

Study program: Master studies Physics / Integrated master studies Professor of Physics		
Subject: Radiation Dosimetry		
Course status: Elective		
Number of ECTS: 8		
Requirement:		
Course goals Study of general principles of dosimetry and protection from ionizing radiation, radiation quantities and units, as well as the optimization of radiation protection.		
Outcome		
- General skills: Radiation dosimetry is a subject in which students are introduced to the general principles of radiation dosimetry and regulations in this area.		
- Specific abilities: Gaining knowledge of: radiation protection, radiation spectrum, interaction of low-energy radiation with tissue, X-ray diagnostic methods, dose limits, optimization of radiation protection, regulation of radiation protection, radiation units		
Contents Theoretical Interaction of ionizing radiation with matter (interaction of a photons, interaction of neutrons, interaction of alpha and beta particles). Direct measurement of the absorbed dose (absorbed dose units). Exposition dose and measurement. The kerma concept. Determination of absorbed dose during the exposure (Absorbed dose in the air. Absorbed dose in other materials. Conversion factors) Comparison of electrons, photons and neutrons dosimetry. Dosimetry with ionization chamber. Chemical, thermoluminescence, photographic dosimetry. Dosimetry with scintillation detectors. Dosimetry in radiation protection. Equivalent dose. Quality factor. Effective dose equivalent. Practical lessons: Experimental and computational exercises.		
Literature 1. Jacob Shaprio, Radiation Protection, Harvard University Press, ISBN0-674-00740-9,2002.		
Number of active teaching	Theoretical classes: 3	Study research: 2
Methods of teaching Lectures (3 times a week, during the term), computing practice (1 time per week during the term), the practical teaching (1 time per week during the term).		