

Level: bachelor				
Course title: Medical imaging				
Status: elective				
ECTS: 6				
Requirements: none				
Learning objectives To teach students the main aspects of radiodiagnostics and radiotherapy, including their applications.				
Learning outcomes Understanding the elementary physics principles used in medical imaging and radiology, which are irreplaceable in most areas of diagnostic of different diseases.				
Syllabus <i>Theoretical instruction and Practical instruction</i> Imaging in medicine has a number of medical imaging techniques in order to obtain images of internal structures of a living human body using gamma rays, X-ray or otherwise. The possibility of obtaining relevant information from a living human body through images is widely used both in clinical as well as in research and medicine and this brought a revolution in diagnostics. A common feature of these techniques is that they are non-invasive (without opening the body). Some techniques are projection imaging, and some tomography. Course objective medical imaging with ionizing radiation is to introduce students to the latest developments in this area. Upon completion of the course, students will master the necessary knowledge of physics research in the medical imaging. The physical basis for medical imaging; radionuclides and production of radiopharmaceuticals (cyclotron, reactor, generator); radiation protection and quality control; national and international legal regulations, methods of measurement in nuclear medicine instrumentation (measurement and detection); Gamma camera (Anger, SPECT, etc.) PET; Therapy with radionuclides, metrology aspects of Monte Carlo in Nuclear Medicine.				
Weekly teaching load				Other:
Lectures: 3	Exercises: 1	Other forms of teaching: 1	Student research:	