



# Pomeranian Medical University in Szczecin

## SYLLABUS of the MODULE (SUBJECT)

valid from the academic year 2017/2018

### General Information

<b>Module title</b>	<b><i>Histology, cytology and embryology</i></b>
Module type	<i>Obligatory</i>
Faculty	<i>Faculty of Medicine and Dentistry</i>
Field of study	<i>Medicine and Dentistry</i>
Major	<i>Not applicable</i>
Level of study	<i>II level/ long-cycle (S2J)</i>
Mode of study	<i>intramural</i>
Year of studies, semester	<i>Year I, semester 1 and II</i>
ECTS credits (incl. semester breakdown)	<i>13 (6+7)</i>
Type/s of training	<i>lectures (20), seminars (10 h)/practical classes(60 h)</i> I – 10 h lectures; 5 h seminars; 30 h practical classes II – 10 h lectures; 5 h seminars; 30 h practical classes <b>Summary: 90 hours</b>
Form of assessment	- <i>graded assessment: *</i> <input type="checkbox"/> <i>descriptive</i> <input type="checkbox"/> <i>test</i> <input type="checkbox"/> <i>practical</i> <input type="checkbox"/> <i>oral</i>  <b>X</b> - <i>non-graded assessment *</i>  - <i>final examination: *</i> <input type="checkbox"/> <i>descriptive</i> <b>X</b> <i>test (1<sup>st</sup> and 1<sup>st</sup> re-take)</i> <b>X</b> <i>practical (before the test)</i> <b>X</b> <i>oral (2<sup>nd</sup> re-take)</i>
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Tutor responsible for the module	<i>Kamila Misiakiewicz-Has PhD, Dsc kamila.misiakiewicz@pum.edu.pl</i>
Department's/ Clinic's/ Unit's website	<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	<i>English</i>

\*replace ☐ with X 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 embryological development of the crucial organs with special interest to stomatognathic system	
	Skills	Handling of light microscope without immersion	
	Competences	To show habit of self-education and lifelong education	
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) ZEK	Method of verification of learning outcomes *
W01	Demonstrates knowledge of human body structures: cells, tissues and systems with particular regard to	K_A.W01	W, S, K, O, PS

	stomatognathic system		
W02	Explains development of organs and entire body with particular regard to masticatory system	K_A.W02.	
W03	understands role of nervous system for functions of certain organs	K_A.W04	
U01	explains functional importance of certain organs and systems in synthetic manner	K_A.U01	EPR ET – 1 <sup>st</sup> and 1 <sup>st</sup> re-take EU – 2 <sup>nd</sup> re-take
U02	operates optic microscope and is able to take advantage of immersion and recognizes histological structures corresponding to organs and tissues on the basis of microscope images and explains and interprets structures thereof, and interprets relationship between structure and function of cells, tissues and organs	K_A.U04.	
K01	shows habit of self-education and lifelong education	K_K01	
K02	can co-operate with team members and care about occupational safety	K_K03	

Table presenting learning outcomes of the subject/module in relation to the form of classes

No.	SYMBOL (referring the standards) ZEK	Type/s of training						
		Lecture	Seminar	Practical classes	Clinical classes	...	...	Other...
1.	K_A.W01	x	x	x				
2.	K_A.W02	x	x	x				
3.	K_A.W04	x	x	x				
4.	K_A.U01		x	x				
5.	K_A.U04		x	x				
6.	K-K01	x	x	x				
7.	K-K02	x	x	x				
8.	K-K03		x	x				

Module (subject) contents no.	Description of teaching programme	No. of hours	References to learning outcomes
	<b>Lectures:</b>		
TK 01	Epithelial tissue and glands	1	W01; W02; W03; K01; K02
TK 02	Connective and adipose tissues,	3	W01; W02; W03; K01; K02

	cartilage and bone		
TK 03	Blood and bone marrow – hematopoiesis	1	W01; W02; W03; K01; K02
TK 04	Circulatory system	1	W01; W02; W03; K01; K02
TK 05	Muscle	1	W01; W02; W03; K01; K02
TK 06	Nervous tissue and central nervous system	2	W01; W02; W03; K01; K02
TK 07	Integument	1	W01; W02; W03; K01; K02
TK 08	Digestive system – oral cavity; alimentary canal, glands: major salivary glands, liver, pancreas	3	W01; W02; W03; K01; K02
TK 09	Lymphoid (immune) system	1	W01; W02; W03; K01; K02
TK 10	Respiratory system	1	W01; W02; W03; K01; K02
TK 11	Endocrine system	1	W01; W02; W03; K01; K02
TK 12	Urinary system	1	W01; W02; W03; K01; K02
TK 13	Male and female reproductive systems	2	W01; W02; W03; K01; K02
TK 14	Eye and ear	1	W01; W02; W03; K01; K02
	<b>Seminars:</b>		
TK 01	Cell structure, methods in histology, cytoskeleton; cell cycle	2	W01; W02; W03; U02; K01; K02; K03
TK 02	Cell signaling, cell aging, apoptosis and necrosis	2	W01; W02; W03; U02; K01; K02; K03
TK 03	Fertilization, implantation, gastrulation, germinal layers derivatives	2	W01; W02; W03; U02; K01; K02; K03
TK 04	Fetal membranes and placenta	1	W01; W02; W03; U02; K01; K02; K03
TK 05	Development of face, neck, palate, pharyngeal apparatus, teeth (stomatognathic system; defects	2	W01; W02; W03; U02; K01; K02; K03
TK 05	Development of nervous system, defects	1	W01; W02; W03; U02; K01; K02; K03
	<b>Practical classes:</b>		
TK 01	Epithelial tissue and glands	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 02	Connective and adipose tissues, cartilage and bone, ossification	6	W01; W02; W03; U01; U02; K01; K02; K03
TK 03	Blood and bone marrow – hematopoiesis	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 04	Circulatory system	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 05	Muscle	2	W01; W02; W03; U01; U02; K01;

			K02; K03
TK 06	Nervous tissue, nerve ending and central nervous system	4	W01; W02; W03; U01; U02; K01; K02; K03
TK 07	Recognizing slides before practical test I	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 08	Practical test I	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 09	Recognizing slides before practical test II	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 10	Practical test II	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 11	Integument	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 12	Digestive system – oral cavity; alimentary canal, glands: major salivary glands, liver, pancreas, DNES	6	W01; W02; W03; U01; U02; K01; K02; K03
TK 13	Lymphoid (immune) system	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 14	Respiratory system	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 15	Endocrine system	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 16	Urinary system	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 17	Male and female reproductive systems	4	W01; W02; W03; U01; U02; K01; K02; K03
TK 18	Eye and Ear	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 19	Recognizing slides before practical test III	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 20	Practical test III	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 21	Recognizing slides before practical test IV	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 22	Practical test IV	2	W01; W02; W03; U01; U02; K01; K02; K03
TK 23	Practical exam	4	W01; W02; W03; U01; U02; K01; K02; K03

**Booklist**

## Obligatory literature:

1. Color and Atlas of Histology. Leslie P. Gartner, James L. Hiatt (7th edition) 2014
2. Before we are born. Essential of Embryology and Birth defects. Keith L. Moore, T.V.N. Persaud, Mark G. Torchia<sup>8th</sup> edition 2013

## Supplementary literature:

1. Basic histology text & atlas Luiz Carlos Junqueira. Jose Carneiro
2. T.W. Sadler: Langman's medical embryology. Thirteenth edition

**Student's workload (balance sheet of ECTS credits)**

Form of student's activity (in-class participation; activeness, produce	Student's workload [h]
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a report, etc.)	Tutor	Student	Average
Contact hours with the tutor	90	90	
Time spent on preparation to seminars/ practical classes			
Time spent on reading recommended literature			
Time spent on writing report/making project			
Time spent on preparing to colloquium/ entry test			
Time spent on preparing to exam			
Other .....			
Student's workload in total			
ECTS credits for the subject (in total)	13		
Remarks			

\* 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

Prerequisite /essential requirements:

W (wiedza) – knowledge

U (umiejętności) – skills

K (kompetencje) - competences