Appendix 5
to Resolution No. 15630
of Senate of Wroclaw Medical University
of 30 March 2016

Syllabus 2020/2021

Description of the course

Module/Course	**Histology with cytophysiology (1)**	Group of detailed education results	
		Group code A B	Group name Morphological Science Scientific basis of medicine
Faculty	**Medicine**		
Major	**Medicine**		
Specialties	**Not applicable**		
Level of studies	Uniform magister studies X 1st degree studies ☐ 2nd degree studies ☐ 3rd degree studies ☐ postgraduate studies ☐		
Form of studies	X full-time X part-time		
Year of studies	I	Semester	☐ Winter X Summer
Type of course	X obligatory ☐ limited choice ☐ free choice / elective		
Course	major X basic		
Language of instruction	☐ Polish X English ☐ other		

* mark ☐ with an X

Number of hours

Form of education

Unit teaching the course	Lectures (L)	Seminars (SE)	Auditorium classes (AC)	Major Classes – not clinical (MC)	Clinical Classes (CC)	Laboratory Classes (LC)	Classes in Simulated Conditions (CSC)	Practical Classes with Patient (PCP)	Specialist Classes – magister studies (SCM)	Foreign language Course (FLC)	Physical Education obligatory (PE)	Vocational Practice (VP)	Self-Study (Student's own work)	E-learning (EL)
Winter Semester														
Summer Semester														

Division of Histology and Embryology	10			40										
TOTAL per year: 50														
Department of Human Morphology Division of Histology and Embryology	10			40										

Educational objectives (max. 6 items)
C1. the principles of the basic techniques used in the morphological studies,
C2. the organization of the cell model with cell organelles, their structure and functions,
C3. structure and function of selected, important specialized cells,
C4. classification, characteristics, origin, histological organization and role of the tissues,
C5. histological organization of organs and systems and their role and the basic mechanisms that regulate their functions

Education result matrix for module/course in relation to verification methods of the intended education result and the type of class

Number of course education result	Number of major education result	Student who completes the module/course knows/is able to	Methods of verification of intended education results (forming and summarising)	Form of didactic class ***enter the abbreviation*
K 01	AW1.	The student is familiar with histological nomenclature;	Oral response, written examination	L, MC
K02	AW4.	The student knows the basic cell structures and their functional specialization	Oral response, written examination	L, MC
K03	AW5.	The student knows the microarchitecture of the tissues, extracellular matrix and organs.	Oral response, written examination, proper drawing preparation	L, MC
K04	B.W14.	The student knows function of the genome, transcriptome and proteome of the human and essential methods used in their analyses, and describes the process of replication, DNA repair and recombination, transcription and translation, and degradation	Oral response, written examination	L, MC

		of DNA, RNA and protein, knows gene regulation concepts		
K05	B.W17.	The student knows the ways of communication between cells, and between the cell and extracellular matrix, and signal transduction pathways in the cell, and examples of disorders in these processes leading to the development of neoplastic and other diseases	Oral response, written examination	L, MC
K06	B.W18.	The student is familiar with processes such as cell cycle, proliferation, differentiation, and cell aging, apoptosis and necrosis, and understands their importance to the functioning of the body.	Oral response, written examination	L, MC
K07	B.W19.	The student is familiar with the basic issues of stem cells and their use in medicine	Oral response, written examination	L, MC
K08	B.W20.	The student knows the basics of stimulation and conduction in the nervous system, and higher nervous activity and physiology of smooth muscle fibers and functions of the blood.	Oral response, written examination, proper drawing preparation	L,MC
S01	A.U1	The student knows how to use optical microscope	Practical examination	MC
S02	A.U2	The student recognizes in images from optical or electron microscope histological structures corresponding to the organs, tissues, cells and cellular structures, shall describe and interpret their structure and the relationship between structure and function	Oral response, written examination, proper drawing preparation, practical examination	MC
S03	A.U5	The student properly uses the spoken and written histological nomenclatures.	Oral response, written examination, practical examination	MC

** L - lecture; SE - seminar; AC – auditorium classes; MC – major classes (non-clinical); CC – clinical classes; LC – laboratory classes; SCM – specialist classes (magister studies); CSC – classes in simulated conditions; FLC – foreign language course; PCP practical classes with patient; PE – physical education (obligatory); VP – vocational practice; SS – self-study, EL – E-learning .

Please mark on scale 1-5 how the above effects place your classes in the following categories:

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ECTS points for module/course Communication of knowledge, skills or forming attitudes: Lectures Knowledge: 5 Skills:4 Social competences: 3

(class participation, activity, preparation, etc.)	
1. Contact hours:	50
2. Student's own work (self-study):	20
Total student's workload	70
	4.0
Comments	

1. Epithelial tissue: epithelia and glands, cell surface specializations, intercellular connections. (1 hour)
2. Connective tissue: connective tissue cells and extracellular substance. Connective tissue proper (reticular tissue, yellow and brown adipose tissue, tendon tissue). (1 hour)
3. Cartilage: structure, function, types. (1 hour)
4. Bone tissue: function, structure, types. Bone development. (1 hour)
5. Nervous tissue. (1 hour)
6. Blood, blood cells and hemopoiesis. (1 hour)
7. Muscle tissue: types of contractile cells and their function. (1 hour)
8. Heart and vascular system. (1 hour)
9. Immune system: cells of the immune system, structure and function of the immune system. (1 hour)
10. The digestive tract: the oral cavity and its equipment, the conducting sections and the digestive part. (1 hour)

Content of classes

1. Histological techniques, microscopy, cell structure and function. Instruction and presentation of the class rules (presented slides - examples of different staining techniques: H + E, AZAN, silvering, injection). (3 hours)
2. Epithelial tissue: epithelia and glands, cell surface structures, intercellular connections (presented slides: simple cuboidal, columnar epithelium, transitional and stratified squamous epithelium). (3 hours)
3. Connective tissue: connective tissue cells and extracellular matrix - structure and function. (presented slides: reticular tissue, loose connective tissue, dense fibrous tissue irregular, white adipose tissue) (3 hours)
4. Support cell family: cartilage (presented preparations: hyaline cartilage, elastic cartilage, fibrous cartilage) (3 hours)
5. Supporting tissues family: bone tissue and bone development (presented slides: compact

Seminars

Practical classes

bone tissue - longitudinal and transverse section, ossification on membranous base and cartilage). (3 hours)
6. Muscle tissue: types of contractile cells and their function (presented preparations: smooth muscle, transverse striated skeletal and cardiac). (3 hours)
7. Nervous tissue: neuron structure, neuron classification, histological organization of nerve cells; glial cells - types and function. (presented preparations: Nissle's bodies in nerve cells, pear-shaped cell, nerve trunk in longitudinal and transverse section) (3 hours)
8. Blood: blood cells and hemopoiesis. Heart and vascular system (presented preparations: human blood - smear, capillaries, artery and muscle vein, aorta, large vein)
(3 hours).
9. Immune system: cells of the immune system, structure and function of the immune system (presented preparations: lymph node, young thymus and thymus involution, palatine tonsil, spleen). (3 hours)
10. Gastrointestinal tract part I: oral cavity and its equipment, general structure of the oral cavity wall, salivary glands - structure and function, morphological characteristics differentiating secretory sections of salivary glands (presented preparations: tongue, oral lip, parotid and sublingual salivary glands) (3 hours)
11. The gastrointestinal tract part II: the tooth organ - the structure of the tooth and periodontium; the lower part of the gastrointestinal tract - general diagram of the structure of the gastrointestinal tract, the construction of the esophagus and stomach (presented preparations, the decalcified tooth, tooth in situ, esophagus, stomach - fundus) (3 hours),
12. The digestive tract part III: c.d. the lower part of the gastrointestinal tract - the small intestine - the structure of the small intestinal mucosa, characteristic features of individual sections of the small intestine; large intestine (presented preparations - duodenum, jejunum and ileum, large intestine, appendix). (3 hours)
13. Repetition part I - general histology (2 hours)
14. Repetition part II - general histology (2 hours)

- not applicable
-not applicable
Other **not applicable**
Basic literature (list according to importance, no more than 3 items) 1. Basic Histology. L. Carlos Junqueira, Jose Carneiro, Robert O. Kelly 2. Human Histology. Alan Stevens, James Lowe 3. Exercise notebook for medicine and dentistry student (ed. Maciej Zabel). Elsevier Urban & Partner, Wrocław 2010 Additional literature and other materials (no more than 3 items) 1. Histology and Cell Biology: An Introduction to Pathology. Abraham Kierszenbaum 2. Histology: a text and atlas. Michael H. Ross, Gordon I. Kaye, Wojciech Pawlina 3. Medical Cell Biology. Steven R. Goodman
Didactic resources requirements (e.g. laboratory, multimedia projector, other...)

Classroom with optical microscopes, Microscope with computer and multi-media projector , laptop, whiteboard with markers, histological slides
Preliminary conditions (minimum requirements to be met by the student before starting the module/course) -
Conditions to receive credit for the course: Each absence must be made up during make up and repetition week, including rector's days or dean's hours. **The condition for passing the subject is in oral or written form of each individual exercises (acceptable lack of credit - 3 exercises) and passing the test from general histology (form: written, 10 open questions, maximum number of points 30, to pass the required minimum 18 points). Other criteria are presented in the table below. The grade obtained from the general histology test is the final grade for passing the semester.**

Grade:	Criteria for course
Very Good (5.0)	**28-30 pts**
Good Plus (4.5)	**26-27 pts**
Good (4.0)	**24-25 pts**
Satisfactory Plus (3.5)	**21-23 pts**
Satisfactory (3.0)	**18-20 pts**

Grade:	Criteria for exam (if applicable)
Very Good (5.0)	
Good Plus (4.5)	
Good (4.0)	
Satisfactory Plus (3.5)	
Satisfactory (3.0)	

Name of unit teaching course:	**Division of Histology and Embryology, Wroclaw Medical University**
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Person responsible for course:	**Marzenna Podhorska-Okolow MD, PhD, Prof.**
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Marzenna Podhorska-Okołów	MD, PhD, Prof.	Medical science	professor	Classes (MC) Lectures,

List of persons conducting specific classes:	*degree/scientific or professional title*	*Discipline*	*Performer profession*	*Form of classes*
Urszula Ciesielska	PhD		adjunct	classes - L, MC
Christopher Kobierzycki	MD, PhD	Medical science	adjunct	Lectures, classes – L, MC
Katarzyna Haczkiewicz-Leśniak	PhD	Medical science	adjunct	Classes – MC
Karolina Jabłonska	PhD	Medical science	adjunct	Classes - MC

Date of Syllabus development

31.05.2020.

Syllabus developed by PhD

Urszula Ciesielska

Signature of Head of teaching unit

Uniwersytet Medyczny we Wrocławiu
ZAKŁAD HISTOLOGII I EMBRIOLOGII
Kierownik
prof. dr hab. Piotr Dzięgiel

Signature of Faculty Dean

Wrocław Medical University
Faculty of Medicine
Vice-Dean for English Studies
prof. Beata Sobieszczańska, PhD