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

Syllabus 2017/2018

Description of the course

Module/Course	**Histology with cytophysiology (2)**	Group of detailed education results	
		Group code A, B	Group name Morphological Science
Faculty	**Medicine**		
Major	**medicine**		
Specialties	**Not applicable**		
Level of studies	**Uniform MA Studies X**		
Form of studies	full-time X part-time		
Year of studies	II	Semester	X Winter 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														
Histology and Embriology Department	10			60										
Summer Semester														
TOTAL per year:														

	10			60										

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*
W 01	AW1	The student is familiar with histological nomenclature;	Oral response, written examination	L, MC
W02	AW4	The student knows the basic cell structures and their functional specialization	Oral response, written examination	L, MC
W03	AW5	The student knows the microarchitecture of the tissues, extracellular matrix and organs.	Oral response, written examination, proper drawing preparation	L, MC
W04	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 of DNA, RNA and protein, knows gene regulation concepts	Oral response, written examination	L, MC
W05	B.W21	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	Oral response, written examination	L, MC

		other diseases		
W06	B.W22	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
W07	B.W23	The student is familiar with the basic issues of stem cells and their use in medicine	Oral response, written examination	L, MC
W08	B.W24	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
U 01	AU1	The student knows how to use optical microscope	Practical examination	MC
U 02	AU2	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
U03	A U3	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: communication of knowledge, skills or forming attitudes:
Knowledge: 5
Skills:4
Social competences: 3

Student's amount of work (balance of ECTS points)	
Student's workload (class participation, activity, preparation, etc.)	Student Workload (h)

1. Contact hours:	70
2. Student's own work (self-study):	114
Total student's workload	184
ECTS points for module/course	10
Comments	

Lectures (L)

1. Alimentary tract: liver and pancreas. (1h)
2. Endocrine system: the hypothalamus, pituitary gland, thyroid and parathyroid, adrenal, pancreas, ovary and testis, neuroendocrine system. (1h)
3. Respiratory: conductive and respiratory parts. (1h)
4. Urinary system: kidney structure and function of the nephron – corpuscle and tubules. (1h)
5. Reproductive system: male and female: ovary and uterus, testis and epididymis, hormonal control. (1h)
6. Nervous system: structure and function of neurons, glial tissue, central and peripheral nervous system. (1h)
7. The skin and mammary gland. (1h)
8. Sensory organs: eye and ear. (1h)
9. Recognition of histological sections (repeat). (1h)
10. Recognition of histological sections (repeat). (1h)

Content of histology classes (CM):

1. Alimentary tract: the digestive glands. Presentation: liver and pancreas. (3h)
2. Endocrine system: the hypothalamus, pituitary gland, thyroid and parathyroid, adrenal, pancreas, neuroendocrine system. Presentation: pituitary, thyroid, parathyroid, adrenal gland. (3)
3. Respiratory: conductive and respiratory parts. Presentation: nasal cavity, trachea, lung. (3h)
4. Urinary system: kidney structure and function of the nephron – corpuscle and tubules. Presentation: Kidney, ureter, urinary bladder. (3h)
5. Reproductive system: male and female: ovary and uterus, testis and epididymis, hormonal control. Presentation: ovary, fallopian tube, uterus, testis, epididymis, vas deferens, prostate. (3H)
6. Nervous system: structure and function of neurons, glial tissue, central and peripheral nervous system. Presentation: the spinal cord, nerve ganglia, brain, cerebellum, nerve trunk. (3h)
7. The skin and mammary gland. Presentation: eye - the front part, the eye - the optic disc, eyelid, inner ear. (3h)
8. Sensory organs: eye and ear. (3h)
9. Recognition of histological sections (repeat). (3h)
10. Recognition of histological sections (repeat). (3h)

Cytophysiology classes (CM):

1. Testing methods of structure and function of cells, ultrastructural images of cells with an electron microscope. Presented electronograms: nucleus, nucleolus, nuclear envelope, mitochondria, Golgi apparatus, rough endoplasmic reticulum, free ribosomes. (3h)
2. The organization and functioning of the cell nucleus. Genes and genetic engineering. (3h)
3. Biological membranes and membrane transport. (3h)
4. Cell cycle and aging of cells. (2h)

5. Types of cell death: apoptosis, autophagy, necrosis. (3h)
6. The cytoskeleton. (2h)
7. Selected cytoplasmic processes. (2h)
8. Intercellular communication. (2)
9. Adhesion molecules and intercellular substance. (2h)
10. Basics of immune defence. (2h)
11. Endothelium. (2h)
12. Carcinogenesis. (2h)
13. Repetitory (2h)

Seminars - not applicable

1.
2.
3.

Practical classes -not applicable

1.
2.
3.

Other - not applicable

1.
2.
3.
etc. ...

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...)
Classrooms with optical microscopes, optical microscope with camera and monitor, laptop, multimedia projector, whiteboards with markers, histological slides

Preliminary conditions (minimum requirements to be met by the student before starting the module/course)
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Conditions to receive credit for the course:

1. Test of practical skills: 10 slides from general histology, 5 slides from detailed histology with pointed elements, 2 electronograms. To pass correctly have to be distinguished at least 7 slides from general histology, 3 from detailed histology and 1 electronogram.
2. Cytophysiology test, written, 50 questions multiple choice. For credit 26 correct answers is required.

The condition for admission to the final examination of the theoretical: completion of the second semester

Grade:	Criteria
Very Good (5.0)	Point range depending on Gauss classification
Good Plus (4.5)	Point range depending on Gauss classification
Good (4.0)	Point range depending on Gauss classification
Satisfactory Plus (3.5)	Point range depending on Gauss classification
Satisfactory (3.0)	Point range depending on Gauss classification. Minimum 50% correct answers

Name and address of module/course teaching unit, contact: telephone and e-mail address

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Coordinator / Person responsible for module/course, contact: telephone and e-mail address

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List of persons conducting specific classes:

1. **Marzenna Podhorska-Okolow MD, PhD, Prof.(profesor, medicine) - classes (CM)**
2. **Urszula Ciesielska PhD (adiunct, medical biology) – lectures, classes - L, CM**
3. **Christopher Kobierzycki MD, PhD (adiunct, medicine,) lectures, classes – L, CM**
4. **Katarzyna Haczkiewicz PhD (assistant, medical biology) - classes – CM**
5. **Karolina Jabłońska Phd (adiunkt, medical biology)- classes - CM**

Date of Syllabus development

27. 06. 2017

Syllabus developed by

Urszula Ciesielska PhD

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

Signature of Head of teaching unit

.....

Signature of Faculty Dean

.....

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WYDZIAŁ LEKARSKI
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