

Program	Level of studies		Second cycle	
	Program name		Physics	
Course name	PHYSICS IN NUCLEAR MEDICINE			
Course ID	Semester	Course status	ECTS credits	L+E
PAP9621	I	ELECTIVE	6	3+3
Lecturer	Prof. dr. Senad Odžak			
Aims and intended learning outcomes	The objective of the course is to give students theoretical and practical knowledge in physics in modern nuclear medicine as well as to prepare students for independent work as medical physicists. The specific objective of the course is to adopt modern methods and techniques used in clinical nuclear medicine. It is expected that students successfully adopt the content of the course and that the acquired knowledge is successfully applied in everyday medical practice.			
Course content				
Introduction. Radionuclides and their production. The Gamma camera. Image quality in Nuclear Medicine. Tomographic reconstruction in Nuclear Medicine. Single Photon Emission Computed Tomography (SPECT). Positron emission tomography (PET). Hybrid systems (SPECT/CT and PET/CT). Digital image processing in Nuclear Medicine. Tracer Kinetic Modeling. Internal Radiation Dosimetry. Radiation Safety in Nuclear Medicine.				
Student workload (hours)		Grading		
Lectures and Exercises	75	Assessment method	Points	
Exam preparation	70	Course Test	50	
Assignments	0	Final Exam	50	
Other	5			
Total	150			
		Total	100	
Literature				
<ol style="list-style-type: none"> 1. Lecture Notes 2. Cherry S.R., J.A. Sorenson, M.E. Phelps, Physics in Nuclear Medicine, Fourth Edition, Elsevier Science (USA), Philadelphia, Pennsylvania, 2012. 3. Hendee W. and E. R. Ritenour, Medical Imaging Physics, (Fourth Edition), John Wiley & Sons, Inc., New York, 2002. 				
Remarks				
Examination requirement is successfully completing practical exercises at Clinical center University of Sarajevo (KCUS). The partial and final exam consists of a theoretical part and multiple assignments. The successful completion of the course implies achieving at least 55% of the total number of points in both the partial and final exam. All examination is done by using the written method.				