



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet: Praktično usposabljanje za poučevanje fizike 1

Course title: Pedagogical practice for teaching physics 1

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester
Enovit magistrski študijski program druge stopnje Predmetni učitelj	/	3, 4	6, 8
Five-year master's degree program Subject Teacher	/		

Vrsta predmeta / Course type

Obvezni / Compulsory

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Lab. vaje Laboratory work	Terenske vaje Field work	Samost. delo Individ. work	ECTS
	3		4		113	4

Nosilec predmeta / Lecturer:

Robert Repnik

Jeziki / Predavanja / Lectures: slovenski / Slovenian

Languages: Vaje / Tutorial: slovenski / Slovenian

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

Prerequisites:

Prisotnost na vajah iz predmeta Didaktika fizike 1 s praktikumom

Attendance at laboratory work for subject Didactics of physics 1 with practicum

Priporočljiva znanja:

osnovna znanja iz didaktike, pedagogike in psihologije;

Recommended knowledge: Basic knowledge in didactic, pedagogy and psychology;

Vsebina:

Seminar:

- organizacija vzgojno – izobraževalnega dela v osnovni šoli. Šolska dokumentacija, predmetnik in učni načrti za fiziko;
- organizacija strnjene pedagoške prakse;
- spoznavanje dokumentacije o opazovanju, spremljanju, izvajanju in ocenjevanju izvedenih dejavnosti na dvotedenski strnjeni pedagoški praksi v osnovni šoli.
- načrtovanje in izvedba pisne priprave za pouk;
- pripravljanje na izvedbo nastopa;
- dnevnik pedagoške prakse;
- vrednotenje in refleksija pedagoške prakse.

Laboratorijske vaje:

- izvedba nastopov v osnovni šoli;
- izvedba pedagoške prakse.

Samostojno delo:

- pisne priprave za izvedbo pouka;
- spoznavanje pedagoške dokumentacije (letna in dnevna priprava, dnevnik, redovalnica);
- delo in organiziranost oddelčne in šolske skupnosti;
- organiziranost interesnih dejavnosti fizike, šolskih projektov, aktivov učiteljev;
- izvedba učnih ur (nastopov) in hospitacij na strnjeni pedagoški praksi na osnovni šoli.

Nastopi v šoli med letom:

- 2 nastopa v osnovni šoli,
- 3 hospitacije učiteljev (vzorčni nastopi),
- 3 hospitacije kolegov študentov med letom.

Pedagoška praksa z nastopi, hospitacijami in drugimi pedagoškimi obveznostmi (1 teden):

v osnovni šoli, 4 nastopi, 6 hospitacij učitelja, seznanitev z drugim delom učitelja na šoli (vodenje pedagoške dokumentacije, udeležba na roditeljskem sestanku ali govorilni uri, seznanitev z

Content (Syllabus outline):

Seminar:

- organization of the education in primary school. School documentation and subject curricula for physics education;
- organization of pedagogical practice;
- the documentation of the observation, monitoring, implementation and evaluation of the activities in the continuous two-week teaching practice in primary school.
- planning of educational process – preparing for class appearances;
- diary of pedagogical practice;
- evaluation of class appearances and pedagogical class practice.

Lab. work:

- realization of class appearances and pedagogical class practice in primary school.

Individual work:

- written preparing for class appearances;
- learn about pedagogical documents (annual and daily preparation for educational process, school diary);
- work and organization of departmental and school community;
- the structure of physics interest activities, school projects, teacher groups;
- realization of class appearances and pedagogical class practice in primary school.

Pedagogical class appearances in school:

- 2 appearances in elementary school,
- 3 observations (teachers),
- 3 observations (students).

Pedagogical practice with class appearances (instructions), observations and other pedagogical obligations (1 week):

delom strokovnega aktiva, udeležba na pedagoški konferenci, seznanitev z delom razrednika, pomoč mentorju pri drugem delu, določenem z zakonodajo in letnim delovnim načrtom šole).

in elementary school, 4 class appearances, 6 observations (teachers), other pedagogical obligations.

Temeljni literatura in viri / Readings:

Osnovni viri:

- Gerlič. Didaktika pouka fizike v OŠ. PEF MB, 1992.
- NEWBY, Peter. Research Methods for Education, Pearson Education Ltd., Harlow, Essex, UK, 2010
- Blažič, M., Ivanuš Grmek, M., Kramar, M., Strmčnik, F. (2003). Didaktika. Visokošolski učbenik. Novo mesto: Visokošolsko središče, Inštitut za raziskovalno in razvojno delo.
- Marentič – Požarnik, B. Psihologija učenja in pouka. DZS, Ljubljana 2003.
- Veljavni predmetnik, učni načrti in učbeniška gradiva za fiziko/naravoslovje in izbirne predmete fizike/naravoslovja v osnovni šoli.
- Kompare, A. idr. Psihologija. Spoznavanja in dileme. Ljubljana, DZS, 2001.

Cilji in kompetence:

Študent se usposobi za načrtovanje, izvedbo in analizo pouka fizike v osnovni šoli.

Objectives and competences:

The student is trained to plan, execute and analyse physical education in elementary school.

Predvideni študijski rezultati:

Znanje in razumevanje:

Po uspešno zaključeni učni enoti je študent zmožen:

- sistematično opazovati pouk fizike v osnovni šoli in drugih dejavnosti učitelja;
- uporabiti strokovno – predmetno in pedagoško – didaktično znanje pri izdelavi pisne priprave za izvedbo pouka fizike v osnovni šoli ;
- uporaba in preverjanje teoretičnih spoznanj v neposredni pedagoški praksi;
- pridobivanje pedagoških izkušenj in razvijanje kompetenc učitelja fizike v osnovni šoli.
- uporabiti različne strategije, koncepte, modele, metode in oblike vzgojno – izobraževalnega procesa pri izvajanju pouka fizike v osnovni šoli;
- analize in samo vrednotenja izvajanja in preverjanja dosežkov iz izvedene učne ure fizike v osnovni šoli

Intended learning outcomes:

Knowledge and Understanding:

On completion of this course student will be able to:

- systematic observe teaching physics in primary education and other activities of the teacher;
- use professional - subject and educational - teaching writing skills in the manufacture of preparations for the implementation of physics instruction in primary education;
- use and verification of theoretical knowledge in the direct teaching practice;
- acquire teaching experiences of primary physics teacher and develop skills and competences,
- use different strategies, concepts, models, methods and forms of the physics educational process in primary education;

Prenesljive/ključne spretnosti in drugi atributi:

- kombinirana uporaba različnih znanj pri izdelavi učne priprave za izvedbo konkretne učne ure;
- analiziranje učne ure po objektivnih merilih;
- kompetence učitelja fizike v osnovni šoli.

- analyze and self evaluate the class appearances of physics in primary education.

Transferable/Key Skills and other attributes:

- combined use of different teaching skills at the preparing the implementation of instructions;
- analyzing the instructions, using objective criteria;
- physics teacher competencies in primary education.

Metode poučevanja in učenja:

- Seminar v obliki razgovora in diskusij;
- demonstracije;
- individualno učno delo;
- uporaba izobraževalne tehnologije in IKT;
- izvedbe in analize učnih nastopov in pedagoške prakse – oblika individualnega dela.

Learning and teaching methods:

- Seminar in the form of conversation and discussion;
- demonstrations;
- individual educational work;
- use of educational technology and ICT;
- implementation and analysis of teaching instructions and teaching practice - a form of individual work.

Delež (v %) /

Načini ocenjevanja:

Weight (in %)

Assessment:

- 2 nastopa v OŠ – med letom;
- 3 vzorčne hospitacije – med letom;
- 3 hospitacije kolegov – med letom;
- obveznosti na 7 dnevni pedagoški praksi (4 nastopi in 6 hospitacij);
- Predmet je ocenjen s končno opisno oceno "je opravljen", če je kandidat uspešno opravljen vsako od naštetih obveznosti.

opravljen/passed
opravljen/passed
opravljen/passed
opravljen/passed

- 2 pedagogical class appearances in the primary school;
- 3 example observations;
- 3 observations of other students appearances;
- 7 day pedagogical practice (4 class appearances and 6 observations),
- The course is rated with the final descriptive assessment "has passed" if the candidate has successfully completed each of the above obligations.

Reference nosilca / Lecturer's references:

- HAUKO, Robert, ANDREEVSKI, Damjan, PAUL, Domen, ŠTERK, Marko, REPNIK, Robert. Teaching of the harmonic oscillator damped by a constant force: The use of analogy and experiments. *American journal of physics : a publication of American association of physics teachers*, ISSN 0002-9505. [Print ed.], Sep. 2018, vol. 86, no. 9, str. 657-662, ilustr. <https://aapt.scitation.org/doi/pdf/10.1119/1.5044654>, doi: [10.1119/1.5044654](https://doi.org/10.1119/1.5044654).
- REPNIK, Robert, AMBROŽIČ, Milan. Practical school experiments with the centre of mass of bodies. *CEPS journal : Center for Educational Policy Studies Journal*, ISSN 1855-9719, 2018, vol. 8, no. 1, str. 97-116, ilustr. <https://ojs.cepsj.si/index.php/cepsj/article/view/311/270>, doi: [10.26529/cepsj.311](https://doi.org/10.26529/cepsj.311). [COBISS.SI-ID11972169]
- ŠORGO, Andrej, DOJER, Brina, GOLOB, Nika, REPNIK, Robert, REPOLUSK, Samo, PESEK, Igor, PLOJ VIRTIČ, Mateja, ŠPERNJAK, Andreja, ŠPUR, Natalija. Opinions about STEM content and classroom experiences as predictors of upper secondary school students' career aspirations to become researchers or teachers. *Journal of research in science teaching*, ISSN 0022-4308, 2018, str. 1-21, ilustr., doi: doi.org/10.1002/tea.21462.