

Study program: Integrated Academic Studies in Medicine			
Course title: Nuclear Medicine			
Teacher: Jasna M. Mihailović, Radmila R. Žeravica, Branislava P. Ilinčić, Nataša M. Prvulović Bunović, Ana J. Jakovljević			
Course status: essential			
ECTS Credits: 2			
Condition: -			
Course aim To provide students with knowledge on basic rules for application of open sources of ionizing radiation and diagnostic and therapeutic options of radioactive isotopes.			
Expected outcome of the course: Obtained knowledge in the field of nuclear medicine provide medical doctor to: A) learn, accept basic clinical indications for nuclear medicine diagnostic procedures for efficient diagnostic and assessment of treatment response. B) to learn how to interpretate nuclear medical scans adequately, to learn about their diagnostic value and limitations C) to apply the knowledge into a clinical practice and to refer patient to a treatment D) to learn how to refer patient to specific nuclear medicine therapeutic procedures			
Course description <i>Theoretical education</i> Include general and special part of nuclear medicine. General part includes: radioactive isotopes and radiation, physical principles of radiation detection and equipment (scintillation detector, gamma camera, well counters, PET), basic principles of radiobiology, radio-pharmacology and radiation protection. Special part includes basic principles of clinical application of nuclear-medicine methods in different clinical conditions, as well as radionuclide therapy: application of radioisotopes in diagnostics of CNS, cardiovascular, respiratory, endocrine, gastrointestinal, hepatobiliar, urinary, musculoskeletal, hematological, oncological, infection and inflammation. Positron emission tomography. Hybrid systems. Radionuclide therapy. <i>Practical education</i> It represents the introduction to the safety rules in nuclear medicine departments, the use of radioisotopes in nuclear-medicine laboratory: features and application, basic principles of radiopharmaceutical preparations, dosimetry, as well as the basic principles of interpretation of nuclear medicine findings, application of radionuclide therapy.			
Literature 1. Mihailovic J, Goldsmith SJ, Killeen R. FDG PET/CT in Clinical Oncology. Case Based Approach with Teaching Points. Berlin Heidelberg: Springer Verlag, 2012. ISBN: 978-3-642-29865-3. 2. Luster M, Duntas LH, Wartofsky L, eds. The thyroid and its disease. Springer International Publishing AG, Switzerland, 2019. 3. D.L. Bailey, J.L. Humm, A. Todd-Pokropek, A. van Aswegen. Nuclear Medicine Physics A Handbook for Teachers and Students. International atomic energy agency Vienna, 2014. 4. Peter F. Sharp, Howard G. Gemmell and Alison D. Murray (Eds). Practical Nuclear Medicine Third Edition. Springer-Verlag, London, 2005 5. Fred A. Mettler, Milton J. Guiberteau. Essentials of Nuclear Medicine and Molecular Imaging. Elsevier, 2018. eBook ISBN: 9780323567893 6. Duccio Volterrani, Paola Anna Erba, Ignasi Carrió, H. William Strauss, Giuliano Mariani. Nuclear Medicine Textbook. Methodology and Clinical Applications. Springer Nature Switzerland AG 2019 Available as hardcover, EPUB and PDF 7. Shankar Vallabhajosula. Molecular Imaging and Targeted Therapy. Radiopharmaceuticals and Clinical Applications. Springer Nature Switzerland AG 2023. Available as hardcover, EPUB and PDF			
Number of active classes		Theoretical classes: 15	Practical classes: 15
Teaching methods: Theoretical lectures, Practices; Essays			
Student activity assessment (maximally 100 points)			
Pre-exam activities	points	Final exam	points
Lectures	10	Written-practices	20

Practices		Oral	50
Colloquium	20		
Essay			