Course ID: HRHI03	**Course name: RADIOACTIVE MATERIALS - MEASUREMENTS METHODS AND PROTECTION**		
Cycle: SECOND	**Year: FIRST**	**Semester: I**	**ECTS credits: 4**
Course status: ELECTIVE		**Total course hours: 60** Lectures: 45 Laboratory: 15	
Teaching participants:	**Teachers and associates with expertise in the field to which the subject belongs**		
Prerequisite for enrollment:	Radiochemistry		
Course aims:	Identification and detection of radionuclides present in different materials		
Thematic course units:	Types of radioactive materials Construction material Plastics Polymers Medical waste Waste materials Cold storage Recycling yards Landfills Methods of detection and measurement of radioactivity (chemical dosimetry, spatial dose equivalent, personal dose equivalent) Specific methods for determination of radionuclides in radioactive materials Radioactive material handling		
Learning outcomes:	Knowledge: Students will gain knowledge about radioactive materials, basic detection methods and their safe handling Skills: Detection and identification of radionuclides present in different materials, taking into account the physico-chemical characteristics of the material, location, shape of the object / material being tested Competences: Handling of radioactive material respecting radiation safety in all activities related to the handling of radioactive material		
Teaching methodology:	Auditory lectures; Field exercise		

Assessment methods and grading system[1]:

Grading criteria		
Criteria	Maximal score	Required score
1. Class attendance	5	3
2. Class activities	10	5
3. Midterms	45	25
4. Final exam	40	22
Total	100	55

Scores and grading		
Score	Grade (B&H)	Grade (ECTS)
< 55	5	F, FX
55–64	6	E
65–74	7	D
75–84	8	C
85–94	9	B
95–100	10	A

Literature[2]:

Supplementary literature:

1. Merrill Eisenbud, Thomas F. Gesell (1997), Environmental Radioactivity, From Natural, Industrial and Military Sources, 4th edition, academic Press, USA
2. Pavel Povinec (2007). Analysis of Environmental Radionuclides, Volume 11,1st Edition, Comenius University, Bratislava, Slovakia
3. Understanding radioactive waste, Raymond LeRoy Murray, Battelle Press, 2003

[1] The grading structure for each subject is determined by the Council of the organizational unit before the beginning of the academic year in which the subject is taught as per Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

[2] The Senate of the higher education institution, as an institution, or the Council of the organizational unit of the higher education institution, as a public institution, determines by a special decision, which is published on its website before the beginning of the academic year obligatory, mandatory and recommended textbooks and manuals, as well as other recommended literature based on which exams are prepared and taken as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton