

1. COURSE DESCRIPTION – GENERAL INFORMATION			
1.1. Course teacher	Professor Mirna Sučić, PhD	1.6. Year of study	1 st
1.2. Name of the course	Cytology and Histology	1.7. Credit value (ECTS)	5.5
1.3. Associate teachers	-	1.8. Type of instruction (number of hours L+E+S+e-learning)	30+10+5
1.4. Study programme (undergraduate, graduate, integrated)	Medical Biochemistry integrated study programme	1.9. Expected enrolment in the course	25
1.5. Status of the course	Compulsory	1.10. Level of use of e-learning (1, 2, 3 level), percentage of instruction in the course on line (20% maximum)	2 nd
2. COURSE DESCRIPTION			
2.1. Course objectives	To learn essentials of human histology and human cell cytology, apply knowledge of human histology and cytology with specific cell physiology, anatomy and physiology of tissues and organ systems; learn about standard and new techniques of cell and tissue specimen preparation for microscope analysis; recognise essential cytology of inflammation and tumor cells.		
2.2. Enrolment requirements and required entry competences for the course	None.		
2.3. Learning outcomes at the level of the study programme to which the course contributes	<ul style="list-style-type: none"> Evaluating the clinical relevance of diagnostic indicators of basic cytomorphology and histology of normal cells and normal tissue and of cytomorphology of inflammation and tumor cells. Implementation of standard and new technical methods (laboratory techniques for cell and tissue specimen preparation for microscope analysis) for detecting and follow-up of disease and treatment monitoring. 		
2.4. Expected learning outcomes at the level of the course (4-10 learning outcomes)	<p>At the end of the course the trainee will be able to:</p> <ol style="list-style-type: none"> Apply fundamental knowledge of histology of tissue and histology of organ systems with essentials of human anatomy; Apply fundamental knowledge of various cell cytology and histology of tissue and histology of organ systems with cell, tissue and organ system physiology; Describe and define laboratory techniques for preparing cell and tissue specimens for microscope analysis; Describe and recognise cells of specific tissues and organ systems; 		

	<p>5. Describe and recognize specific histologic tissues;</p> <p>6. Describe and recognize cytomorphology of inflammation and tumors.</p>		
<p>2.5. Course content broken down in detail by weekly class schedule (syllabus)</p>	<p>LECTURES:</p> <ul style="list-style-type: none"> • Cell and tissue techniques for microscope analysis. • Cell, cell organelles and cell cycle. • Epithelial and connective tissue. • Adipose tissue and cartilage. • Bone tissue and muscle tissue. • Nervous tissue. Cardiovascular and lymph vascular systems. • Hemopoietic tissue. Development of hemopoietic cells, hemopoietic cells. • Lymphatic (immunological) system. Endocrine system. • Urinary system. Respiratory system. • Digestive system and digestive glands. • Male reproductive system. Skin. • Female reproductive system. Sensory organs. <p>SEMINARS:</p> <ul style="list-style-type: none"> • Cytochemical and immunocytochemical techniques. <i>Telomerase</i>. • Morphology of epithelial tissue. <i>Desmosomes</i>. • Morphology of connective and adipose tissue. <i>Mitochondria and oxidative phosphorylation</i>. • Morphology of cartilage and bone tissue. <i>Bone morphogenic proteins</i>. • Morphology of muscle tissue and nervous tissue. <i>Alzheimer's disease</i>. • Morphology of cardiovascular and lymph vascular systems. <i>Atherosclerosis</i>. • Morphology of hemopoietic cells. <i>Stem cells</i>. • Morphology of lymphatic system and endocrine system. <i>Melatonin</i>. • Morphology of respiratory system and urinary system. <i>Epithelial metaplasia and smoking</i>. • Morphology of digestive system and digestive glands. <i>Intrinsic factor and B12</i>. • Morphology of male and female reproductive system. <i>Human Papillomavirus</i>. • Skin and sensory organs morphology. <i>Pheromones</i>. <p>EXERCISES:</p> <ul style="list-style-type: none"> • Recognition of respiratory epithelial cells, urine epithelial cells, mesothelial effusion cells and hemopoietic bone marrow cells. Essentials of cytochemical and immunocytochemical techniques. • Recognition of histology of specific tissues and specific organ systems. Recognition of cytomorphology of inflammation and tumor cells. 		
<p>2.6. Type of instruction</p>	<p>lectures seminars and workshops exercises online in entirety mixed e-learning</p>	<p>independent study multimedia and the internet laboratory work with the mentor (other)</p>	<p>2.7. Comments: Fonts in <i>italic</i> indicate students seminars.</p>

	field work				
2.8. Student responsibilities	Regular attendance of classes; active participation in seminars, practical test of exercises classes, final exam (written test)				
2.9. Screening of student's work (specify the proportion of ECTS credits for each activity)	Class attendance	1	Research		Practical training
	Experimental work		Report		
	Essay		Seminar essay	1	(Other--describe)
	Tests		Oral exam		(Other—describe)
	Written exam	3.5	Project		(Other—describe)
2.1. Grading and evaluation of student work over the course of instruction and at a final exam	Final exam;(written test), practical test of exercises classes, credits for regular attendance of classes, credits for active participation in seminars.				
2.2. Required literature (available at the library and via other media)	Title				
	Junqueira LC, Carneiro J. Osnove histologije, Školska knjiga, 2005.				
	Junquera LC, Carneiro J, Kelly RO. Osnove hisologije. Školska knjiga, Zagreb 1999.				
	Sučić M. Osnove citologije i histologije, priručnik za nastavu, FBF, 2006.				
	Sučić M. Šoljić V. Osnove citologije i histologije, skripta, FBF, 2014.				
2.12. Optional literature	-				
2.13. Methods of monitoring quality that ensure acquisition of exit competences	Learning outcomes 1-6 will be tested by written exam. Outcomes 4-6 will additionally be tested during the laboratory work.				