COURSE UNIT DESCRIPTION

Course unit title	Code
Human Histology I, academic year 2019-2020	**ZMHI2115**

Lecturer(s)	Department(s)
Coordinating: Prof. Renata Šimkūnaitė-Rizgelienė Others: Prof. Violeta Žalgevičienė, lect. Rūta Jacevičiūtė.	Department of Anatomy, Histology and Anthropology, Institute of Biomedical Sciences, Faculty of Medicine, Vilnius University

Cycle	Level of the course unit	Type of the course unit
Integrated studies	-	Compulsory

Mode of delivery	Period of delivery	Language of instruction
Face-to-face: lectures, seminars, practices, consultations, colloquia, and self-studies	**Year I, semester I**	**Lithuanian** and **English**

Prerequisites and corequisites	
Prerequisites: -	**Corequisites (if any):** -

Number of ECTS credits allocated to the course unit	Total student's workload	Contact hours	Self-study hours
5	**134**	**67**	**67**

Purpose of the course unit Programme competences to be developed		
The purpose of the course is to aid students in acquiring basic knowledge and understanding of the microscopic structure of human tissues and organs, ensure that students understand the material so that they may systemise, analyse and proceed to the clinical studies. After the course students are required to know the microscopic structure of human tissues and organs, their origin and main functions, to apply theoretical knowledge to practice - recognize, describe and compare histological slides of tissues and organs		
Learning outcomes of the course unit	**Teaching and learning methods**	**Assessment methods**
Generic competences: During the first semester students are required:		
- to act fairly and according to ethical obligations, be empathetic, think critically and self-critically, be creative, take the initiative, communicate with others	Lectures and seminars, self-study	Continuous assessment during seminars
- to make an assessment within the scope of one's competence and, if necessary, ask for help, act in new situations and adapt to them, act independently, solve problems, make judgements, work with other students, organise and plan	Seminars and practice, self-study	Continuous assessment during seminars and practice
- to analyse and synthesize, use knowledge in practice	Seminars and practice, self-study	Continuous assessment during seminars, practice and colloquiums
Subject-specific competences: During the first semester students are required:		
- to name and describe the main historical periods of Histology, main methods used in Histology and tissue	Theoretical material during the lecture, skills in using light microscope	Continuous assessment during practice and seminar. At the end of course unit – an

preparation, know how to work with light microscope	during practice, discussions and analysis during seminar, self-study	examination
- to know microscopic and ultramicroscopic structure of the **cell**, understand the cell cycle and cell division, main physiological features of the cell	Study of histological slides, electron micrographs during practice, discussions and analysis during seminar, self-study	Continuous assessment during practice and seminar. At the end of theme – a test. At the end of course unit – an examination
- to know and describe periods of human **prenatal development**, courses of developmental defects, know and draw the structure of the human embryo at the early developmental stages, structure and functions of foetal membranes and placenta	Theoretical material during the lectures. Study of histological slides, moulages, preparates during practice, discussions and analysis during seminar, self-study	Continuous assessment during practice and seminars. At the end of theme – a colloquium. At the end of course unit – an examination
- to know microscopic and ultramicroscopic structure, functions and origin of the **epithelial tissue**, recognize and describe the slides of different epithelial tissues	Study of histological slides during practice, discussions and analysis during seminar, self-study	Continuous assessment during practice and seminar. At the end of theme – a colloquium. At the end of course unit – an examination
- to know microscopic structure, functions and origin of **connective tissue**, recognize and describe the slides of different connective tissues	Theoretical material during the lectures. Study of histological slides, schemes and posters during practice, discussions and analysis during seminars, self-study	Continuous assessment during practice and seminars. At the end of theme – a colloquium. At the end of course unit – an examination
- to know the composition of **blood**, describe the stages of hemopoiesis, to recognize and describe the blood cells in histological slides	Theoretical material during the lectures, study of histological slides, discussions, analysis during seminar, self-study	Continuous assessment during practice. At the end of themes about blood and muscle tissue – a colloquium. At the end of course unit – an examination
to know microscopic structure, origin and functions of the **muscle tissue**, recognize and describe the slides of different muscular tissues	Theoretical material during the lectures, study of histological slides during practice, discussions and analysis during seminar self-study	Continuous assessment during practice. At the end of themes about blood and muscle tissue – a colloquium. At the end of course unit – an examination
- to know microscopic structure, origin and functions of the **nervous tissue**, recognize and describe the slides of different nervous tissues and organs	Theoretical material during the lecture, study of histological slides during practice, discussions and analysis during seminar, self-study	Continuous assessment during practice. At the end of themes about nervous tissues and nervous system – a colloquium. At the end of course unit – an examination
- know microscopic structure, origin and functions of the **nervous system** organs, recognize and describe the slides of the different nervous system organs	Theoretical material during the lecture, study of histological slides during practice, discussions and analysis during seminar, self-study	Continuous assessment during practice. At the end of themes about nervous tissue and nervous system – a colloquium. At the end of course unit – an examination

Topics	Contact work hours	Time and tasks of self-study

	Lectures	Consultations	Seminars	Practice	Laboratory work	Practical training	**Total contact hours**	**Self-study**	**Tasks**
1. Main historical periods of Histology, main methods used in Histology	1	-	-	-	-	-	**2**	**2**	-
2. Tissue preparation and work with light microscope. Cytology: structure and functions of cell membrane, organelles and inclusions	-	-	2	1	-	-	**3**	**3**	Studies of the literature, preparing for seminar and practice.
3. Cytology: nucleus, cell cycle and division, physiological features of the cell									Studies of the literature, preparing for seminar and practice. Repeating of studied material and preparation for the **test**
4. Human embryology: germ cells, fertilization, segmentation and implantation	1		1	2			**3**	**3**	Studies of the literature, preparing for seminar and practice
5. Human embryology: gastrulation, histogenesis and organogenesis	2	-	1	2	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice
6. Human embryology: structure and functions of foetal membranes and placenta. Congenital defects	2	-	2	1	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice. Repetition of studied material and preparation for the **colloquium**
7. Epithelial tissue: surface epithelium	1	-	1	2	-	-	**3**	**3**	Studies of the literature, preparing for seminar and practice
8. Epithelial tissue: glands	1	1	1	2	-	-	**4**	**4**	Studies of the literature, preparing for seminar and practice. Possibility to study histological slides during the consultation. Repetition of studied material and preparation for the **colloquium**
9. Embryonic and special connective tissue	1	-	1	2	-	-	**4**	**4**	Studies of the literature, preparing for seminar and practice
10. Connective tissue proper	2	-	1	2	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice
11. Skeletal connective tissue. Osteogenesis	3	-	2	1	-	-	**6**	**6**	Studies of the literature, preparing for seminar and practice. Repetition of studied material ant preparation for the **colloquium**
12. Blood and hemopoiesis	2	-	2	1	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice
13. Muscle tissue	2	-	1	2	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice. Repetition of studied material about blood and preparation for the **colloquium**
14. Nervous tissue	2	-	2	1	-	-	**5**	**6**	Studies of the literature, preparing for seminar and practice
15. Nervous system	2	-	2	1	-	-	**5**	**6**	Studies of the literature,

									preparing for seminar and practice. Repetition of studied material about nervous tissue and preparation for the **colloquium**
16. Sense organs	2	-	-	-	-	-	**2**	-	
Total	**24**	**1**	**21**	**21**	**-**	**-**	**67**	**67**	

Assessment strategy	**Weight (%)**	**Assessment period**	**Assessment criteria**
Continuous assessment during practice and seminars		During semester	Short questioning on the topic of the current day (in written or oral form). At the end of the practice the lecturer checks the drawings, points out the mistakes, ascertains the correctness of terminology and depicted structures, and signs them. Students report on self-dependently explored topics and projects, general discussion on problematic questions during seminars. Attendance of the practices and seminars is mandatory, and missing classes due to justified causes must not exceed 20% of the scheduled time. Active attendance of lectures and solving problems presented during the seminars is encouraged.
Interim assessment - **1 test-paper**: Cytology, **5 colloquia**: Embryology; Epithelial Tissue; Connective Tissue; Blood and Muscle Tissue; Nervous Tissue and Nervous System.	5%	During semester	The colloquia are in written (closed or opened questions with schemes, drawings, figures and histological slides) or in oral form (with schemes, drawings, figures and histological slides). Assessment on 10-point scale: 10 points - the student mastered the studied material excellently, is able to analyze and summarize, uses the concepts and terms correctly. Written colloquium - at least 90 percent of questions answered. 8-9 points - the student mastered the studied material very well/well, is able to organize and summarize, uses correctly the concepts and terms. Written colloquium - at least 85 percent of questions (9 points), or 75 percent of questions (8 points) answered. 6-7 points - the student mastered the studied material satisfactorily, some of the concepts and terminology used inaccurately. Written colloquium - answer at least 65 percent of questions (7 points), or 55 percent of questions (6 points). 5 points - student mastered the studied material superficially, inaccurate use of concepts and terms. Written colloquium - at least 50 percent of questions answered. 4-1 points – student's knowledge is insufficient, terms and concepts used incorrectly. Written colloquium - less than 50 percent of test questions answered. Failed colloquium could be retaken. An average grade of all colloquia (of the 1st and the 2nd semester) makes up 10% of the final evaluation.
Accumulative credit		Till the 1st day of the session	Student must fulfil attendance requirements and pass the colloquia of the 1st semester.

Author	**Year of publication**	**Title**	**No of periodical or vol. of publication**	**Publication place and publisher or Internet link**
Required reading				
Young B., O'Dowd G., Woodford P.	2014	Wheater's Functional Histology: a Text and Colour Atlas		Churchill Livingstone https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20090600258

Schoenwolf G. C.	2015	Larsen's Human Embryology		Churchill Livingstone https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20100689383
Šimkūnaitė-Rizgelienė R.	2012	A Practical Guide to Human Embryology		http://www.mf.aha
Šimkūnaitė-Rizgelienė R.	2012	A Practical Guide to General Human Histology		http://www.mf.aha
Recommended reading				
Ross M.H., Pawlina W.	2011	Histology. A Text and Atlas		Lippincott Williams&Wilkins
Gartner L. P.	2017	Textbook of Histology		Elsevier https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20140021375
Drake R., Vogl W.A., Mitchell A.W.M.	2019	Gray's Anatomy for Students.		Churchill Livingstone https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20110053139
Sadler T.W.	2018	Langman‘s Medical Embryology		Lippincott Williams & Wilkins

COURSE UNIT DESCRIPTION

Course unit title	Code
Human Histology II, academic year 2019/2020	**ZMHI2215**

Lecturer(s)	Department(s)
Coordinating: Prof. Renata Šimkūnaitė-Rizgelienė Others: Prof. Violeta Žalgevičienė, lect. Rūta Jacevičiūtė.	Department of Anatomy, Histology and Anthropology, Institute of Biomedical Sciences, Faculty of Medicine, Vilnius University

Cycle	Level of the course unit	Type of the course unit
Integrated studies	-	Compulsory

Mode of delivery	Period of delivery	Language of instruction
Face-to-face: lectures, seminars, practices, consultations, colloquia and self-studies	**Year I, semester II**	**Lithuanian** and **English**

Prerequisites and corequisites	
Prerequisites: Credit of the first semester	**Corequisites (if any):** -

Number of ECTS credits allocated to the course unit	Total student's workload	Contact hours	Self-study hours
5	**134**	**67**	**67**

Purpose of the course unit Programme competences to be developed
The purpose of the course is to aid students in acquiring basic knowledge and understanding of the microscopic structure of human tissues and organs, ensure that students understand the material so that they may systemise, analyse and proceed to the clinical studies.

After the course students are required to know the microscopic structure of human tissues and organs, their origin and main functions, apply theoretical knowledge to practice - recognize, describe and compare histological slides of tissues and organs		
Learning outcomes of the course unit	**Teaching and learning methods**	**Assessment methods**
Generic competences: During the second semester students are required:		
- to act fairly and according to ethical obligations, be empathetic, think critically and self-critically, be creative, take the initiative, communicate with others	Lectures and seminars, self-study	Continuous assessment during seminars
- to make an assessment within the scope of one's competence and, if necessary, ask for help, act in new situations and adapt to them, act independently, solve problems, make judgements, work with other students, organise and plan	Seminars and practice, self-study	Continuous assessment during seminars and practice
- to analyse and synthesize, use knowledge in practice	Seminars and practice, self-study	Continuous assessment during seminars, practice and colloquiums
Subject-specific competences: During the second semester students are required:		
- to know microscopic structure, origin and functions of **sense organs**, recognize and describe the slides of different organs of the sensory system	Theoretical material during the lecture. Study of histological slides, schemes and posters during practice, discussions and analysis during seminar, self-study	Continuous assessment during practice and seminar. At the end of themes about sense organs and the skin – a colloquium. At the end of course unit – an examination
- to know microscopic structure, origin and functions of **integumentary system**, recognize and describe the slides of different structures of the skin	Theoretical material during the lecture. Study of histological slides, schemes and posters during practice, discussions and analysis during seminars, self-study	Continuous assessment during practice and seminar. At the end of themes about sense organs and the skin – a colloquium. At the end of course unit – an examination
- to know microscopic structure, origin and functions of **gastrointestinal system**, recognize and describe the slides of different organs of gastrointestinal system	Theoretical material during the lectures. Study of histological slides, schemes and posters during practice, discussions and analysis during seminars, self-study	Continuous assessment during practice and seminars. At the end of theme – colloquium. At the end of course unit – an examination
- to know microscopic structure, origin and functions of **urinary system**, recognize and describe the slides of different organs of urinary system	Theoretical material during the lectures. Study of histological slides, schemes and posters during practice, discussions and analysis during seminars, self-study	Continuous assessment during practice and seminar. At the end of urogenital theme – a colloquium. At the end of course unit – an examination
- to know microscopic structure, origin and functions of **male reproductive system**, recognize and describe the slides of different organs of male reproductive system	Theoretical material during the lecture. Study of histological slides, schemes and posters during practice, discussions and analysis during seminars, self-study	Continuous assessment during practice and seminar. At the end of urogenital theme – a colloquium. At the end of course unit –an examination
- to know microscopic structure, origin and functions of **female reproductive system**, recognize and describe the	Theoretical material during the lecture. Study of	Continuous assessment during practice and

slides of different organs of female reproductive system	histological slides, schemes and posters during practice, discussions and analysis during seminars, self-study	seminar. At the end of urogenital theme – a colloquium. At the end of course unit – an examination
- to know microscopic structure, origin and functions of **respiratory system**, recognize and describe the slides of different organs of respiratory system	Theoretical material during the lecture. Study of histological slides, schemes and posters during practice, discussions and analysis during seminars, self-study	Continuous assessment during practice and seminar. At the end of themes about respiratory and cardiovascular systems – a colloquium. At the end of course unit – an examination
- to know microscopic structure, origin and functions of **cardiovascular system**, recognize and describe the slides of different organs of cardiovascular system	Theoretical material during the lecture. Study of histological slides, schemes and posters during practice, discussions and analysis during seminars, self-study	Continuous assessment during practice and seminar. At the end of themes about respiratory and cardiovascular systems –a colloquium. At the end of course unit – an examination
- to know microscopic structure, origin and functions of **immune system**, recognize and describe slides of different immune organs	Theoretical material during the lecture. Study of histological slides, schemes and posters during practice, discussions and analysis during seminars, self-study	Continuous assessment during practice and seminar. At the end of themes about immune and endocrine systems – a colloquium. At the end of course unit – an examination
- to know microscopic structure, origin and functions of the **endocrine system**, recognize and describe slides of different endocrine organs	Theoretical material during the lectures. Study of histological slides, schemes and posters during practice, discussions and analysis during seminars, self-study	Continuous assessment during practice and seminar. At the end of themes about immune and endocrine systems – a colloquium. At the end of course unit – an examination
- to recognize, characterize and compare histological slides of all the tissues and organs of the body	Theoretical material during the lecture. Study of histological slides during consultations, comparison, discussions, analysis during seminar	Practical colloquium at the end of the semester

Topics	**Contact work hours**							**Time and tasks of self-study**	
	Lectures	Consultations	Seminars	Practice	Laboratory work	Practical training	**Total contact hours**	**Self-study**	**Tasks**
1. Sense organs	-	-	1	2	-	-	**3**	**6**	Studies of the literature, preparing for seminar and practice
2. Integumentary system	2	-	1	2	-	-	**5**	**4**	Studies of the literature, preparing for seminar and practice. Repetition of the material studied about sense organs and preparation for the

									colloquium
3. Oral organs	2	-	1	2	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice
4. Gastrointestinal tract	2	-	2	1	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice
5. Digestive glands	2	-	1	2	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice. Repetition of the material studied about gastrointestinal system and preparation for the **colloquium**
6. Urinary system	2	-	2	1	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice
7. Male reproductive system	2	-	1	2	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice
8. Female reproductive system	2	-	2	1	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice. Repetition of the material studied about urogenital system and preparation for the **colloquium**.
9. Respiratory system	2	-	2	1	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice
10. Cardiovascular system	2	-	2	1	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice. Repetition of the material studied about respiratory system and preparation for the **colloquium**
11. Immune organs	2	-	1	2	-	-	**5**	**5**	Studies of the literature, preparing for seminar and practice
12. Endocrine system	2	-	2	1	-	-	**5**	**6**	Studies of the literature, preparing for seminar and practice. Repetition of the material studied about immune system and preparation for the **colloquium**
13. Differential diagnostics of histological slides	2	1	3	3	-	-	**9**	**6**	Preparing for seminar and practice. Possibility to study histological slides during the consultation. Preparation for **practical colloquium**
Total	**24**	**1**	**21**	**21**	**-**	**-**	**67**	**67**	

Assessment strategy	**Weight (%)**	**Assessment period**	**Assessment criteria**
Continuous assessment during practice and seminars		During semester	Short questioning on the topic of the current day (in written or oral forms). At the end of the practice the lecturer checks the drawings, points out mistakes, ascertains the correctness of terminology and depicted structures and signs them. Students report on self-dependently explored topics and projects, general discussion on problematic questions during seminars. Attendance of the practices and seminars is mandatory, and missing classes due to justified causes must not exceed 20% of

			the scheduled time. Active attendance of lectures and solving problems presented during the seminars is encouraged.
Interim assessment - **5 colloquia**: Sense organs and Skin Gastrointestinal System; Urogenital System; Respiratory and Cardiovascular Systems; Immune and Endocrine Systems.	5%	During semester	The colloquia are in written (closed or opened questions with schemes, drawings, figures and histological slides) or in oral form (with schemes, drawings, figures and histological slides). Assessment on 10-point scale: 10 points - the student mastered the studied material excellently, is able to analyze and summarize, uses the concepts and terms correctly. Written colloquium - at least 90 percent of questions answered. 8-9 points - the student mastered the studied material very well/well, is able to organize and summarize, uses correctly the concepts and terms. Written colloquium - at least 85 percent of questions (9 points), or 75 percent of questions (8 points) answered. 6-7 points - the student mastered the studied material satisfactorily, some of the concepts and terminology used inaccurately. Written colloquium - answer at least 65 percent of questions (7 points), or 55 percent of questions (6 points). 5 points - student mastered the studied material superficially, inaccurate use of concepts and terms. Written colloquium - at least 50 percent of questions answered. 4-1 points – student's knowledge is insufficient, terms and concepts used incorrectly. Written colloquium - less than 50 percent of test questions answered. Failed colloquium could be retaken. An average grade of all colloquia (of the 1st and the 2nd semester) makes up 10% of the final evaluation.
Practical colloquium (differential diagnostics of histological slides)	20%	End of semester	Student must fulfil attendance requirements and pass the colloquia of the 2nd semester. Student must recognize and describe 5 histological slides, show name and describe the structural components of organ or tissue, answer basic theoretical questions. Each slide is assessed by point from 0 to 2: - 2 points, when slide is recognized, described correctly and all the questions are answered; - 1.5 point, when slide is recognized, described correctly, but questions are not answered or slide is recognized and described repeatedly and all the questions are answered; - 1 point, when slide is recognized and described repeatedly, and only a part of all the questions are answered; - 0.5 point, when slide is recognized and described repeatedly and all the questions are not answered; - 0 point, when slide is not recognized repeatedly and all the questions are not answered. The sum of the points (1-10) makes up assessment of practical colloquium. Failed colloquium could be retaken.
Final Exam	70%	During session	Student must have the credits of the 1st semester, fulfil attendance requirements and pass the theoretical colloquia and practical colloquium of the 2nd semester. Examination in written form is composed of open-ended questions. Answers are assessed by marks from 0 to 10. Average of all the marks makes up assessment of examination. **The final assessment consists of the following:** - **70% - examination;** - **20% - practical colloquium;**

			- **10%- average of theoretical colloquia** (passed during two semesters). The final assessment according to the scheme: 10 – if >90 % are collected, 9 – if >85 % are collected, 8 – if >75 % are collected, 7 – if >65 % are collected, 6 – if >55 % are collected, 5 – if >50 % are collected, 4 – if <50 % are collected.

Author	**Year of publication**	**Title**	**No of periodical or vol. of publication**	**Publication place and publisher or Internet link**
Required reading				
Young B., O'Dowd G., Woodford P.	2014	Wheater's Functional Histology: a Text and Colour Atlas		Churchill Livingstone https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20090600258
Šimkūnaitė-Rizgelienė R.	2012	A Practical Guide to Special Human Histology		http://www.mf.aha
Recommended reading				
Ross M.H., Pawlina W.	2011	Histology. A Text and Atlas		Lippincott Williams&Wilkins
Gartner L. P.	2017	Textbook of Histology		Elsevier https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20140021375
Drake R., Vogl W.A., Mitchell A.W.M.	2019	Gray's Anatomy for Students.		Churchill Livingstone https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20110053139