UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	Optika
Course name:	Optics

Študijski program in stopnja Study program and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Fizika in Astrofizika I. stopnja	/	3	1
Physics and Astrophysics I. level	/	3	1

Vrsta predmeta / Course type	obvezni / mandatory
Univerzitetna koda predmeta / University course code	1FAF30

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Lab. work	Teren. vaje Field work	Samost. delo Indiv. work	ECTS
30		30			120	6

Nosilec predmeta / Lecturer	prof. dr. Giovanni De Ninno	
Jeziki / Languages:	**Predavanja / Lectures:**	slovenščina / English
	Vaje / Tutorial:	slovenščina / English

Pogoji za opravljanje študijskih obveznosti	Prerequisites
Fizika I, Analiza 1, Elektrodinamika	Physics 1, Analysis 1, Electrodynamics

Vsebina	Syllabus outline
Geometrijska optika. Interferenca in uklon. Fourierova optika. Polarizacija svetlobe. Statistična optika. Laserji. Nelinearna optika.	Geometrical optics. Interference and diffraction. Fourier optics. Polarization. Statistical optics. Lasers. Nonlinear optics.

Temeljni literatura in viri / Basic readings
B. E. A. Saleh, M. C. Teich: Fundamentals of photonics (Ed. Wiley) + Lecture notes

Cilji in kompetence	Objectives and competences
Pregled geometrijske optike in nelinearne optike. Pregled koherence in uklona. Uvod v probleme, ki jih srečamo v laboratorijih, ki se ukvarjajo z optiko.	Overview about geometrical optics and nonlinear optics. Overview about coherence and diffraction. Introduction to real-life problems in laboratories dealing with optics.

Predvideni študijski rezultati	Intended learning outcomes
Po zaključku predmeta bodo študenti sposobni razumeti osnovne probleme linearne in	At the end of the course, students will be able to address elementary problems of linear and

nelinearne optike.	nonlinear optics.

Metode poučevanja in učenja	**Learning and teaching methods**
- predavanja - računske vaje	- lectures - tutorial

Načini ocenjevanja	**Utež / Weight (%)**	**Assessment**
- kolokviji, pisni izpit - ustni izpit	50 50	- written tests, written exam - oral exam

Reference nosilca / references of the course principal

Prof. dr. Giovanni De Ninno je redni profesor za področje fizike na Univerzi v Novi Gorici.
Professor Giovanni De Ninno is a full professor of physics at the University of Nova Gorica.

1. ALLARIA, E., DE NINNO, Giovanni, GAUTHIER, David, et al. Two-colour pump-probe experiments with a twin-pulse-seed extreme ultraviolet free-electron laser. *Nature communications*, ISSN 2041-1723, maj 2013, vol. 4, str. 1-7, doi: 10.1038/ncomms3476. [COBISS.SI-ID 2887163]

2. ALLARIA, Enrico, DE NINNO, Giovanni, GAUTHIER, David, SPAMPINATI, Simone, et al. Two-stage seeded soft-X-ray free-electron laser. *Nature photonics*, ISSN 1749-4885, 2013, vol. 7, no. 11, str. 913-918, doi: 10.1038/nphoton.2013.277. [COBISS.SI-ID 2928379]

3. DE NINNO, Giovanni, MAHIEU, Benoît, ALLARIA, E., GIANNESSI, L., SPAMPINATI, S. Chirped seeded free-electron lasers : self-standing light sources for two-color pump-probe experiments. *Physical review letters*, ISSN 0031-9007. [Print ed.], 2013, vol. 110, no. 6, str. 064801-1-064801-5, doi: 10.1103/PhysRevLett.110.064801. [COBISS.SI-ID 2882299]

4. ALLARIA, E., DE NINNO, Giovanni, et al. Highly coherent and stable pulses from the FERMI seeded free-electron laser in the extreme ultraviolet. *Nature photonics*, ISSN 1749-4885, 2012, vol. 6, no. 10, str. 699-704, doi: 10.1038/nphoton.2012.233. [COBISS.SI-ID 2817787]

5. DE NINNO, Giovanni, FANELLI, Duccio, Out-of-equilibrium statistical ensemble inequivalence. *Europhysics letters*, ISSN 0295-5075, 2012, vol. 97, no. 2, str. 20002-p1-20002-p5, doi: 10.1209/0295-5075/97/20002. [COBISS.SI-ID 2883323]