

Study program	Level of the study program		Second cycle	
	Study program name		Physics Education	
Course name	LABORATORY IN PHYSICS EDUCATION III			
Course ID	Semester	Course status	ECTS credits	L+E
<b>PED7411</b>	<b>I</b>	<b>MANDATORY</b>	<b>4</b>	<b>0+3</b>
Lecturer				
Aims and intended learning outcomes	<p>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.</p> <p>Intended learning outcomes:</p> <ol style="list-style-type: none"> <li>1. Systematically prepare physics experiments, including a written plan for implementation of the experimental method.</li> <li>2. Conduct physics experiments and thereby take into account the potential safety risks.</li> <li>3. Analyse experimental data, identify sources of error and suggest potential ways of improving the experimental setup.</li> <li>4. Present and discuss the experimental results by using multiple representations and taking into account basic principles of cognitive psychology.</li> <li>5. Identify, evaluate and design hands-on experiments in physics.</li> <li>6. Solve experimental exercises and laboratory problems.</li> </ol>			
Course content				
<p>Introducing the students with the syllabus.  Independence of perpendicular components of motion. Projectile motion.  Rotational motion.  Conservation laws in mechanics.  Fluid dynamics.  Basics of thermodynamics and molecular kinetic theory.  Mechanical oscillations and waves - part I.  Mechanical oscillations and waves - part II.  Direct current. Electric current in fluids.  Alternating current. Electromagnetic oscillations and waves.</p>				
Student workload (hours)		Grading		
Lectures and Exercises	45	Assessment method	Points	
Exam preparation	25	Partial exam	30	
Assignments	25	Experimental exercises and laboratory problems	10	
Other	5	Project	10	
Total	100	Final exam	50	
		Total	100	
Literature				
<ol style="list-style-type: none"> <li>1. Mešić, V. (n.d.). <i>Praktikum metodike nastave fizike III</i> (interna skripta). Sarajevo: Prirodno-matematički fakultet.</li> <li>2. Physics textbooks for primary and secondary school.</li> <li>3. Sprott, J. C. (2006). <i>Physics Demonstrations: A sourcebook for teachers of physics</i>. University of Wisconsin Press.</li> </ol>				
Remarks				
A passing grade on individual laboratory reports is a prerequisite for getting access to the final exam.				