

Course title Wykład specjalizacyjny - Podstawy ochrony radiologicznej / Graduate study lecture - Fundamentals of radiation protection		ECTS code 13.3.1099	
Name of unit administering study Faculty of Chemistry			
Studies			
Field of study	Type	Form	
Chemistry	Master	Full-time studies	
Teaching staff dr hab. Dagmara Strumińska-Parulska, prof. UG; dr Grzegorz Olszewski			
Forms of classes, the realization and number of hours		ECTS credits 3	
A. Forms of classes, in accordance with the UG Rector's regulations lecture		classes - 30 h tutorial classes – 10 h	
B. The realization of activities In-class studies		student's own work – 35 h	
C. Number of hours 15 h - lecture		Total: 75 h - 3 ECTS	
The academic cycle First year, summer semester			
Type of course Obligatory		Language of instruction Polish	
Teaching methods Lecture with multimedia presentation		Form and method of assessment and basic criteria for evaluation or examination requirements	
		A. Final evaluation, in accordance with the UG study regulations	
		B. Assessment methods Oral exam	
		C. The basic criteria for evaluation or exam requirements Writing exam 1. Evaluation criteria in accordance with the UG Studies Regulations; 2. Positive mark from the oral exam and activity during the classes	
Required courses and introductory requirements no requirements			
Aims of education Acquaint the students with radiation protection			
Course contents Ionizing radiation. Sources of ionizing radiation. Biological effect of ionizing radiation. Differences in the biological effectiveness of individual types of ionizing radiation. Radiation doses and dose equivalent. Radiation Exposure. Dosimetric instruments. Basic principles and standards of radiation protection; professionally exposed staff and patients. Preventive examinations and case-law regarding radiation damage.			

Bibliography of literature

A. Literature required to pass the course

Dahlgaard H., Nordic Radioecology: The Transfer of Radionuclides through Nordic Ecosystems to Man, Elsevier, 1994,
Frontasyeva M., Pereygin V., Vater P., Radionuclides and Heavy Metals in Environment, Springer, 2001
Stabin M., Radiation Protection and Dosimetry, Springer, 2007.

B. Extracurricular readings

Knowledge

1. knows and understands the basic concepts related to radiochemistry, radiology, radiotoxicity and radiation protection,
2. has knowledge of the impact of ionizing radiation on living organisms,
3. understands the concept of radiotoxicity and knows its groups,
4. has knowledge of the sources of origin of radionuclides in the human body,
5. knows how to counter exposure to ionizing radiation,
6. knows what are the radiological effects of radionuclide content in building materials,
7. knows the radiological effect of disasters at the Chernobyl and Fukushima nuclear power stations,
8. knows the basic standards of radiation protection.

Skills

1. understands the basic concepts of radiochemistry and radiotoxicology,
2. knows how to assess the radiological effects of human absorption of radionuclides from air, water and food, and as a result of smoking,
3. is able to assess the most important radioactive threats to humans and knows how to limit them,
4. has the ability to calculate radiation doses and weaken ionizing radiation through shields.

Social competence

1. understands the need for further education in the field of radiation protection,
2. shows creativity in limiting the absorption of radionuclides by humans and makes society aware of the effects of excessive incorporation of radionuclides,
3. is able to transfer knowledge in society about the sources of radiochemical contamination and the possibilities of reducing exposure to ionizing radiation,