



Univerza v Mariboru
University of Maribor

Fakulteta za naravoslovje in
matematiko / Faculty of Natural
Sciences and Mathematics



OPIS PREDMETA / SUBJECT SPECIFICATION

Predmet: Subject Title:	Pedagoško-fizikalni projekti in tutorstvo Projects in Physics Education and Tutorial Work
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Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Dvopredmetna izobraževalna fizika Double major Educational Physics		1	1

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
15	15				60	3

Nosilec predmeta / Lecturer:

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

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

Zaželeno je predznanje maturitetnega programa matematike in fizike.

Prerequisites:

Knowledge of the secondary school program of Physics and Mathematics is desirable for successful work.

Vsebina:

Projektno delo na vsebinah srednješolske fizike.

Predmet karakterizirata dva temeljna sklopa:

- pregled vsebin srednješolske fizike
- temeljna znanja o zasnovi, izdelavi in vodenju projekta

Priprava vsebinskih sklopov, ki so primerni za projektno delo, izbor ožje tematike in definicija problema, oblikovanje tima, razdelitev nalog na projektu, iskanje referenc, ki so potrebne za delo na projektu, izdelava in predstavitev rezultatov.

Contents (Syllabus outline):

Project work in physics at secondary school level.

The subject is characterised by two basic issues:

- overview of physics in secondary school
- basic knowledge in project preparation, conducting, and managing of projects

Preparing issues which are appropriate for the project work, selection of concrete problems, formation of working team, determination of tasks, references relevant for the project, results and presentation of the results.

Temeljni študijski viri / Textbooks:

1. D. Halliday, R. Resnick, J. Walker, Fundamentals of Physics, 5. izdaja, (John Wiley & Sons, Inc., New York, 1997).
2. D. C. Giancoli, Physics, 3. Izdaja, (Prentice Hall, New Jersey, 1991).
3. J. D. Cutnell, K.W. Johnson, Physics, 2. Izdaja, (John Willey & Sons, Inc., New York, 1992).
4. Slovenski srednješolski učbeniki za fiziko.
5. Slovenski visokošolski učbeniki za fiziko.

Cilji:

Študenti usvojijo osnovno znanje s področja projektne dela na področju pedagoške fizike.

Objectives:

Students acquire basic knowledge from project work in educational physics.

Predvideni študijski rezultati:

Znanje in razumevanje:

Znajo samostojno pripraviti, izdelati in upravljati projekt na področju pedagoške fizike.

Prenesljive/ključne spretnosti in drugi atributi:

Pridobljeno znanje je širše uporabno na področju projektne dela.

Intended learning outcomes:

Knowledge and Understanding:

Students can prepare, conduct and manage projects in educational physics.

Transferable/Key Skills and other attributes:

The knowledge is generally applicable in the field of project work.

Metode poučevanja in učenja:

- predavanja
- seminarji
- tutorsko vodeno samostojno reševanje problemov

Learning and teaching methods:

- lectures
- seminars
- problem based learning

Načini ocenjevanja:

Delež (v %) /
Weight (in %)

Assessment:

- ustni izpit
- izdelan projekt v obliki seminarja
- tutorsko vodeno samostojno reševanje problemov

25 %
50 %
25 %

- oral exam
- complete project in the form of seminar
- work done within problem based learning