

Level: PhD				
Course title: Ionizing radiation				
Status: elective				
ECTS: 15				
Requirements: none				
Learning objectives The goal of this course is to provide students with knowledge of origin and characteristics of ionizing radiation, about methods of its detection, as well as about protection from ionizing radiation.				
Learning outcomes After the successful completion of this course, the students will be familiar with origin and characteristics of ionizing radiation, with methods of its detection, as well as with protection from ionizing radiation.				
Syllabus Basic properties of the atomic nucleus. Radioactivity and radioactive decay law. Alpha and beta decay. Emission of gamma radiation. X - radiation. The interaction of ionizing radiation with matter. Detection of ionizing radiation. Experimental techniques and measurement methodologies of gamma spectrometry. Sources of ionizing radiation. Radioactive waste. Fundamentals of dosimetry of ionizing radiation. The biological effects of ionizing radiation. Protection against ionizing radiation. Radioisotopes in medicine. Application in science and industry.				
Weekly teaching load				Other:
Lectures: 5	Exercises:	Other forms of teaching:	Student research: 5	