

Module: Basics of Radiochemistry			
University/Department/Institute: Freie Universität Berlin/Department of Biology, Chemistry, Pharmacy/Institute of Chemistry and Biochemistry			
Module supervisors: Lecturers of the module			
Entrance Requirements: none			
Goals of Qualification: Students have acquired basic knowledge of fundamental laws of radioactive decay, nuclear reactions, chemistry of radioactive elements and isotopes, application of radioactive elements in medicine and technology and the basics of radiation protection. They are able to use this knowledge when measuring nuclear radiation or for the synthesis of radioactive substances. They have acquired the basic knowledge to handle open radioactive substances and enclosed radiation sources safely as well as relevant measurement techniques.			
Contents: nuclear structure, elementary particles, nuclear radiation, natural and artificial radioactivity, interaction of emission and matter, measurement of nuclear radiation, principles of radiation protection, radiochemical analysis methods, radiochemical tags, nuclear medicine, chemistry of selected radioactive elements, transuranic elements, nuclear fission, nuclear disposal, basic regulations for working in a radiochemical laboratory, radioactive measurement techniques, classic radiochemical measurements, analytical methods in radiochemistry, handling of open radioactive compounds, radiochemical trace analysis (neutron activation analysis)			
Teaching methods	Hours of attendance (Hours per week)	Forms of active participation	Workload (hours)
Lecture	2	-	Presence (L) 30 Pre-, post-preparation (L) 30
Safety relevant lab training	30 hours	Conduction and written protocol of experiment	Presence (Lab) 30 Pre-, post-preparation (Lab) 30 Exam preparation and examination 30
Language offer of lecture		German, if required by circumstances: English	
Compulsory regular attendance		Lecture attendance is recommended, lab training: yes	
Workload (total)		150 hours	5 CP
Length of module		One semester (Lab: one week during the semester)	
Examination		Exam (120 minutes); The exam can also be conducted electronically	
Lecture is offered		Every semester	
Applicability		Bachelor study program Chemistry, Bachelor study program Biochemistry, Master study program Chemistry	