



UČNI NAČRT PREDMETA / SUBJECT SPECIFICATION

Predmet:	Pregled klasične fizike
Subject Title:	Overview of Classical Physics

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
FIZIKA PHYSICS	-	1	1

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Labor work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
15	10				125	5

Nosilec predmeta / Lecturer:

Jeziki / Languages: **Predavanja / Lecture:** slovenski/Slovenian in/and angleški s slovenskim prevodom/English with translation in Slovenian
Vaje / Tutorial:

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

Prerequisites:

Vsebina:

1. Newtonova mehanika
2. Načela posebne teorije relativnosti
3. Mehanika kontinuov
4. Termodinamika
5. Elektromagnetizem
6. Pregled osnov kvantne mehanike
7. Struktura in dinamika trdne snovi, polprevodniki
8. Superprevodnost
9. Jedrska fizika

Content (Syllabus outline):

1. Newtonian mechanics
2. Principles of special relativity
3. Continuum mechanics
4. Thermodynamics
5. Electromagnetism
6. Principles of Quantum mechanics
7. Solid state structure and dynamics, semiconductors
8. Superconductivity
9. Nuclear physics

Temeljni literatura in viri / Textbook:

1. S. B Palmer, M. S. Rogalski, Advanced University Physics (CRC Press Inc., 2005).
2. Feynman R.P., Leighton R.B., Sands M.: Lectures on Physics, Addison - Wesley Pub. Company, Palo Alto, 1966. Za seminarje tudi knjige s posameznih področij, npr. / for seminars also books from different fields, e.g.:
3. N.W. Ashcroft, N.D. Mermin, Solid state physics, Rinehart and Winston, New York, 1976 in kasnejše izdaje.
4. G. M. Calkin, Lagrangian and Hamiltonian Mechanics (World Scientific, Singapore, 1998).
5. Di Bartolo, B: Classical Theory of Electromagnetism, World Scientific, Singapur, 2004.
6. I. G. Currie, Fundamental mechanics of fluids (McGraw Hill, New York, 1993).
7. F. G. Smith, T. A King, Optics and Photonics, An introduction (Wiley, Chichester, 2000).

Cilji:

Objectives:

Podati strnjen pregled nad fizikalnimi principi v cilju povezati makroskopske in mikroskopske pojave. Cilj je ponoviti in nadgraditi dodiplomsko znanje fizike kot tudi podati referenčni material za poglobljeno obravnavo navedenih področij.

Give a concise and condensed sequence of physical principles that link macroscopic and microscopic phenomena, providing a means for learning and revising as well as reference material for the professional inlook into the areas under consideration.

Predvideni študijski rezultati:

Znanje in razumevanje:
Povezovanje makro in mikroskopskih pojavov

Prenesljive/ključne spretnosti in drugi atributi:
Sposobnost povezovanja makro in mikroskopskih pojavov in aplikacija na probleme v vsakdanjem življenju.

Intended learning outcomes:

Knowledge and Understanding:
Linkage of macroscopic and microscopic phenomena

Transferable/Key Skills and other attributes:
The ability to link the macroscopic and microscopic phenomena and application of knowledge to the problems of everyday life.

Metode poučevanja in učenja:

Predavanja
Seminarji
Tutorsko delo

Learning and teaching methods:

Lectures
Seminar work
Tutor work

Načini ocenjevanja:

Ustni izpit
Seminarska naloga

Delež (v %) /

Weight (in %)

Assessment:

Oral exam
Seminar work

50%

50%