Study program	Level of the study program		First cycle	
	Name of the study program		Educational Physics	
Course name	LABORATORY IN PHYSICS EDUCATION IV			
Course ID	Semester	Course status	ECTS credits	L+E
PED8421	**VIII**	**MANDATORY**	**4**	**0+3**
Lecturer	**Prof. dr. Vanes Mešić**			
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 with particular focus on use of modern technologies and experimental projects. Intended learning outcomes: 1. Systematically prepare, conduct, evaluate and present physics experiments. 2. Perform digital video analysis of selected physics phenomena and demonstrate the ability to use microcomputer-based laboratories in the physics classroom. 3. Demonstrate virtual physics experiments and solve virtual laboratory problems. 4. Prepare, implement and present experimental projects in physics.			

Course content

Introducing the students with the syllabus.
Double-slit interference.
Interference in thin films.
Optical grating.
Single slit diffraction.
Polarization.
Light scattering. Light absorption. Colors.
Virtual physics experiments.
Digital video analysis of selected physics phenomena.
Microcomputer-based laboratories.
Role of experimental projects in physics teaching.

Student workload (hours)		Grading	
Lectures and Exercises	45	Assessment method	Points
Exam preparation	25	Partial exam	15
Assignments	25	Homework	10
Other	5	Experimental project	25
Total	100	Final exam	50
		Total	100

Literature

1. Mešić, V. (n.d.). *Praktikum metodike nastave fizike IV* (interna skripta). Sarajevo: Prirodno-matematički fakultet.
2. Physics textbooks for primary and secondary school.
3. Sokoloff, D. R., Thornton, R. K., & Laws, P. W. (2011). *RealTime Physics Active learning laboratories, Module 1: Mechanics*. John Wiley & Sons.
4. Eisenkraft, A. (2010). *Active physics: A project-based inquiry approach*. Armonk, NY: It's About Time.

Remarks

A passing grade on individual laboratory reports is a prerequisite for getting access to the final exam.