVJE IN MATEMATIKO
Koroška cesta 160
2000 Maribor, Slovenija
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UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	Ekotoksikologija
Course title:	Ecotoxicology

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	2/3
Biology and ecology with nature conservation, 2nd level		1/2	2/3

Vrsta predmeta / Course type	izbirni
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**
30			15		135	6

Nosilec predmeta / Lecturer:	Julija Volmajer Valh

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

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

Vsebina:	**Content (Syllabus outline):**
Osnovni pojmi v ekotoksikologiji Tipi onesnaževanja okolja: • Kovine • Nekovine • Pesticidi • Kemikalije (REACH) • Zdravila, detergenti	Basic definitions in ecotoxicology Different pollutants: • Metals • Non-metals • Pesticides • Chemicals (REACH) • Pharmaceutical compounds, detergents

Načini vnosa v ekosisteme. Razporejanje onesnaževal v ekosistemih. Učinki onesnaževanja na nivoju celice, organizma, populacije in ekosistema. Študij osnovnih mehanizmov delovanja strupov. Ekotoksikološki testi. Ocena tveganja.	Entry of pollutants in ecosystems. Distribution of pollutants on cell, organisms, population and ecosystem levels. Basic mechanisms of pollutants activities. Testing in ecotoxicology. Risk assessment.

Temeljni literatura in viri / Readings:

Visser, J.E., Ecotoxicology Around the Globe, 2010, Nova Science Publishers, Incorporated

Cilji in kompetence:	**Objectives and competences:**
Razumeti osnovne definicije v ekotoksikologiji. Identificirati različne tipe onesnaževal. Preučiti učinke onesnaženja na populacije in ekosisteme. Razumeli načine testiranj v ekotoksikologiji. Zmožnost samostojne izvedbe zastavljenih testov toksičnosti.	Understand the basic definitions of ecotoxicology. Identify different types of pollutants. Investigate the effects of pollution on populations and ecosystems. Understand the testing methods in ecotoxicology. Be able to carry out specific toxicity tests independently.

Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: Ob koncu tega predmeta bodo študenti znali: Povezati učinke onesnaževal na populacije in ekosisteme. Pojasniti pojme v ekotoksikologiji. Argumentirati izbrane mehanizme v ekotoksikologiji. Izvesti določene teste toksičnosti in interpretirati dobljene rezultate testov. :	Knowledge and understanding: At the end of this course students will be able to: Relate the effects of pollutants on populations and ecosystems. Explain concepts of ecotoxicology. Explain selected mechanisms in ecotoxicology. Carry out specific toxicity tests and interpret the test results obtained. •

Metode poučevanja in učenja:	**Learning and teaching methods:**
• Predavanja • Laboratorijske vaje	• Lectures • Lab work

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**

Način (pisni izpit, ustno izpraševanje, naloge, projekt) • Pisni izpit • Laboratorijsko delo •	**80** **20**	Type (examination, oral, coursework, project): • Written exam • Lab work •

Reference nosilca / Lecturer's references:

TUŠEK, Lidija, FRAS ZEMLJIČ, Lidija, VONČINA, Bojana, VOLMAJER VALH, Julija. Application of the catalyst MnTACN onto cotton fabric as a novel approach in the H_2O_2/UV$\diamond$2$\diamond$2/$\diamond\diamond$ decolourisation process. *Fibers and polymers*. Published: 21 August 2022, str. 1-10, ilustr. ISSN 1229-9197. DOI: 10.1007/s12221-022-4337-3. [COBISS.SI-ID 121016579]

VUJANOVIĆ, Annamaria, PUHAR, Jan, ČOLNIK, Maja, PLOHL, Olivija, VIDOVIČ, Timotej, VOLMAJER VALH, Julija, ŠKERGET, Mojca, ČUČEK, Lidija. Sustainable industrial ecology and environmental analysis: a case of melamine etherified resin fibres. Journal of cleaner production. [Print ed.]. 1 Oct. 2022, vol. 369, 13 str. ISSN 0959-6526. DOI: 10.1016/j.jclepro.2022.133301. [COBISS.SI-ID 118212611]
financer: ARRS, Projekt, J7-3149, SI, Design and Management of Sustainable Plastic Value Chains to Support a Circular Economy Transition; ARRS, Program, P2-0412, SI; ARRS, Program, P2-0421, SI; ARRS, Projekt, N2-0138, SI; Ministry of Education, Science and Sport of Republic of Slovenia and the European Regional Development Fund, Projekt, 5442–1/2018/106, SI

ERJAVEC, Alen, PLOHL, Olivija, FRAS ZEMLJIČ, Lidija, VOLMAJER VALH, Julija. Significant fragmentation of disposable surgical masks—enormous source for problematic micro/nanoplastics pollution in the environment. Sustainability. Oct. 2022, vol. 14, iss. 19 (12625), str. 1-20. ISSN 2071-1050. https://www.mdpi.com/2071-1050/14/19/12625, DOI: 10.3390/su141912625. [COBISS.SI-ID 124689155]
LOBNIK, Aleksandra, VONČINA, Bojana, MAJCEN LE MARECHAL, Alenka, GUTMAHER, Andreja, POBERŽNIK, Mojca, VAJNHANDL, Simona, VOLMAJER VALH, Julija, KOŠAK, Aljoša, KLASINC, Aljaž, BRAČKO, Tara, ŠKODIČ, Lidija, ŠIMON, Ernest, TROPPENZ, Vittoria, LUTZ, Walter, TYLER, David J., KOKOSSIS, Antonis, DAURIAT, Arnaud, DELAHAY, Richard J. *A new circular economy concept for textiles and chemicals : H2020project final report : project duration: 01.06.2015 - 31.05.2019 (48 months)*. [Maribor [etc.]: s.n.], 2019. 91 f., ilustr. [COBISS.SI-ID 58593027]

VOLMAJER VALH, Julija, PERŠIN FRATNIK, Zdenka, VONČINA, Bojana, VREZNER, Kaja, TUŠEK, Lidija, FRAS ZEMLJIČ, Lidija. Microencapsulation of cannabidiol in liposomes as coating for cellulose for potential advanced sanitary material. Coatings. 2021, vol. 11, iss. 1, str. 1-18, ilustr. ISSN 2079-6412. https://www.mdpi.com/2079-6412/11/1/3, DOI: 10.3390/coatings11010003. [COBISS.SI-ID 44050947]