



Pomeranian Medical University in Szczecin

SYLLABUS of the MODULE (SUBJECT)

valid from the academic year 2017/2018

General Information

Module title	Histology, Embriology with Cythophysiology
Module type	<i>Obligatory</i>
Faculty	<i>Faculty of Medicine</i>
Field of study	<i>Medicine</i>
Major	<i>Not applicable</i>
Level of study	long-cycle (S2J)
Mode of study	intramural
Year of studies, semester	<i>np. Year I, semester 1 and II</i>
ECTS credits (incl. semester breakdown)	<i>np. 13 (6+7)</i>
Type/s of training	(120 h): <i>Lectures (25) seminars (15 h)/practical classes(80 h) (amount of hours)/</i>
Form of assessment	<p>- <i>graded assessment: *</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> <i>descriptive</i> <input type="checkbox"/> <i>test</i> <input type="checkbox"/> <i>practical</i> <input type="checkbox"/> <i>oral</i> <p>X <i>non-graded assessment *</i></p> <p>- <i>final examination: *</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> <i>descriptive</i> X <i>test (1st and 1st re-take)</i> X <i>practical</i> X <i>oral 2nd re-take</i>
Head of the Department/ Clinic, Unit	<i>Prof. dr hab. Barbara Wiszniewska</i>
Tutor responsible for the module	<i>Dr Kamila Misiakiewicz-Has</i> <i>kamila.misiakiewicz@pum.edu.pl</i>
Department's/ Clinic's/ Unit's website	https://www.pum.edu.pl/wydzialy/wydzial-lekarski/katedra-i-zaklad-histologii-i-embriologii
Language	English

*replace ☐ with **X** where applicable

Detailed information

Module objectives		<p>The purpose of histology course is to provide the sufficient information regarding the types of human tissues and morphology of human organs. The goal is also to explain the connection between the morphology of particular cells and their function.</p> <p>The seminars in cytophysiology are to describe the principal information on molecular mechanisms that control the cell metabolism and are responsible for cell specificity.</p> <p>The embryology seminars explain the prenatal development of human organism starting from conception (fertilization) through formation of blastocyst, gastrulation and organogenesis to the time of birth. The subject also includes the phases of human embryological development, sensitivity of embryo and fetus to the most common teratogenic factors, capability of survival in comparison to gestational age.</p> <p>Theoretical background provided during two semesters of histology, embryology and cytophysiology course is necessary for students of medicine faculty and may be very helpful to understand etiology of diseases.</p>	
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	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	Knows histological and embryological nomenclature	W01, W02, W04, U03	W, S, K, O, PS
W02	Knows principal cellular structures and their specializations	W01, W05, U01	
W03	Is able to identify, define and describe tissues and organs	W01, U01, U02, U03	
W04	Knows prenatal period of human development (all stages of human embryonic and fetal development)	W01, U03	
W05	Knows mechanisms of cell cycle control, cell differentiation and cell signaling	W01, U03	
W06	Knows the importance of apoptosis during embryogenesis	W01, U03	

U01	Can handle light microscopy including the immersion	W02, W03, U02, K02	EPR ET – 1st and 1st re-take EU – 2 nd re-take
U02	Recognizes under light microscopy and pictures from electron microscopy the histological structure of tissues and organs, describes and interprets the microscopic structure and function of cells, tissues and organs. Interprets the correlations between the morphology and function	W01, W02, W03, U01, U03, K01, K02	
U03	Can use in speaking and writing histological and embryological nomenclature	W01 – W06	
K01	Shows habit of self-education and lifelong education	W01-W06	
K02	Can co-operate with team members and care about occupational safety	W01, U01	

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.	W01	X	X	X					
2.	W02	X	X	X					
3.	W03		X	X					
4.	W04	X	X						
5.	W05	X	X						
6.	W06	X	X						
7.	U01			X					
8.	U02		X	X					
9.	U03		X	X					
10.	K01	X	X	X					
11.	K02		X	X					

Module (subject) contents no.	Description of teaching programme	No. of hours	References to learning outcomes
	Lectures:		
TK 01	Epithelial tissue and glands	1	W01,W02,W03, W04, U02
TK 02	Connective tissue & adipose tissue	1	W01, W02, W03, W04, U02
TK 03	Cartilage and bone	1	W01, W02, W03, W04,U02

TK 04	Muscle tissue Circulatory system	2	W01,W02,W03, W04, U02
TK 05	Blood and bone marrow	1	W01,W02,W03, W04,U02
TK 06	Lymphatic system	1	W01,W02,W03, W04, U02
TK 07	Nervous tissue	1	W01,W02,W03, W04,U02
TK 08	Central nervous system	1	W01,W02,W03, W04,U02
TK 09	Eye & Ear	1	W01,W02,W03, W04,U02
TK 10	Skin	1	W01,W02,W03, W04,U02
TK 11	Digestive tract: oral cavity, stomach, intestines, DNES	2	W01,W02,W03, W04, U02
TK 12	Organs associated with digestive tract: salivary glands, pancreas, liver, gallbladder	2	W01,W02,W03, W04,U02
TK 13	Endocrine glands	2	W01,W02,W03, W04,U02
TK 14	Respiratory system	1	W01,W02,W03, W04,U02
TK 15	Urinary system	1	W01,W02,W03, W04,U02
TK 16	Male and female reproductive system	2	W01,W02,W03, W04,U02
TK 17	Urogenital system development	1	W01,W02,W03, W04,U02
TK 18	Fertilization, implantation and fetal membranes	2	W01,W02,W03, W04,U02
	Seminars:		
TK 01	Methods in histology; Cytology	2	W01,W03,U03,K01
TK 02	Cytoskeleton; Cell cycle	2	W01,W02,W03,U03,K01
TK 03	Growth and cell differentiation	2	W01,W02,W05,U03,K01
TK 04	Cell aging, apoptosis, necrosis	1	W01,W02,W06,U03,K01
TK 05	Cell signaling, endo-, exocytosis	1	W01,W02,W05,U03,K01
TK 06	Blood development, hematopoiesis	1	W01,W04,W05,U03,K01
TK 07	Nervous system development, defects	1	W01,W04,W05,U03,K01
TK 08	Head and neck development	1	W01,W04,W05,U03,K01
TK 09	Endocrine system development	1	W01,W04,W05,W06,U03,K01
TK 10	Respiratory system development	1	W01,W04,W05,W06,U03,K01
TK 11	Gastrulation; germinal layers derivatives, twins	2	W01,W04,W05,U03,K01
	Practical classes:		
TK 01	Epithelial tissue, glands	3	W01,W02,W03,W04,U01 - U03,K01,K02
TK 02	Connective tissue & adipose tissue	3	W01,W02,W03,W04,U0 - U03,K01,K02
TK 03	Cartilage and bone	3	W01,W02,W03,W04,U01 - U03,K01,K02

TK 04	Muscle tissue	3	W01,W02,W03,W04,U01 - U03,K01,K02
TK 05	Nervous tissue and glial tissue	3	W01,W02,W03,W04,U01 - U03,K01,K02
TK 06	Central nervous system	3	W01,W02,W03,W04,U01 - U03,K01,K02
TK 07	Eye and Ear	3	W01,W02,W03,W04,U01 - U03,K01,K02
TK 08	Blood and bone marrow	3	W01,W02,W03,W04,W05,U01-03,K01,K02
TK 09	Circulatory system	3	W01,W02,W03,W04,U01-03,K01,K02
TK 10	Lymphatic system	3	W01,W02,W03,W04,U01-03,K01,K02
TK 11	Recognizing slides before practical test I	3	W01,U01
TK 12	Practical test I	3	W01,W02,W03,W04,U01-03,K01
TK 13	Recognizing slides before practical test II	3	W01,U01
TK 14	Practical test II	3	W01,W02,W03,W04,U01-03,K01
TK 15	Digestive tract 1: Lip, oral cavity, esophagus	3	W01,W02,W03,W04,U01-03,K01,K02
TK 16	Digestive tract 2: small and large intestine, appendix, DNES	3	W01,W02,W03,W04,U01-03,K01,K02
TK 17	Digestive tract 3: Salivary glands, pancreas, liver, gallbladder	3	W01,W02,W03,W04,U01-03,K01,K02
TK 18	Endocrine glands	3	W01,W02,W03,W04,U01-03,K01,K02
TK 19	Skin	3	W01,W02,W03,W04,U01-03,K01,K02
TK 20	Respiratory system	3	W01,W02,W03,W04,U01-03,K01,K02
TK 21	Urinary system	3	W01,W02,W03,W04,U01-03,K01,K02
TK 22	Female reproductive system	3	W01,W02,W03,W04,W06,U01-03,K01,K02
TK 23	Male reproductive system	3	W01,W02,W03,W04,W05,W06,U01-3,K01, K02
TK 24	Recognizing slides before practical test III	2	W01,U01
TK 25	Practical test III	2	W01,W02,W03,W04,U01-03,K01
TK 26	Recognizing slides before practical test IV	2	W01,U01
TK 27	Practical test IV	2	W01,W02,W03,W04,U01-03,K01
TK 28	Practical exam	3	W01,W02,W03,W04,U01-03,K01

Booklist

Obligatory literature:

1. Gartner Leslie P.: Textbook of Histology. Fourth edition

2. Before we are born. Essential of Embryology and Birth defects. Keith L. Moore, T.V.N. Persaud, Mark G. Torchia^{8th} 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 a report, etc.)	Student’s workload [h]		
	Tutor	Student	Average
Contact hours with the tutor		120	
Time spent on preparation to seminars/ practical classess		235	
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		98	
Other			
Student’s workload in total		453	
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

Other