

Study program	Level of the study program		First cycle	
	Study program name		Physics Education	
Course name	LABORATORY IN PHYSICS EDUCATION I			
Course ID	Semester	Course status	ECTS credits	L+E
PED5411	V	MANDATORY	4	0+3
Lecturer				
Aims and intended learning outcomes	The aim of this course is to develop students' knowledge, skills and habits that are important for effective implementation of the experimental method in physics classrooms.			
	Intended learning outcomes: <div><div></div><div>1. Systematically prepare physics experiments, including a written plan for implementation of the experimental method.</div><div>2. Conduct physics experiments and thereby take into account the potential safety risks.</div><div>3. Analyse experimental data, identify sources of error and suggest potential ways of improving the experimental setup.</div><div>4. Present and discuss the experimental results by using multiple representations and taking into account basic principles of cognitive psychology.</div><div>5. Identify, evaluate and design hands-on experiments in physics.</div></div>			
Course content				
Introducing the students with the syllabus. Basic measurements in mechanics. Kinematics. Dynamics. Gravitational field. Free fall. Stability. Static equilibrium. Decomposition and superposition forces. Pressure. Statics of fluids. Energy, work and power. Friction. Simple machines. Particulate nature of matter. Heat phenomena – part I. Heat phenomena – part II.				
Student workload (hours)		Grading		
Lectures and Exercises	45	Assessment method	Points	
Exam preparation	25	Partial exam	40	
Assignments	25	Project	10	
Other	5	Final exam	50	
Total	100			
		Total	100	
Literature				
<div><div></div><div>1. Vrcelj, A. (n.d.). <i>Metodički praktikum – mehanika i termodinamika</i> (interna skripta). Sarajevo: Prirodno-matematički fakultet.</div><div>2. Physics textbooks for the primary and secondary school level.</div><div>3. Cunningham, J., & Herr, N. (1994). <i>Hands-on physics activities with real-life applications: easy-to-use labs and demonstrations for grades 8-12</i> (Vol. 3). Jossey-Bass.</div></div>				
Remarks				
A passing grade on individual laboratory reports is a prerequisite for getting access to the final exam.				