

**UČNI NAČRT PREDMETA / COURSE SYLLABUS**

<b>Predmet:</b>	MODERNE METODE IN TEHNIKE V BIOKEMIJI
<b>Course Title:</b>	MODERN METHODS AND TECHNIQUES IN BIOCHEMISTRY

Študijski program in stopnja Study Programme and Level	Študijska smer Study Field	Letnik Academic Year	Semester Semester
DR Kemijske znanosti, 3. stopnja	/	1.	1. in 2.
Doctoral programme in Chemical Sciences, 3 <sup>rd</sup> Cycle	/	1 <sup>st</sup>	1 <sup>st</sup> and 2 <sup>nd</sup>

Vrsta predmeta / Course Type:

Univerzitetna koda predmeta / University Course Code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje Work	Druge oblike študija	Samost. delo Individual Work	ECTS
15	30	/	/	60	45	5

Nosilec predmeta / Lecturer:

Jeziki / Languages:

Predavanja / Lectures:

Vaje / Tutorial:

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

**Prerequisites:**

**Vsebina:**

**Content (Syllabus outline):**

**Temeljna literatura in viri / Readings:**

**Cilji in kompetence:**

Podiplomski študenti se bodo naučili spremljati razvoj novih metod in tehnik v biokemiji, kritično ocenjevati prednosti in slabosti izboljšav in uporabnost novih metod.

**Objectives and Competences:**

Keeping up-to-date with new methods and techniques in the field of biochemistry and molecular biology. Critically assessing the advantages and shortcomings of the improvements and applicability of new methods.

**Predvideni študijski rezultati:**Znanje in razumevanje

Principi, na katerih temeljijo izbrane nove metode in tehnike.

Uporaba

Uporabnost novih metod in tehnik za reševanje raziskovalnih in razvojnih problemov, predvsem v povezavi z raziskovalnim doktorskim delom.

Refleksija

Zmožnosti novih visokozmogljivih metod v primerjavi s klasičnimi. Tempo preseganja obstoječih mej raziskovanja živega sveta.

Prenosljive spretnosti

Iskanje virov v literaturi, priprava poglobljenih seminarjev, razpravljanje o strokovnih temah in predstavljanje pred publiko.

**Intended Learning Outcomes:**Knowledge and Comprehension

Underlying principles for selected new methods and techniques.

Application

Usefulness of new methods and techniques for solving research and development problems, mostly connected to PhD research.

Analysis

Capacity of novel high-throughput methods as compared to classical ones. Pace of overcoming present boundaries in exploring the living world.

Skill-transference Ability

Literature mining, preparation of in-depth seminars, discussions on professional topics and presenting to audience.

**Metode poučevanja in učenja:**

Uvodi v vsebinske sklope kot predavanja. Večina kontaktnih ur bo v obliki seminarja z obsežnimi razpravami. Veliko dela doma pri pripravi projekta in seminarja. Seminarske teme so vsako leto nove.

**Learning and Teaching Methods:**

Introductions to subject areas as lectures. Most contact hours in the form of seminar with extended discussions. Extensive homework required for the preparation of the project and seminar. Seminar topics change every year.

Delež (v %) /

**Načini ocenjevanja:**Weight (in %) **Assessment:**

Seminar	25 %	Seminar
Projekt	75 %	Project

**Reference nosilca / Lecturer's references:**

VASILJEVA, Olga, DOLINAR, Marko, ROZMAN PUNGERČAR, Jerica, TURK, Vito, TURK, Boris. Recombinant human procathepsin S is capable of autocatalytic processing at neutral pH in the presence of glycosaminoglycans. *FEBS Letters*, ISSN 0014-5793. [Print ed.], 2005, vol. 579, str. 1285-1290.

LAH, Jurij, DROBNAK, Igor, DOLINAR, Marko, VESNAVER, Gorazd. What drives the binding of minor groove-directed ligands to DNA hairpins? *Nucleic Acids Research*, ISSN 0305-1048, 2008, vol. 36, no. 3, str. 897-904.

ŠKRLJ, Nives, VIDRIH, Zlatko, DOLINAR, Marko. A universal approach for promoter strength evaluation supported by the web-based tool PromCal. *Analytical Biochemistry*, ISSN 0003-2697, 2010, vol. 396, no. 1, str. 83-90.