

Study program	Level of studies		First cycle	
	Study program name		Physics Education	
Course name	ADVANCED GENERAL PHYSICS LABORATORY			
Course ID	Semester	Course status	ECTS credits	L+E
PHY5421	V	MANDATORY	4	0+3
Lecturer				
Aims and intended learning outcomes	Laboratory exercises are designed to enable to students to apply acquired knowledge from Physics courses. By working with experimental equipment using simple measurement instrumentation and parts, from optical to semiconductors components, students are introduced to a field of physics experiment design and construction. After completing the course student should have acquired enough skills and knowledge to design and construct simple Physics experiments.			
Course content				
List of laboratory exercises				
<div>1. Interference and diffraction of light:<div>a) on single and double coil, b) on water waves</div></div> <div>2. Measuring g using rotating liquid.</div> <div>3. Measuring g using reversible pendulum.</div> <div>4. Measuring Planck's constant using photoresistor.</div> <div>5. Analysing current-voltage characteristics of a semiconductor photocell.</div> <div>6. Analysing current-voltage characteristics of a LED</div> <div>7. Electrical conductivity of a thin layers.</div> <div>8. Magnetic characteristics of a graphite.</div> <div>9. Mechanical black box.</div> <div>10. Electrical black box.</div> <div>11. Microwaves interference</div> <div>12. Analysing magnetic properties of a liquid using laser light.</div> <div>13. Light transmission through liquid crystal cell</div>				
Student workload (hours)		Grading		
Lectures and Exercises	45	Assessment method	Points	
Exam preparation	35	Laboratory reports	60	
Assignments	15	Final exam	40	
Other	5			
Total	100	-		
		Total	100	
Literature				
Laboratory manual				
Remarks				
Every year six experimental exercises will be chosen from the above list. Students are obligated to complete all six exercises and to submit a laboratory report. Some exercises require a total of six hours to complete.				