

Level: Master		
Course title: Radioecology		
Status: obligatory		
ECTS: 8		
Requirements: -		
Learning objectives This course will introduce to students main aspects of radioecology as a modern research discipline. Radioecology includes radioactive sources in the environment, accidents and radiocontamination, as well as application of radioisotopes in other research areas.		
Learning outcomes <ul style="list-style-type: none"> - General Skills: This course will help students to develop ecological thinking as a basis for future behavior and protecting environment. - Specific Competencies: Understanding of all useful and dangerous aspects of radioactivity and ionizing radiation. Students will develop critical opinion about present radioecological problems. 		
Syllabus <i>Theoretical instruction:</i> Radionuclides in the environment. Ionizing radiation - biological effects and dosimetry. Detection of ionizing radiation. Gamma spectrometry. Alpha/beta spectrometry. Liquid Scintillation Counter. Transport of radionucleides through eco-system. Radon and measuring methods for radon measurement. NORM materials. Industrial activities that produce NORM. Modeling of NORM from building material. Nuclear forensic. <i>Practical instruction:</i> Experimental work – alpha, beta and gamma spectroscopy. Term paper.		
Literature <ol style="list-style-type: none"> 1. “Handbook of Radioactivity Analysis”, L'Annunziata, Michael 2. “Practical Applications of Radioactivity and Nuclear Radiations”, G.C.Lowenthal, P.L.Airey. 3. “Radioactivity, Radionuclides, Radiation”, Joseph Magill, Jean Galy, Springer Berlin Heidelberg New York. 		
Weekly teaching load	Lectures: 3	Exercises: 2