Univerza v Mariboru

Fakulteta za naravoslovje in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	Izbrana poglavja iz mikrobnih bioznanosti
Course title:	Selected Topics in Microbial Biosciences

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 degree		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	Druge oblike študija	Samost. delo Individ. work	ECTS
10	10		10		150	6

Nosilec predmeta / Lecturer:	Marjanca Starčič Erjavec

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

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:	**Prerequisites:**
Jih ni.	No.

Vsebina:	Content (Syllabus outline):
Iz področij mikrobnih bioznanosti bodo izbrana poglavja, ki se bodo navezovala na doktorsko delo v predmet vpisanih študentov.	Topics will be selected from the fields of microbial biosciences that will be related to the doctoral thesis of students enrolled in the course.

Temeljni literatura in viri / Readings:

Madigan, M. T., Bender, K. S., Buckley, D. H., Sattley, W. M., Stahl, D. A. (2022). *Brock biology of microorganisms* (16. izdaja, str. 1124). Pearson.

Predojević, L., Keše, D., Žgur-Bertok, D., Železnik Ramuta, T., Veranič, P., Erdani-Kreft, M., & Starčič Erjavec, M. (2022). A biomimetic porcine urothelial model for assessing Escherichia coli pathogenicity. *Microorganisms*, *10*(4), 1-16,. https://www.mdpi.com/2076-2607/10/4/783/html

Cilji in kompetence:	Objectives and competences:
Cilj predmeta je nadgraditi znanje iz mikrobnih bioznanosti, ki je bilo osvojeno na preddoktorskem študiju, v znanje in kompetence, ki so potrebne za uspešno izvedbo raziskovalnega dela in pregleda literature s področja mikrobnih bioznanosti v okviru doktorske disertacije.	The aim of the course is to upgrade the knowledge of microbial biosciences acquired during pre-doctoral studies into the knowledge and competencies necessary for the successful implementation of research work and a literature review related to microbial biosciences needed for the doctoral dissertation.

Predvideni študijski rezultati:	Intended learning outcomes:
Študent bo pridobil znanje in razumevanje o izbranih vsebinah iz mikrobnih bioznanosti, ki so potrebne za uspešno izvedbo raziskovalnega dela in pregleda literature s področja mikrobnih bioznanosti v okviru doktorske disertacije.	Students will acquire the knowledge and understanding of selected microbial biosciences topics necessary for the successful implementation of research work and a literature review related to microbial biosciences needed for the doctoral dissertation.

Metode poučevanja in učenja:	Learning and teaching methods:

• Predavanja • Seminarsko delo • Laboratorijske vaje	• Lectures • Seminar work • Laboratory exercises

Načini ocenjevanja:	Delež (v %) / Weight (in %)	**Assessment:**
Ustni izpit	50	Oral exam
Seminarska naloga	50	Seminar paper

Reference nosilca / Lecturer's references:

1. KUZNETSOVA, Marina V., NESTEROVA, Larisa Jur'evna, MIHAILOVSKAYA, Veronika S., SELIVANOVA, Polina A., KOCHERGINA, Darja A., KARIPOVA, Marina O., VALTSIFER, Igor V., AVERKINA, Anastasia S., **STARČIČ ERJAVEC, Marjanca**. Nosocomial *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Staphylococcus aureus*: sensitivity to chlorhexidine-based biocides and prevalence of efflux pump genes. *International journal of molecular sciences*. 2025, vol. 26, issue 1, [article no.] 355, str. 1-23, ilustr. ISSN 1422-0067. https://www.mdpi.com/1422-0067/26/1/355, DOI: 10.3390/ijms26010355. [COBISS.SI-ID 221243395]
2. DENEKE, Wolde, EGUALE, Tadesse, MEDHIN, Girmay, HAILE, Aklilu Feleke, ALEMAYEHU, Haile, MIHRET, Adane, PIRŠ, Mateja, STRAŠEK SMRDEL, Katja, AVBERŠEK, Jana, KUŠAR, Darja, CERAR KIŠEK, Tjaša, JANKO, Tea, STEYER, Andrej, **STARČIČ ERJAVEC, Marjanca**. Genomic characterization of extended-spectrum β-lactamase-producing and third-generation cephalosporin-resistant *Escherichia coli* isolated from stools of primary healthcare patients in Ethiopia. *Antibiotics*. 2024, vol. 13, issue 9, [article no.] 851, str. 1-19, ilustr. ISSN 2079-6382. https://www.mdpi.com/2079-6382/13/9/851, DOI: 10.3390/antibiotics13090851. [COBISS.SI-ID 206604803]
3. KUZNETSOVA, Marina V., MIHAILOVSKAYA, Veronika S., REMEZOVSKAYA, Natalia B., **STARČIČ ERJAVEC, Marjanca**. Bacteriocin-producing *Escherichia coli* isolated from the gastrointestinal tract of farm animals: prevalence, molecular characterization and potential for application. *Microorganisms*. 2022, vol. 10, iss. 8, str. 1-12, art. 1558, ilustr. ISSN 2076-2607. https://www.mdpi.com/2076-2607/10/8/1558, DOI: 10.3390/microorganisms10081558. [COBISS.SI-ID 117232643]