



OPIS PREDMETA / SUBJECT SPECIFICATION

Predmet:	Izbrana poglavja iz fizike
Subject Title:	Selected topics from Physics

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Enopredmetna izobraževalna fizika Single major Educational Physics		1	2

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. Vaje Lab. Work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
I I		15			180	8

Nosilec predmeta / Lecturer:

Jeziki / Predavanja / Lecture:
Languages: Vaje / Tutorial:

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

Prerequisites:

Vsebina:

Contents (Syllabus outline):

Vsebina predavanj:
Vsebina predavanj ne bo fiksna, temveč se bo iz leta v leto lahko spreminjala glede na aktualnost ter predznanje, zanimanje in potrebe študentov.

Vsebine bodo izbrane predvsem iz aktualnih interdisciplinarnih področij biofizike, fizike okolja in medicinske fizike.

Vsebina seminarskih vaj:
Teoretične vaje podprte z računalnikom vezane na vsebino predavanj.

Lectures:
The topics of the lectures won't be fixed but will be selected each year according to actuality, interest and needs of the students and their preknowledge.

The lectures will be chosen mainly from actual interdisciplinary fields within biophysics, environmental physics and medical physics.

Tutorial:
Computer aided theoretical exercises related to the topics covered in lectures.

Temeljni študijski viri / Textbooks:

Irving P. Herman, Physics of the human body, Springer, Berlin 2007
Jay Newman, Physics of the Life Sciences, Springer, Berlin 2008
Russell K. Hobbie, Bradley J. Roth, Intermediate Physics for Medicine and Biology 4th Ed., Springer, New York 2007

Posamezni učbeniki in druga učna gradiva s področij obravnavanih vsebin bodo podani tudi na predavanjih. / Some textbooks and other study materials on the topics, discussed at the lectures will be given at lectures.

Cilji:

Študent usvoji interdisciplinarna znanja iz izbranih aktualnih področij fizike.

Objectives:

Student gains knowledge of interdisciplinary topics from up to date physics.

Predvideni študijski rezultati:

Znanje in razumevanje:

Razumevanje izbranih procesov v naravi, človeškem telesu in tehniki. Znajo kvantitativno opisati izbrane pojave in izračunati rezultate.

Prenesljive/ključne spretnosti in drugi atributi:

Rešitev problemov z matematičnimi orodji in celosten pristop k reševanju problemov.

Sposobnost prepoznati problem in ga teoretično obravnavati v okviru fizike.

Intended learning outcomes:

Knowledge and Understanding:

Understanding of the selected processes in the nature, human body and our technology. They are able to describe selected phenomena on quantitative level and calculate the results.

Transferable/Key Skills and other attributes:

Solution of problems with mathematical tools, an integral approach to solution of problems.

They are able to identify the problem and describe it theoretically in the scope of physics.

Metode poučevanja in učenja:

- predavanja z demonstracijo eksperimentov
- teoretične vaje podprte z uporabo računalnika
- tutorsko vodeno samostojno reševanje problemov in domačih nalog

Learning and teaching methods:

- lectures with experiments
- computer aided tutorials
- problem based learning and homework solving

Načini ocenjevanja:

Delež (v %) /
Weight (in %)

Assessment:

Opravljene seminarske vaje vključujoč samostojno reševanje problemov in domačih nalog	25 %	Finished tutorials including work done within problem based learning and homework.
Seminarska naloga	25 %	Seminar work
Ustni izpit	50 %	Oral exam