

Study program: Integrated Academic Studies in Medicine			
Course title: Diagnostic and Molecular Imaging			
Teacher: Sanja S. Stojanović, Viktor E. Til, Duško B. Kozić, Miloš A. Lučić, Katarina M. Koprivšek, Olivera R. Nikolić, Viktorija A. Vučaj-Ćirilović, Silvija Lučić, Dijana D. Nićiforović, Nataša M. Prvulović Bunović			
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 morphoanatomical 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</i> Practical training corresponds to aforementioned theoretical topics.			
Literature <i>Compulsory</i> 1. Suetens P. Fundamentals of Medical Imaging. 2 nd ed. 2009, Cambridge University Press 2. Adam A, Dixon AK (eds.). Grainger & Allison's Diagnostic Radiology - A Textbook of Medical Imaging 5th ed. 2008, Elsevier Churchill Livingstone 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. 2001, Arnold/Oxford University Press 2. Chen MYM, Pope TL, Ott DJ. (eds.) Basic Radiology, 2nd Ed. 2011, McGraw Hill Medical 3. Ribes R, Luna A, Ros PR. (eds.) Learning Diagnostic Imaging. 2008, Springer-Verlag, Berlin Heidelberg			
Number of active classes		Theoretical classes: 15	Practical classes: 30
Teaching methods Lectures and practice.			
Student activity assessment			
Pre-exam activities	points	Final exam	points
Lectures	20	Written	30

Practices	30	Oral	20
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