

Study program: Integrated academic studies in medicine			
Type and level of the study program: integrated academic studies			
Course title: DIAGNOSTIC AND MOLECULAR IMAGING (M5-DMIMG)			
Teacher: Miloš A. Lučić, Mira L. Govorčin, Dušan M. Hadnadev, Viktor E. Till, Sanja S. Stojanović, Duško B. Kozic, Robert R. Semnic, Aleksandra S. Novakov-Mikić, Jovan D. Lovrenski, Katarina M. Koprivšek, Viktorija A. Vučaj-Ćirilović, Dragana D. Đilas, Dragana D. Bogdanović-Stojanović, Olivera R. Nikolić, Silvija M. Lučić, Dijana D. Nićiforović			
Course status: elective			
ECTS Credits: 3			
Condition: -			
Course aim Training students for: 1. Systematic identification and differentiation between the normal anatomical from pathological anatomical structures and tissue/organ functions by using various diagnostic and multiparametric functional/structural/metabolic/molecular diagnostic imaging methods; 2. Recognition of indications for the different diagnostic procedures and understanding of decision-making process on the use of different methods within multiparametric diagnostic algorithms; 3. Mastering advanced diagnostic and functional/structural/metabolic/molecular imaging techniques (computerized tomography, magnetic resonance imaging, radionuclide imaging, positron emission tomography and hybrid imaging methods (PET/CT and PET/MRI), etc.), including dynamic, spectroscopic, diffusion, perfusion and functional imaging; 4. Application of interventional diagnostic and therapeutic methods and procedures.			
Expected outcome of the course: Lectures should provide students with basic and advanced knowledge of diagnostic and functional/structural/metabolic/molecular imaging methods, use of contrast, radionuclide agents and other biomarkers in diagnostic and medical imaging, and use of different imaging techniques in order to obtain optimal diagnostic morphoanatomic and/or functional/structural/metabolic/molecular information, as well as basic knowledge on diagnostic and therapeutic interventional procedures. Additionally, determination of indicator areas for using various imaging and functional/structural/metabolic/molecular methods and interventional procedures, learning different diagnostic and functional/molecular imaging techniques, recognition of pathology, describing and interpretation of findings should be provided.			
Course description <i>Theoretical education</i> 1. Fundamentals of diagnostic and molecular imaging; 2. Chest imaging; 3. Cardiovascular imaging; 4. Imaging of the abdomen; 5. Imaging the urinary tract; 6. Imaging of the pelvis; 7. Musculoskeletal imaging; 8. Breast imaging; 9. Neuroradiological imaging 1; 10. Neuroradiological imaging 2; 11. Magnetic resonance spectroscopy and functional MRI; 12. Fetal diagnostic imaging; 13. Interventional radiology procedures; 14. Radionuclide imaging; 15. Hybrid PET/CT and PET/MRI imaging. <i>Practical education: exercises, other forms of education, research related activities</i> Practical training corresponds to aforementioned theoretical topics.			
Literature <i>Compulsory</i> 1. Suetens P. Fundamentals of Medical Imaging, 2 nd ed. Cambridge University Press, 2009. 2. Adam A, Dixon AK (eds.). Grainger & Allison's Diagnostic Radiology - A Textbook of Medical Imaging, 5 th ed. Elsevier Churchill Livingstone, 2008. 3. Diagnostic and molecular imaging (textbook for students of medicine). Cathedra of Radiology, Medical Faculty Novi Sad (in preparation) <i>Additional</i> 1. Lisle DA. Imaging for students. Arnold/Oxford University Press, 2001. 2. Chen MYM, Pope TL, Ott DJ. (eds.) Basic Radiology, 2 nd ed. McGraw Hill Medical, 2011. 3. Ribes R, Luna A, Ros PR. (eds.) Learning Diagnostic Imaging. Springer -Verlag, Berlin Heidelberg, 2008.			
Number of active classes			Other:
Lectures: 15	Practice: 30	Other types of teaching: Research related activities:	
Teaching methods Lectures, practice			
Student activity assessment (maximally 100 points)			
Pre-exam activities	points	Final exam	points
Lectures	20	Written	30
Practices	30	Oral	20
Colloquium			
Essay			