

Level: bachelor				
Course title: Contemporary Experimental Physics III				
Status: obligatory				
ECTS: 7				
Requirements: Contemporary Experimental Physics I				
Learning objectives To introduce students to several general concepts of Nuclear Physics: interaction of radiation with matter, detection techniques and detectors, radioactive decay, nuclear properties, nuclear reactions and dosimetry.				
Learning outcomes Students should have a broad overview of basic facts in nuclear physics. The knowledge acquired should make a good basis for further courses in the area of Nuclear Physics and its applications.				
Syllabus Interaction of radiation with matter (Energy loss of charged particles by ionization and radiation). Cherenkov radiation. Range. Interaction of gamma radiation with matter. Detectors of nuclear radiation. (Gas counters. Scintillation spectrometers. Semi conducting spectrometers.) Radioactive decay (law of radioactive decay. Radioactive chains. Types of radioactive decay). Nuclear properties (Structure of nucleus. Dimensions of nucleus. Mass and binding energy of nucleus. Nuclear energy). Nuclear reactions and origin of elements. Dosimetry.				
Weekly teaching load				Other:
Lectures: 3	Exercises: 1	Other forms of teaching: 3	Student research:	