

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet: IZBRANA POGLAVJA IZ BIOKEMIJE
Course Title: SELECTED TOPICS 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 rd Cycle	/	1 st	1 st and 2 nd

Vrsta predmeta / Course Type: izbirni/Elective

Univerzitetna koda predmeta / University Course Code: KZ311

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje Work	Druge oblike študija	Samost. delo Individual Work	ECTS
10	25	/	/	80	35	5

Nosilec predmeta / Lecturer: doc. dr. Miha Pavšič / Dr. Miha Pavšič, Assistant Professor

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

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

Študent oz. kandidat mora imeti predmet opredeljen kot študijsko obveznost.

Prerequisites:

The course has to be assigned to the student.

Vsebina:

Uvod v tematiko, povezano z raziskovalnim delom kandidata (predavanja).
Osrednji del preostalega dela predmeta je individualno delo na projektu oz. predlogu projekta, povezanim z raziskovalnim delom kandidata, in sicer s področja biokemije, bioinformatike ter molekularne in strukturne biologije.

Content (Syllabus outline):

Introduction to topics relevant for the candidate's research work (lectures).
The central part of the rest of the study subject is individual work on a project or project proposal, linked to the candidate's research work from the fields of biochemistry, bioinformatics, and molecular and structural biology.

Temeljna literatura in viri / Readings:

Tekoča znanstvena literatura z relevantnega področja. / Current scientific literature from the relevant field.

Cilji in kompetence:

Podiplomski študenti bodo dobili pregled nad literaturo, znali bodo kritično ovrednotiti informacije in jih uporabiti za načrtovanje in ovrednotenje lastnega dela.

Po navodilih projektne razpisne dokumentacije bodo znali napisati ustrezen projekt. Znali bodo opisati ozadje raziskave, precizno formulirati hipoteze oz. namen dela, vključiti najbolj napredne tehnike in metode dela ter vse oblikovati v smiseln projekt.

Objectives and Competences:

Graduate students will gain an overview of scientific literature, they will be able to critically assess information and use it to plan and evaluate their own work.

They will be able to write an adequate grant proposal according to the funder's instructions. They will be able to describe the background of research, formulate the concise set of hypotheses or specific aims, include the most advanced techniques and methods and combine all items into a coherent proposal.

Predvideni študijski rezultati:Znanje in razumevanje

Iskanje, prepoznavanje in kritično ovrednotenje literaturnih podatkov za poglobljeno poznavanje z biokemijo povezanih vsebin.

Uporaba

Sposobnost priprave konkurenčne projektne prijave.

Refleksija

Sposobnost načrtovanja ustreznih eksperimentov in metod za reševanje biokemijskih nalog, kar bo omogočilo njihovo uporabo pri lastnem raziskovalnem delu.

Prenosljive spretnosti

Študenti pridobijo znanja preko iskanja literaturnih virov, iskanja projektnih razpisov ter razvoja in izboljšave predlaganega projekta.

Intended Learning Outcomes:Knowledge and Comprehension

Search, identify and critically evaluate the relevant literature to gain a thorough and up-to-date knowledge of a biochemistry-related topic.

Application

Ability to write a relevant and coherent grant application.

Analysis

Capacity to design appropriate experiments and methods to tackle a biochemical problem in their own research work.

Skill-transference Ability

Students gain skills through literature mining, identifying potential funders, and developing and refining their proposal.

Metode poučevanja in učenja:

Predavanja, konzultacije, projektna vloga

Learning and Teaching Methods:

Lectures, consultations, project proposal

Delež (v %) /

Načini ocenjevanja:

Weight (in %) **Assessment:**

Ocena projekta

100 %

Project evaluation

Reference nosilca / Lecturer's references:

1. GABER, Aljaž, GUNČAR, Gregor, PAVŠIČ, Miha. Proper Evaluation of Chemical Cross-Linking-Based Spatial Restraints Improves the Precision of Modeling Homo-Oligomeric Protein Complexes. *BMC Bioinformatics* 20, no. 1 (2019): 464. <https://doi.org/10.1186/s12859-019-3032-x>

2. GABER, Aljaž, KIM, Seung Joong, KAAKE, Robyn M., BENČINA, Mojca, KROGAN, Nevan, ŠALI, Andrej, PAVŠIČ, Miha, LENARČIČ, Brigita. EpCAM Homo-Oligomerization Is Not the Basis for Its Role in Cell-Cell Adhesion. *Scientific Reports* 8, no. 1 (2018): 13269. <https://doi.org/10.1038/s41598-018-31482-7>
3. PAVŠIČ, Miha, GUNČAR, Gregor, DJINOVIĆ-CARUGO, Kristina, LENARČIČ, Brigita. Crystal Structure and Its Bearing towards an Understanding of Key Biological Functions of EpCAM. *Nature Communications* 5 (2014): 4764. <https://doi.org/10.1038/ncomms5764>
4. PAVŠIČ, Miha, ILC, Gregor, VIDMAR, Tilen, PLAVEC, Janez, LENARČIČ, Brigita. The Cytosolic Tail of the Tumor Marker Protein Trop2—a Structural Switch Triggered by Phosphorylation. *Scientific Reports* 5 (2015): 10324. <https://doi.org/10.1038/srep10324>