UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN
Faculty of Medicine

Course sylabus – part A

USOS Code: 48SJO-HAEMB
ECTS: 6.00
Cycle: 2026

Histology and Embryology
Histology and Embryology

SUBJECT MATTER CONTENT:

Classes – Epithelial tissue. Glands and their classification. Adipose tissue. Bone and cartilage. Bone ossification.Nerve tissue and the nervous system. Muscle tissue.Blood. Bone marrow. Hematopoiesis. The cardiovascular system. The respiratory system.The immune system and lymphoid organs. Connective tissue proper. Gastrointestinal tract. Salivary glands. Liver and bile ducts. Pancreas. The immune system and lymphoid organs. Endocrine system. Male reproductive system. Spermatogenesis. Female reproductive system. Oogenesis. Mammary glands. Fertilization. Blastulation. Implantation. Gastrulation. Embryonic disc: ectoderm, endoderm, mesoderm. Placenta and umbilical cord. Birth defects and prenatal diagnosis. Development of musculoskeletal (locomotor) system. Cardiovascular and respiratory system development. The gut tube development. Development of the urogenital system. Formation of the head and neck. Development of the nervous system.

Lecture – Epithelial tissue. Connective tissue. Bone and cartilage. Bone ossification. Nerve tissue and the nervous system. Cardiovascular system and respiratory system. Salivary glands. Liver and bile ducts. Pancreas. Special senses. Skin. Endocrine system. Female reproductive system. Additional/ supplementary lectures from remaining topics are provided as PDFs.

TEACHING OBJECTIVE:

The main objective of the course is to provide students with knowledge about the morphology and functions of normal human tissues and organs of adults and during growth and development. Knowledge in the field of microarchitectonics and histophysiology of organs is a necessary introduction to teaching other disciplines in later years of studies. An important part of teaching are practical tasks in which students recognize and describe tissues and organs on a microscopic images.

DESCRIPTION OF THE LEARNING OUTCOMES OF THE COURSE IN RELATION TO THE DESCRIPTION OF THE CHARACTERISTICS OF THE SECOND LEVEL LEARNING OUTCOMES FOR QUALIFICATIONS AT LEVELS 6-8 OF THE POLISH QUALIFICATION FRAMEWORK IN RELATION TO THE SCIENTIFIC DISCIPLINES AND THE EFFECTS FOR FIELDS OF STUDY

Symbols for outcomes related to the discipline:
M/NMA_P7S_KO+++, M/NMA_P7S_ UW++, M/NMA_P7S_WG+ ++++

Symbols for outcomes related to the field of study:
K.5+, K.7.+, K.8.+, A.U1.+, A.U2.+, A.W1.+, A.W2.+, A.W3.+, A.W4.+, B.W16.+

Legal acts specifying learning outcomes: 467/2024;

Discipline: Medical Sciences

Course status: Obligatory

Group of courses: A - basic course

ISCED Code: 0912

Field of studies: Medicine

Field: Medicine

Learning profile: -

Form of studies: full-time

Level of studies: uniform master's studies

Year/Semester: 1st year, Medicine in English

Classes types: Lecture; Classes;

Classes: Lecture (16h); Classes (74h);

Language: ANG

Introductory subject: Cytofizjologia

Prerequisites: Basic knowledge of anatomy, physiology and embryology

Organized by the unit:

Coordinators responsible for the course:

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LEARNING OUTCOMES:

Knowledge (W1) – The graduate knows and understands the composition of the human body in terms of its topography (upper and lower limbs, the chest, abdomen, pelvis, back, neck, head) and functions (the osteoarticular system, muscular system, cardiovascular system, respiratory tract, digestive system, urinary tract, procreation systems, nervous system and sense organs, the common integument);

Knowledge (W2) – The graduate knows and understands the microarchitecture of tissues, extracellular matrix, and organs.

Knowledge (W3) – The graduate knows and understands the basics of the stem cell issues and stem cell application in medicine.

Knowledge (W4) – The graduate knows and understands the stages in the development of the human embryo, the composition and functions of the foetal membranes and the placenta, the stages in the development of individual organs, and the impact of harmful factors on the development of the embryo and foetus (teratogenic).

Knowledge (W5) – The graduate knows and understands the methods of intercellular communication and of the communication between the cell and the extracellular matrix, and the signal transduction pathways in cells, plus examples of disturbances in the processes leading to the growth of neoplasms and other diseases.

Skills (U1) – In terms of skills, the graduate can operate an optical microscope, including the use of immersion.

Skills (U2) – In terms of skills, the graduate can recognise the histological structures corresponding to organs, tissues, cells, and cell structures in the images of the optical or electronic microscope, describe and interpret their structure and the relationships between their composition and function.

Social competences (K1) – In terms of social skills, the graduate is prepared to perceive and recognise own limitations, and assess his/her deficits and educational needs.

Social competences (K2) – In terms of social skills, the graduate is prepared to use objective sources of information.

Social competences (K3) – In terms of social skills the graduate is ready to formulate conclusions from his/her own measurements or observations.

Additional notes:

Course credit is awarded on an annual basis. To obtain course credit and be admitted to the examination, students must meet all three independent requirements: obtain at least 60% of the points available from practical classes (short tests and practical tasks combined), an average score of at least 60% from the three theoretical colloquia, and an average score of at least 60% from the three practical colloquia. Students who do not meet all the requirements specified in Section 4.3.A and do not obtain course credit are entitled to two retake colloquia. A condition for obtaining course credit at a retake colloquium is obtaining at least 60% of the points available in that colloquium.

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Symbols for outcomes related to the field of study:

Classes – ['K1', 'K2', 'K3', 'U1', 'U2', 'W1', 'W2', 'W3', 'W4', 'W5'] – Multimedia presentations preceding the practical part. Microscopic analysis of histological slides. The teaching process is supported by tablets and remote education systems based on MS Teams platform (lectures, communication), Moodle (teaching materials, practical tasks, practical tests and colloquia) and CaseCenter (virtual digital microscopy). Students identify histological structures on slides using light microscopy and/or using virtual digital microscopy.

Lecture – ['K1', 'K2', 'W1', 'W2', 'W3', 'W4', 'W5'] – Multimedia presentation.

FORM AND CONDITIONS OF VERIFYING LEARNING OUTCOMES:

Classes (Written test) – ['K1', 'K2', 'W1', 'W2', 'W3', 'W4', 'W5'] – A short test in Moodle consists of 5 open-ended questions, which may also refer to figures. Each correct answer is worth 1 point. The short test lasts 5 minutes.

Classes (Presentation) – ['K1', 'K2', 'K3', 'W1', 'W2', 'W3', 'W4', 'W5', 'U1', 'U2'] – During each practical class, the student completes a practical task. The final PDF version must be uploaded to a separate Moodle activity (“Practical Task – Version for Grading”) within 48 hours after the end of the class. The final version is graded on a scale of 0 to 3 points; 3 points are awarded for a task completed without errors.

Classes (Colloquium practical) – ['K1', 'K2', 'K3', 'U1', 'U2', 'W1', 'W2', 'W3', 'W4', 'W5'] – Three practical colloquia are held during the academic year. Each practical colloquium consists of identifying 10 histological structures on 10 microscopic slides — 1 point per correct answer. A total of 10 points may be obtained. The colloquium lasts 10 minutes. Questions in Moodle are displayed one at a time, and students cannot return to previous questions.

Classes (Exam) – ['K1', 'K2', 'U1', 'U2', 'W1', 'W2', 'W3', 'W4', 'W5'] – The practical examination consists of 15 questions requiring identification of 15 histological structures on 15 microscopic slides — 1 point per correct answer. A total of 15 points may be obtained. The practical examination lasts 15 minutes. To pass the practical part, students must obtain at least 60% of the points (9 points). To pass the examination, students must obtain both at least 60% of the points in the theoretical part and at least 60% of the points in the practical part.

Lecture (Colloquium test) – ['K1', 'K2', 'W1', 'W2', 'W3', 'W4', 'W5'] – Three theoretical colloquia are held during the academic year. Each theoretical colloquium is written and consists of three separate parts: 16 questions based on 8 diagrams or figures — 1 point per question; time: 20 minutes; 12 short open-ended questions — 1 point per question; time: 12 minutes; 4 descriptive questions — 3 points per question; time: 18 minutes. A total of 40 points may be obtained. The total colloquium time is 50 minutes. The parts are completed in sequence, and students cannot return to previous parts or questions.

Lecture (Written exam) – ['K1', 'K2', 'K3', 'W1', 'W2', 'W3', 'W4', 'W5'] – The theoretical examination is written and consists of three separate parts: 16 questions based on 8 diagrams or figures — 1 point per question; time: 20 minutes; 21 short open-ended questions — 1 point per question; time: 22 minutes; 6 descriptive questions — 3 points per question; time: 28 minutes. A total of 55 points may be obtained. The total theoretical examination time is 70 minutes. The parts are completed in sequence, and students cannot return to previous parts or questions. To pass the theoretical part, students must obtain at least 60% of the points (33 points). To pass the examination, students must obtain both at least 60% of the points in the theoretical part and at least 60% of the points in the practical part.

REQUIRED LITERATURE:

1. **Langman's Medical Embryology, 13th edition**

   T.W. Sadler; Wolters Kluwer; 2015; Pages: ; Tome: ;
2. **Junqueira's Basic Histology: Text and Atlas, 15th Edition**

   A. L. Mescher; McGraw-Hill Lange; 2018; Pages: ; Tome: ;

COMPLIMENTARY LITERATURE:

1. **Textbook of Histology, 4th edition**

   L.P. Gartner; Elsevier; 2016; Pages: ; Tome: ;

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Logo UWM

Detailed description of ECTS credits awarded - part B

USOS Code: 48SJO-HAEMB
ECTS: 6.00
Cycle: 2026

Histology and Embryology
Histology and Embryology

1. Contact hours with the academic teacher:

- participation in: Lecture	16 h
- participation in: Classes	74 h
- consultation	4 h
	Total: 94 h

Independent work of a student:

- Preparing for classes, short tests, colloquia and exams based on textbooks and providing materials. Perform practical tasks.	56.00 h
	Total: 56.00 h

contact hours + independent work of a student Total: 150.00 h

1 ECTS credit = 25-30 h of an average student's work, number of ECTS

ECTS Points = 150.00 h : 25 h/ECTS = 6.00 ECTS

Average: 6.00 ECTS

- including the number of ECTS credits for contact hours with the direct participation of an academic teacher - 3.76 ECTS pts

- including the number of ECTS credits for hours of independent work of a student - 2.24 ECTS pts