

Study program: Integrated Academic Studies in Medicine			
Course title: Introduction to Experimental Neuroscience			
Teachers: Ivan Đ. Čapo, Dušan M. Lalošević, Matilda A. Đolai, Bojana M. Andrejić Višnjić, Jelena Ilić Sabo, Jelena Amidžić, Dušica L. Marić			
Course status: elective			
ECTS Credits: 3			
Condition: -			
Course aim: Acquiring knowledge and skills in the field of experimental neuroscience fundamentals.			
Expected outcome of the course:			
Knowledge: Students should acquire the basics of histochemical and immunohistochemical characteristics of brain tissue of both human and animal origin. Also, the students should know the basics of experimental models such as neuroembryonic development and disorders, neuroinfection, Parkinson's disease, neuro-oncology and neurointoxication.			
Skills: The student should be able to recognize the characteristics of immunohistochemical staining of brain tissue of human and animal origin at the level of light microscopy, as well as the basic characteristics of theoretically presented experimental models.			
Course description			
<i>Theoretical education</i>			
Development and evolution of experimental neuroscience; Using of microscope in analysis and evaluation of brain tissue; Histological specificity and differences of human and animal brain tissue; Immunohistochemical analysis and cell classification in brain tissue; Experimental neuroembryology; Experimental model of Parkinson's disease, neuroinfections, neurotoxicology, neurooncology, neuroembryology and developmental disorders. Application of fractal brain analysis; Consultation hours for preparation of exam			
<i>Practical education</i>			
Base of gross analysis and dissection of adult and fetal brain; Analysis of histochemically and immunohistochemically stained material of human and animal nerve tissue; Stereotaxic atlases and stereotaxic experimental neurosurgery; Histological plaque analysis of the experimental model of Parkinson's disease, neuroinfection, neurodevelopmental disorders, neuro-oncology, as well as neurotoxicological conditions; Fractal analysis and interpretation of branching neurons; Use of computer software in the analysis and processing of microscopic photographs; Recapitulation and preparation for the exam.			
Literature			
<i>Compulsory</i>			
1. Abstract book / 2nd Neuro-MIG Training School „Pathology of brain malformation“. Novi Sad: Faculty of Medicine, University of Novi Sad; 2018.			
2. Snyder JM, Hagen CE, Bolon B, Keen CD. Nervous system. In: Treuting PM, Dintzis SM, Montine KS. Comparative Anatomy and Histology A Mouse, Rat, and Human Atlas 2 nd ed. San Diego: Elsevier; 2017.			
3. Ferry B, Gervasoni D, Vogt C. Stereotaxic Neurosurgery in Laboratory Rodent- Handbook on Best Practices. New York: Springer Verlag; 2014.			
4. Paxinos G, Watson C. The rat brain in stereotaxic coordinates. 6 th ed. San Diego: Elsevier; 2007.			
<i>Additional</i>			
Students will be informed about necessary literature for each unit.			
Number of active classes		Theoretical classes: 30	Practical classes: 15
Teaching methods:			
Lecture and Practice			
Student activity assessment (maximally 100 points)			
Pre-exam activities	points	Final exam	points
Lectures	20	Written	50
Practices	10	oral	
Colloquium			
Essay	20		