

Study program	Level of studies		Third cycle	
	Title of the study program		Doctoral studies in physics	
Course title	ADVANCED EXPERIMENTAL TECHNIQUES IN NUCLEAR PHYSICS			
Course ID	Semester	Course status	ECTS credits	Teaching hours
PAP7061	I /II	Elective	10	30
Course aims and expected learning outcomes	To understand the importance and methods of measurement and to have knowledge of measurement techniques. To learn properties of various types of detectors and their usage, about radiation measurements of charged and non-charged particles. To gain experience in data analysis with modern methods and tools (computers, software and programming).			
COURSE CONTENT				
<p>1.Introduction</p> <p>2.Interactions of Particles in Matter</p> <p>3.Sources of Radiation</p> <p>4.Linear Accelerators</p> <p>5.& 6. Gas Based Detectors I and II</p> <p>7.& 8.Semiconductor detectors I and II</p> <p>9.& 10. Scintillation Detectors I and II</p> <p>11. Neutron Detectors</p> <p>12. & 13. & 14. Electronics for Particle Detectors I and II and III</p>				
LITERATURE			ASSESSMENT OF LEARNING	
<p>1. Measurement and Detection of Radiation Nicholas Tsoufanidis, Sheldon Landsberger</p> <p>2. Alpha,Beta, Gamma-ray Spectroscopy; K.Siegband,</p> <p>3. Experimental Techniques in Nuclear and Particle Physics by Stefaan Tavernier</p> <p>4. Radiation Detection and Measurement by Glen Knoll</p> <p>5. Techniques for Nuclear and Particle Physics Experiments by W.R. Leo</p>			Assessment Method	Points
			Practice/Project	20
			Seminar paper	30
			Presentation	50
			Total	100
Remarks				