

Study program	Level of the study program		Second cycle	
	Study program name		Physics Education	
Course name	PHYSICS EDUCATION IV			
Course ID	Semester	Course status	ECTS credits	L+E
PED0611	IV	MANDATORY	6	3+2
Lecturer				
Aims and intended learning outcomes	<p>The aim of this course is to further develop students' understanding about didactical specifics of learning and teaching electromagnetism, optics and modern physics at the level of primary and secondary school.</p> <p>Intended learning outcomes:</p> <ol style="list-style-type: none"> 1. Describe common students' difficulties in learning electromagnetism, optics and modern physics. 2. Identify potential sources of students' difficulties in learning electromagnetism, optics and modern physics. 3. Identify and/or create approaches to overcoming students' difficulties in learning electromagnetism, optics and modern physics. 4. Solve challenging (conceptual and quantitative) physics problems. 			
Course content				
<p>Learning and teaching about wave optics. Learning and teaching about ray optics. Learning and teaching about optical instruments. Learning and teaching about electric fields and electric force. Learning and teaching about the electric potential. Learning and teaching about electric current and electric resistance. Learning and teaching about electric circuits. Learning and teaching about the magnetic field and magnetic force. Learning and teaching about electromagnetic induction and waves. Learning and teaching about alternating current. Learning and teaching about relativity. Learning and teaching about quantum physics. Learning and teaching about atomic and molecular physics. Learning and teaching about nuclear physics.</p>				
Student workload (hours)		Grading		
Lectures and Exercises	75	Assessment method	Points	
Exam preparation	50	Partial exam	40	
Assignments	20	Seminar paper	20	
Other	5	Final exam	40	
Total	150			
		Total	100	
Literature				
<ol style="list-style-type: none"> 1. Muratović, H., Mešić, V. (2009). <i>Didaktičko-metodički prilozi nastavi fizike</i>. Sarajevo: Prirodno-matematički fakultet. 2. Arons, A. B. (1997). <i>Teaching Introductory Physics</i>. New York: John Wiley & Sons, Inc. 3. Knight, R. (2004). <i>Five Easy Lessons: Strategies for Successful Physics Teaching</i>. San Francisco: Addison-Wesley. 4. Selected articles from physics education journals. 				
Remarks				