



# Pomeranian Medical University in Szczecin

## SYLLABUS of the MODULE (SUBJECT) General Information

Module title: Histology, Embryology and Cytology	
Module type	Obligatory
Faculty PMU	Faculty of Medicine and Dentistry
Major	Dentistry
Level of study	long-cycle Master's degree studies
Mode of study	full-time studies provided in English Language
Year of studies, semester	Year 1, semester 1 and 2
ECTS credits (incl. semester breakdown)	9 (4, 5)
Type/s of training	Lectures: 20h (I semester: 10h, II semester: 10h) Seminars: 10h (I semester: 5h, II semester: 5h) Practical: 60h (I semester: 28h, II semester: 32h) <b>Summary 90 hours</b>
Form of assessment *	<input checked="" type="checkbox"/> final examination <input checked="" type="checkbox"/> test: I term, I re-take <input checked="" type="checkbox"/> practical <input checked="" type="checkbox"/> oral: II re-take
Head of the Department/ Clinic, Unit	prof. dr hab. Barbara Wiszniewska
Tutor responsible for the module	dr n. med. Dagmara Szypulska-Koziarska dagmara.koziarska@pum.edu.pl
Department's/ Clinic's/ Unit's website	Department of Histology and Embryology 70-111 Szczecin Al. Powstańców Wlkp. 72 tel. + 48 91 466 16 77 <a href="https://www.pum.edu.pl/wydzialy/wydzial-lekarski/katedra-i-zaklad-histologii-i-embriologii">https://www.pum.edu.pl/wydzialy/wydzial-lekarski/katedra-i-zaklad-histologii-i-embriologii</a>
Language	English

\* replace ☐ into ☒ where applicable

**Detailed information**

<b>Module objectives:</b>		Histology is one of the basic fields of medicine. The area of interest is the microscopic of the human body that can be studied using the optical devices including all kinds of microscopy. The purpose of the teaching of histology and cytology is to provide a knowledge on the structure and function of cells, structural organization of tissues, entire systems and particular organs in the human body. The knowledge would be necessary for the farther study of the next subjects including physiology, biochemistry, immunology, pathophysiology and pathology. The understanding of ultrastructure of various cell types and molecular mechanisms in their organelle would be helpful to understand the etiology of diseases as well as cellular and sub-cellular mechanisms of medications and toxic agents. Moreover, learning the histology and cytology facilitates to understand relationships between the basic science in medicine and clinical subjects. The aim of the human embryology course is to describe and explain complex processes that occur during human embryo and fetus development. Additionally, basic embryological development of the face, neck, oral cavity, teeth and pharynx as well as of the most common orofacial birth defects.
Prerequisite /essential requirements	Knowledge	Acquire the essential elements of the organization of human tissues. The morphology and function of particular tissues and organs. The human embryo and fetal development, development of the crucial organs, including anomalies.
	Skills	Handling of light microscope with immersion
	Competences	The ability of self-education and group work

Description of the learning outcomes for the subject /module			
No.of learning outcome	Student, who has passed the (subject) knows /is able to /can:	SYMBOL (referring the standards)	Method of verification of learning outcomes*
W01	demonstrates knowledge of human body structures: cells, tissues and systems with particular regard to stomatognathic system	A.W1.	W, S, K, O, PS EPR, ET – I term and I re-take, EU – II re-take
W02	explains development of organs and entire body with particular regard to masticatory system	A.W2.	W, S, K, O, PS EPR, ET – I term and I re-take, EU – II re-take

W03	understands role of nervous system for functions of certain organs	A.W4.	W, S, K, O, PS EPR, ET – I term and I re- take, EU – II re-take
W04	knows and understands functional importance of certain organs and systems in synthetic manner	A.W5.	W, S, K, O, PS EPR, ET – I term and I re- take, EU – II re-take
U01	can operate optic microscope and is able to apply of immersion and recognize histological structures corresponding to organs and tissues using microscope images as well as explain and interpret structures thereof, and interpret relationship between structure and function of cells, tissues and organs	A.U2.	S, O, PS, EPR
K01	is ready to see and recognize his/her own limitations, and to self-assess deficits and educational needs	K.5.	S, O, PS, EPR
K02	is ready to use objective sources of information	K.7.	W, O, S, K, PS, EPR, ET – I term and I re- take, EU – II re-take
K03	is ready to formulate conclusions from his/her own measurements or observations	K.8.	O, S, PS, EPR

Table presenting LEARNING OUTCOMES in relation to the form of classes

No. of learning outcome	Learning outcomes	Type of training						
		Lecture	Seminar	Practical classes	Clinical classes	Simulations	E-learning	Other...
W01	A.W1.	x	x	x				
W02	A.W2.	x	x	x				
W03	A.W4.	x	x	x				
U01	A.U2.			x				
K01	K.5	x	x	x				
K02	K.7.	x	x	x				
K03	K.8.			x				

Table presenting TEACHING PROGRAMME			
No. of a teaching programme	Teaching programme	No. of hours	References to learning outcomes
<b>Winter semester</b>			
<b>Lectures</b>			
TK01	Cytology.	1	W01; K01; K02
TK02	Epithelial tissue and glands.	1	W01; W02; W03; W04; K01; K02
TK03	Connective tissue proper and adipose tissue.	1	W01; W02; W03; W04; K01; K02
TK04	Cartilage and bone.	1	W01; W02; W03; W04; K01; K02
TK05	Muscle tissue.	1	W01; W02; W03; W04; K01; K02
TK06	Circulatory system.	1	W01; W02; W03; W04; K01; K02
TK07	Nervous tissue.	1	W01; W02; W03; W04; K01; K02
TK08	Central nervous system.	1	W01; W02; W03; W04; K01; K02
TK09	Eye and ear.	1	W01; W02; W03; W04; K01; K02
TK10	Blood and bone marrow.	1	W01; W02; W03; W04; K01; K02
TK11	Endocrine system.	1	W01; W02; W03; W04; K01; K02
TK12	Skin.	1	W01; W02; W03; W04; K01; K02
<b>Seminars</b>			
TK01	Methods in histology.	1	W01; K01; K02
TK02	Cell cycle.	1	W01; K01; K02
TK03	Cytoskeleton.	1	W01; K01; K02
TK04	Cell signaling, endo - and exocytosis.	1	W01; W02; W03; W04; K01; K02
TK05	Cell aging, apoptosis and necrosis.	1	W01; W02; W03; W04; K01; K02
<b>Practical classes</b>			
TK 01	Epithelial tissue and glands.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK 02	Connective tissue proper and adipose tissue.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK 03	Cartilage and bone.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK 04	Muscle tissue.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK 05	I theoretical test. Practical classes.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK 06	I re-take of I theoretical test. I practical test.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK 07	Circulatory system. II re-take of I theoretical test.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK 08	Nervous tissue.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK 09	Central nervous system.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK 10	Eye and ear.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK 11	Blood and bone marrow.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK 12	II theoretical test. Practical classes.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK 13	I re-take of II theoretical test. II practical test.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK 14	II re-take of II theoretical test.	2	W01; W02; W03; W04; K01; K02

E-learning			
Summer semester			
Lectures			
TK01	Digestive tract I.	1	W01; W02; W03; W04; K01; K02
TK02	Digestive tract II.	1	W01; W02; W03; W04; K01; K02
TK03	Digestive tract III.	1	W01; W02; W03; W04; K01; K02
TK04	Urinary system.	1	W01; W02; W03; W04; K01; K02
TK05	Female reproductive system.	1	W01; W02; W03; W04; K01; K02
TK06	Male reproductive system.	1	W01; W02; W03; W04; K01; K02
TK07	Respiratory system.	1	W01; W02; W03; W04; K01; K02
TK08	Lymphatic system.	1	W01; W02; W03; W04; K01; K02
Seminars			
TK01	Development of pharyngeal arches and pouches (development of head and neck).	1	W01; W02; W03; W04; K01; K02
TK02	Tooth development.	1	W01; W02; W03; W04; K01; K02
TK03	Fertilization. Implantation.	1	W01; W02; W03; W04; K01; K02
TK04	Gastrulation.	1	W01; W02; W03; W04; K01; K02
TK05	Fetal membranes.	1	W01; W02; W03; W04; K01; K02
Practical classes			
TK01	Endocrine glands. Skin	2	W01; W02; W03; W04; U01; K01; K02; K03
TK02	Digestive tract I.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK03	Digestive tract II.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK04	Digestive tract III.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK05	III theoretical test. Practical classes.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK06	I re-take of III theoretical test. III practical test.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK07	Urinary system. II re-take of III theoretical test.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK08	Female reproductive system.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK09	Male reproductive system.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK10	Respiratory system.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK11	Lymphatic system.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK12	IV theoretical test. Practical classes.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK13	I re-take of IV theoretical test. IV practical test. Practical classes before the exam.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK14	II re-take of IV theoretical test. Practical classes before the exam.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK15	Practical examination.	2	W01; W02; W03; W04; U01; K01; K02; K03
TK16	Theoretical examination.	2	W01; W02; W03; W04; K01; K02
E-learning			

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<b>Booklist</b>
Obligatory literature:
<ol style="list-style-type: none"> <li>1. Color and Atlas of Histology. Leslie P. Gartner, James L. Hiatt (7th edition) 2014.</li> <li>2. Before we are born. Essential of Embryology and Birth defects. Keith L. Moore, T.V.N. Persaud, Mark G. Torchia 8th edition 2013.</li> </ol>
Supplementary literature:
<ol style="list-style-type: none"> <li>1. Junqueira's Basic Histology: Text and Atlas, Fifteenth Edition.</li> <li>2. T.W. Sadler: Langman's medical embryology. Thirteenth edition.</li> </ol>

<b>Student's workload</b>	
Form of student's activity (in-class participation; activeness, produce a report, etc.)	Student's workload [h]
	Tutor
Contact hours with the tutor	90
Time spent on preparation to seminars/ practical classes	40
Time spent on reading recommended literature	30
Time spent on writing report/making project	-
Time spent on preparing to colloquium/ entry test	30
Time spent on preparing to exam	80
Other .....	-
Student's workload in total	270
<b>ECTS credits for the subject (in total)</b>	<b>9</b>
<b>Remarks</b>	
-	

\* Selected examples of methods of assessment:

EP – written examination

EU – oral examination

ET – test examination

EPR – practical examination

K – colloquium

R – report

S – practical skills assessment

RZC – practical classes report, incl. discussion on results

O – student's active participation and attitude assessment

SL – lab report

SP – case study

PS - assessment of student's ability to work independently

W – entry test

PM – multimedial presentation

other...