



UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet	Diplomski seminar
Course name	Diploma seminar

Študijski program in stopnja Study program and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Fizika in Astrofizika I. stopnja	/	3	2
Physics and Astrophysics I. level	/	3	2

Vrsta predmeta / Course type	obvezni / mandatory
Univerzitetna koda predmeta / University course code	1FAF29N

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Lab. work	Teren. vaje Field work	Samost. delo Indiv. work	ECTS
/	60	/	/	/	120	6

Nosilec predmeta / Lecturer	Prof. dr. Artem Badasyan
Jeziki / Languages	slovenski, angleški / Slovenian, English

Pogoji za opravljanje študijskih obveznosti	Prerequisites
Vpis v 3. letnik	Enrolment into 3rd year

Vsebina	Syllabus outline
Diplomski seminar s področja fizike ali astrofizike. Pred začetkom 2. semestra študentu dodeli temo nosilec predmeta Diplomski seminar, oziroma si izbere temo skupaj z izbranim mentorjem v soglasju z nosilcem.	Diploma seminar from the field of physics or astrophysics. Prior to the start of the 2nd semester, the student is assigned a topic by the course principal. In agreement with course principal he may also choose a mentor and a topic in the field of expertise of that mentor.

Temeljna literatura in viri / Basic readings
Literaturo izbere študent v dogovoru z nosilecem predmeta oziroma mentorjem glede na temo seminarja / Literature for reading is selected by the student in agreement with the lecturer or mentor, according to the theme of the seminar.

Cilji in kompetence	Objectives and competences
Osnovna cilj predmeta je pridobivanje naslednjih kompetenc: <ul style="list-style-type: none"> • samostojnega pregleda znanstvene literature in priprave strukturirane pisne in ustne predstavitve določene tematike; • izbrati relevantno literaturo za predstavitev danega problema, 	Major objective of the course is to develop the following competences: <ul style="list-style-type: none"> • independently review scientific literature and prepare a structured written and oral presentation on a certain topic; • choose relevant literature to present a given problem;

- razumeti predstavljeno raziskovalno tematiko ter začeti z nadzorovanim raziskovalnim delom na tem področju.

- understand the presented research topic and start a supervised research work in this field.

Predvideni študijski rezultati	Intended learning outcomes
Študent je sposoben: - izbrati relevanto literaturo za dan problem, - kritično presoditi statistične značilnosti podatkov in uporabiti teoretske modele za njihovo interpretacijo.	The student is able to: - find and use relevant literature to solve the problem, - critically assesses statistical properties of the data, use theoretical models for data interpretation.

Metode poučevanja in učenja	Learning and teaching methods
Konzultacije z nosilcem predmeta in mentorjem. Pisno poročilo in ustna predstavitev. Možni obiski zunanjih laboratorijev za podrobnejši v pogled in praktične izkušnje	Consultations with the lecturer and mentor. Written report and oral presentation. Possible visits to external laboratories for practical experience

Postopek in načini ocenjevanja	The process and methods of assessment
Študent mora oddati seminar v pisni obliki nosilcu predmeta ter ga ustno predstaviti pred publiko. Ocenjuje se skupno pisni in ustni del.	The student has to present to the lecturer a written report to present the seminar to the public. Both written report and oral presentation count into the examination mark.

Reference nosilca / references of the course principal
<p>Prof. dr. Artem Badasyan je izredni profesor za področje fizike na Univerzi v Novi Gorici. Artem Badasyan is associate professor of physics at the University of Nova Gorica.</p> <p>Izbrane publikacije / selected publications:</p> <ol style="list-style-type: none"> 1. PEZHUMKATTIL PALAKKAL, Jasnamol, VALANT, Matjaž, BADASYAN, Artem, et al. Unusual magnetodielectric effects in La₂CuMnO₆ induced by a dynamic crossover in dielectric relaxation at TC. <i>Materials research bulletin</i>, ISSN 0025-5408., Apr. 2018, vol. 100, str. 226-233, doi: 10.1016/j.materresbull.2017.12.027. [COBISS.SI-ID 4979195]. 2. BADASYAN, Artem, MAVRIČ, Andraž, KRALJ CIGIČ, Irena, BENCIK, Tim, VALANT, Matjaž. Polymer nanoparticle sizes from dynamic light scattering and size exclusion chromatography : the case study of polysilanes. <i>Soft matter</i>, ISSN 1744-6848, 2018, vol. 14, issue 23, str. 4735-4740, doi: 10.1039/C8SM00780B. [COBISS.SI-ID 5150715]. 3. MAVRIČ, Andraž, BADASYAN, Artem, MALI, Gregor, VALANT, Matjaž. Growth mechanism and structure of electrochemically synthesized dendritic polymethylsilane molecules. <i>European Polymer Journal</i>, ISSN 0014-3057. 2017, vol. 90, str. 162-170, doi:



[10.1016/j.eurpolymj.2017.03.018](https://doi.org/10.1016/j.eurpolymj.2017.03.018).

4. MAVRIČ, Andraž, BADASYAN, Artem, FANETTI, Mattia, VALANT, Matjaž. Molecular size and solubility conditions of polysilane macromolecules with different topology. *Scientific reports*, ISSN 2045-2322, 2016, vol. 6, str. 1-8, doi: [10.1038/srep35450](https://doi.org/10.1038/srep35450). [COBISS.SI-ID [4549883](https://www.cobiss.si/id/4549883)].

5. ŠKRBIĆ, Tatjana, BADASYAN, Artem, HOANG, Trinh Xuan, PODGORNIK, Rudolf, GIACOMETTI, Achille. From polymers to proteins: the effect of side chains and broken symmetry on the formation of secondary structures within a Wang-Landau approach. *Soft matter*, ISSN 1744-683X, 2016, vol. 12, iss. 21, str. 4783-4793, ilustr., doi: [10.1039/C6SM00542J](https://doi.org/10.1039/C6SM00542J). [COBISS.SI-ID [2954852](https://www.cobiss.si/id/2954852)].