Załącznik nr 5 do zarządzenia nr 189/2025

COURSE SPECIFICATION

Course code: 0912.7.LEK.B.H

Course title in Polish: Histologia i ultrastruktura komórki
Course title in English: Histology and cell ultrastructure

1. Placement of the course within the study programme

1.1. Field of study	medicine
1.2. Mode of study	full-time
1.3. Level of study	uniform Master's study
1.4. Profile of study	General academic
1.5. Course specification author	dr Agnieszka Radowicz-Chil
1.6. Contact	agnieszka.radowicz-chil@ujk.edu.pl

2. Generał characteristics of the course

2.1. Language of instruction	English
2.2. Entry requirements	

3. Detailed characteristics of the course

3.1. Type of classes	Lectures, Classes, Practical classes, Laboratories
3.2. Place of course delivery	Courses in the teaching rooms of UJK
3.3. Form of assessment	Exam Credit with grade
3.4. Teaching methods	Lecture Classes: Presentation and explanation of histological preparations Practical classes Laboratories: Microscopy of human tissues and organs
3.5.a. Basic reading list	Stevens & Lowe's Human Histology James S. Lowe, Peter G. Anderson, Susan I. Anderson 2024
3.5.b. Supplementary reading list	Gartner, L. P., & Hiatt, J. L. (2021). Color Textbook of Histology. Ross, M. H., & Pawlina, W. (2020). Histology: A Text and Atlas.

4. Objectives, content and learning outcomes

4.1. Course objectives (taking into account the form of classes)

Lectures

- **CO1.** Students will understand the fundamental principles underlying the microscopic structure and function of the human body.
- **CO2.** Students will learn the interrelationship between different organs and systems at the microscopic levels.
- **CO3.** Students will be able to integrate theoretical knowledge to explain histological structures in relation to understand basis of disease

Classes

- **CO1.** Develop the ability to analyze and discuss selected topics in histology
- **CO2.** Apply theoretical knowledge to problem-solving and case analysis.

- **CO3.** Describe the microscopic organization of different organs and systems in relation to their function.

Practical Classes

- **CO1.** Acquire skills in identifying histological structures on digital slides.
- **CO2.** Learn techniques for preparing and examining microscopic slides.
- **CO3.** Develop practical competence in linking structure to function through laboratory experiments and demonstrations.

Laboratories

- **CO1.** Develop skills in identifying cells, tissues and organs in histological slides using light microscopy.
- **CO2.** Acquire practical skills in microscope operation and learn the basic principles of histological specimen preparation and staining.
- **CO3.** Develop the ability to relate the microscopic structure of tissues and organs to their functions and recognise the features of normal histology.

4.2. Course content (taking into count the form of classes)

Lectures

1. General Histology of Cells and Tissues
2. Introduction to histology: definition, methods, and significance.
3. The cell: structure, organelles, and basic functions.
4. Overview of basic tissues:
   Epithelial tissue: types, structure, and functions.
   Connective tissue: types, components, and special connective tissues.
   Muscle tissue: classification, structure, and contractile mechanisms.
   Nervous tissue: neurons, neuroglia, and synapses.
5. Systemic Histology (Microscopic Anatomy of Organs)
6. Histological structure and organization of major organ systems:
   Integumentary system
   Circulatory system (heart, vessels)
   Lymphoid organs
   Digestive system and accessory glands
   Respiratory system
   Urinary system
   Male and female reproductive systems
   Endocrine glands
   Nervous system and special sense organs

Classes

1. Introduction to light microscopy and digital slide examination. Basic principles of histological specimen preparation and staining.
2. Microscopic identification of cells and their components: nuclei, cytoplasm and selected organelles.
3. Epithelial tissue: identification and classification of surface epithelia and glands.
4. Connective tissue: identification of cells, fibres and extracellular matrix; comparison of connective tissue types.
5. Cartilage and bone: microscopic structure, classification and bone formation.

6. Blood and haemopoietic tissues: identification of blood cells and the organisation of bone marrow.
7. Muscle tissue: identification and comparison of skeletal, cardiac and smooth muscle.
8. Nervous tissue: identification of neurons, neuroglia, peripheral nerves and ganglia.
9. Integumentary system: microscopic examination of skin and its appendages.
10. Circulatory system: identification of the heart and different types of blood and lymphatic vessels.
11. Lymphoid organs: microscopic examination of the thymus, lymph nodes, spleen and tonsils.
12. Digestive system: identification of the different regions of the alimentary tract, liver, gallbladder and pancreas.
13. Respiratory system: microscopic examination of the conducting airways and lungs.
14. Urinary system: identification of renal structures and the urinary passages.
15. Male reproductive system: microscopic examination of the testes, reproductive ducts and accessory glands.
16. Female reproductive system: microscopic examination of the ovaries, uterine tubes, uterus and vagina, including cyclic changes; structure of the mammary gland.
17. Endocrine system: identification of the pituitary, thyroid, parathyroid and adrenal glands and pancreatic islets.
18. Nervous system and special sense organs: microscopic examination of the spinal cord, cerebrum, cerebellum, eye and ear.
19. Integrated slide revision: identification of tissues and organs and interpretation of relationships between their microscopic structure and function.

Practical classes

1. General Histology of cells and tissues
2. Systemic Histology (Microscopic Anatomy of Organs)

Laboratories

1. Dentification and labeling of slides and digital slides covering:
   Basic tissues (epithelium, connective, muscle, nerve)
   Organs of all major systems

4.3. Course learning outcomes

Course learning outcomes (code)	Upon completion of the course, the student	Alignment with programme learning outcomes
	in the area of knowledge knows and understands:	
W01	Human anatomy topographically and functionally, including topographical relations between individual organs along with anatomical, histological and embryological terminology in Polish and English	A.W1.
W02	Basic cellular structures and their functional specifications	A.W2.
W03	Microarchitecture of tissues, extracellular matrix and organs	A.W3.
	in the area of skills knows how to:	
U01	Operate the optical microscope, also making use of immersion	A.U1.
U02	Recognize histological structures of organs, tissues, cells and cellular structures on the optical or histological microscope images, describe and interpret the structure and relations between the structure and the function	A.U2.
	in the area of social competences is able to:	

K01	recognize his/her own limitations and self-evaluate educational deficiencies and needs	K.S5.
K02	use reliable information sources	K.S7.
K03	conclude on the basis of own surveys and observations	K.S8.

4.4. Assessment methods for learning outcomes

Assessment method (+/-)

Course learning outcomes (code)	Oral/written/ practical examinaion /other (specify)*	Test*	Project*	In-class activity*	Independent study*	Group work*	Other (Observation)*

Type of classes

1: / 2:	L	C	PC	L	C	PC	L	C	PC	L	C	PC	L	C	PC	L	C	PC	L	C	PC
W01	+			+																	
W02	+			+																	
W03	+			+																	
U01					+	+															
U02					+	+															
K01-K03														+			+				

Annotation. 1: form of classes; 2: learning outcomes

4.5. Assessment criteria for learning outcomes

Type of classes:

LECTURE (L) (including classes conducted with the use of distance learning methods and techniques)

Grade	Assessment criteria
3,0	Learning programme content on the basic level, replies chaotic, leading questions necessary 61%68%
3,5	Learning programme content on the basic level, answers systematized, requires assistance from the teacher 69%-76%
4,0	Learning programme content on the basic level, answers systematized, independent. Solving of problems in typical situations 77%-84%
4,5	The scope of presented knowledge exceeds the basic level based on the supplementary literature provided. Solving of problems in new complex situations 85%-92%
5,0	The scope of presented knowledge exceeds the basic level based on independently acquired scientific sources of information 93%-100%

Type of classes:

CLASSES (C) (including classes conducted with the use of distance learning methods and techniques)

Grade	Assessment criteria
3,0	Receiving from 61% - 68% the total number of points obtained from each partial test
3,5	Receiving from 69% - 76% the total number of points obtained from each partial test
4,0	Receiving from 77% - 84% the total number of points obtained from each partial test
4,5	Receiving from 85% - 92% the total number of points obtained from each partial test
5,0	Receiving from 93% - 100% the total number of points obtained from each partial test

Type of classes:

PRACTICAL CLASSES (PC) (including classes conducted with the use of distance learning methods and techniques)

Grade	Assessment criteria
3,0	Obtaining 61%-68% correct answers at colloquium test
3,5	Obtaining 69%-76% correct answers at colloquium test
4,0	Obtaining 77%-84% correct answers at colloquium test
4,5	Obtaining 85%-92% correct answers at colloquium test
5,0	Obtaining 93%-100% correct answers at colloquium test

Type of classes:

LABORATORIES (LAB) (including classes conducted with the use of distance learning methods and techniques)

Grade	Assessment criteria
3,0	Receiving from 61% - 68% the total number of points obtained from final test
3,5	Receiving from 69% - 76% the total number of points obtained from final test
4,0	Receiving from 77% - 84% the total number of points obtained from final test
4,5	Receiving from 85% - 92% the total number of points obtained from final test
5,0	Receiving from 93% - 100% the total number of points obtained from final test

5. ECTS credit allocation – student workload

Category	Student workload (full-time mode)	Student workload (part-time mode)
NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER (CONTACT HOURS)	**110**	
Participation in lectures*	45	
Participation in seminars/laboratories*	65	
Other (specify) e.g. classes conducted with the use of distance learning methods and techniques*		
INDEPENDENT STUDY (NON-CONTACT HOURS)	**77**	
Preparation for lectures*		
Preparation for seminars/laboratories*		
Preparation for examination/test*		
Gathering materials for project, online research*		
Preparation of a multimedia presentation*		
Other (specify)*		
TOTAL HOURS	**187**	
ECTS CREDITS for the course	**9**	

*** delete as appropriate**

Approved for implementation (date and legible signatures of course instructors in the given academic year):

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