

Level: bachelor				
Course title: Introduction to the Nuclear Physics				
Status: obligatory				
ECTS: 7				
Requirements: Introduction to the Physics of Atoms				
Learning objectives To introduce students to the basic chapters of Nuclear Physics: interaction of radiation with matter, detection of radiation and detectors, radioactive decay, properties of nucleus, nuclear reactions and dosimetry.				
Learning outcomes Students should have a solid basic 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 of charged particles. Basic mechanisms of interaction of gamma radiation with matter. Detectors of nuclear radiation. (Gas counters. Scintillation spectrometers. Semi conducting spectrometers. Optical detectors) 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 moments). Nuclear reactions and origin of elements. Dosimetry.				
Weekly teaching load				Other:
Lectures: 3	Exercises: 1	Other forms of teaching: 3	Student research:	