

Study programme	MEDICAL STUDIES IN ENGLISH				
Cycle	INTEGRATED	Type	UNIVERSITY		
Study track	-	Module	-		
Year of study	2	Semester	III		
Course title	HISTOLOGY AND EMBRYOLOGY	Course code	MFMSE303		
ECTS	10	Status	OBLIGATORY		
Teaching hours		Lectures	Exercises	Seminars	Practice
		50	41	44	0
Teachers	Dr.sc.Katarina Vukojević,red.prof	16			
	Dr.sc.Snježana Mardešić,izv..prof	12	10	10	
	Dr.sc.Sandra Kostoć,izv.prof	12	6	10	
	Anita Kolobarić,v.asist.	5	6	9	
	Maja Barbarić,,v.asist.	5	6	9	
	Danijela Marojević Glibo, asist.		7	2	
	Leonora Bedeković, asist		6	4	
Course objectives	The objectives of this course are to provide information's about morphology of human organs and development of human being, to synthesize the knowledge about the microscopic structure and function of human tissues that build organs and tissues in the human body.				
Course learning outcomes	Learning outcome (LO) Student:		Course learning outcome code	LO code at the study program level	
	Distinguishes the basics of microscopic structure of human body through the microscopic analysis of human tissue and organs preparations.		IU-MFMSE303-1	IU-MSE1	
	Applies the skills in microscopic analysis and recognition of important histological structures of tissues and organs.		IU-MFMSE303-2	IU-MSE2	
	Distinguishes and describes details on general and specific embryology		IU-MFMSE303-3	IU-MSE3	
	Distinguishes the normal body structure and applies the principles on which pathology and pathophysiology are based.		IU-MFMSE303-4	IU-MSE4	
	Distinguishes and applies knowledge in human embryology (recognizing, treating and preventing developmental disorders).		IU-MFMSE303-5	IU-MSE5	
Prerequisites for the course enrolment	In accordance with the Rulebook on the Integrated Studies at the School of Medicine University of Mostar.				
Course content	Week / shift	Topic			
	Lectures	(L1) Gametogenesis, the first and second week of development (L2) Embryonic period, foetal period and congenital malformations (L3) Epithelial and connective tissue (L4) Formation of blood cells (L5) Development of the skeletal system (L6) Development and structure of muscle tissue (L7) Development and structure of the nervous tissue (L8) Development and structure of the heart and blood vessels (L9) Development and structure of the lymphatic system (L10) Development and structure of the neuroendocrine system (L11) Development and structure of the respiratory system, skin system (L12) Development of head and neck (L13) Development of oral cavity (L14) Development of body cavities and structure of alimentary canal			

		(L15) Development and structure of the gastrointestinal tract (L16) Development and structure of the glands of the gastrointestinal tract (L17) Development and structure of the urinary tract (L18) Development and structure of the female reproductive system (L19) Development and structure of the male reproductive system (L20) Development and structure of the ear (L21) Development and structure of the eye					
	Seminars	(S1) Menstrual, ovarian cycle and fertilization (S2) The placenta and placental membranes (S3) Covering and glandular epithelium, cells and intercellular substance of connective tissue (S4) Blood cells and anomalies (S5) Supportive tissue-cartilage, adipose tissue and bone ossification. (S6) Morphological based contractility (S7) The histological structure of the nervous tissue (S8) Structure of the heart and blood vessels, placenta (S9) The lymphatic organs, regional lymph nodes and lymph vessels (S10) The organization of the endocrine glands (S11) Respiratory membranes and skin (S12) Development and anomalies of the organs of the head and neck (S13) Structure of the mouth (S14) General structure of the alimentary canal - oesophagus and stomach (S15) Structure of the digestive system - small and large intestine, appendix (S16) Glands of the gastrointestinal tract (S17) Structure of the urinary tract (S18) Structure of the female reproductive system (S19) Structure of the male reproductive system (S20) Structure of the ear (S21) Structure of the eye					
	Exercises	(E1) Preparing preparations for histology (E2) The placenta and umbilical cord (E3) Lining epithelium, unformed connective tissue, tendons (E4) Smear of bone marrow and blood smear (E5) Hyaline, elastic and connective cartilage, decalcificated bone, a bone specimen, enchondral and desmal ossification (E6) The skeletal, smooth and cardiac muscle (E7) Spinal cord, cerebrum, cerebellum, peripheral nerve ganglia (E8) Heart valves, arteries and veins (E9) Thymus, lymph nodes, spleen and palatine tonsil (E10) The pituitary gland, thyroid gland, adrenal gland, epithelial corpuscle (E11) The lungs and trachea, skin, mammary gland (E12) Lip, tip of the tongue, salivary and papilla vallata (E13) Palate, teeth and tooth development (E14) The oesophagus and stomach (E15) Small and large intestine, appendix (E16) Liver and pancreas (E17) Kidney, bladder and urethra (E18) Ovary, fallopian tube, uterus, vagina (E19) Testis, vas deferens, prostate, seminal vesicle and penis (E20) Ear (E21) Eye					
Language	English						
E-learning	Up to 10%.						
Teaching methods	Teaching, interactive and active-experiential.						
Types of assessment (indicate - Bold)							
Type of pre-examination obligation				Type of exam			
midterm	seminar paper	essay/ report	practical/project task	other	written exam	oral exam	practical

Allocation of ECTS credits and share in the grade				
Student obligations	Learning outcome code	Hours of workload	Share in ECTS	Share in grade
Attending classes		135	4.5	0%
Pre-exam/Written exam	IU- MFMSE303-3 IU- MFMSE303-4 IU- MFMSE303-5	90	3	50%
Oral exam	IU- MFMSE303-3 IU- MFMSE303-4 IU- MFMSE303-5	30	1	20%
Practical exam	IU- MFMSE303-1 IU- MFMSE303-2	45	1.5	30%
In total		300	10	100%

Method of calculating the final grade

The final score is the sum of = complete written (50%) + practical (20%) + oral (30%) exam.
A detailed description is given in the additional information about the subject.

Literature (indicate)	Title (title, author, year)	Edition		Language				Type of literature			
		own	other	croatian	english	other	multilingual	book	article	script	other
Compulsory	Junqueira's Basic Histology: Text and Atlas, 12th Edition		X		X						X
	Langman's Medical Embryology. 12th edition by Sadler, T. W. (2011)		X		X			X			
Additional	VMS image collection: Histology Atlas, 2008.	X					X				X

Additional course information

Students are obliged to regularly attend and actively participate in all forms of classes.

During the course there will be two partial tests (H1 and H2). The first partial test (H1) includes General Embryology and development of the skeletal, muscular, circulatory, respiratory, nervous system and skin (Special embryology). Histological threads in the first partial test consists of epithelial, connective, fat, cartilage, bone, nerve and muscle tissue and vascular system, blood cells and formation of blood cells, immune, respiratory, neuroendocrine system and skin. The first partial test consists of 60 questions (30 questions from Embryology and 30 questions from Histology).

The second partial test (H2) includes the development of body cavities, digestive and urogenital system, the development of head and neck, ear and eye (Special embryology). Histological threads in the second partial test consists of the digestive system, liver, pancreas, urinary system, male and female reproductive system and sensory organs. The second partial test consists of 50 questions (20 questions from Embryology and 30 questions from Histology).

The total percentage of correct answers needed for a positive assessment, 60% of the written tests. For a positive evaluation is also necessary to achieve 50% correct answers from the first and second group of questions from Embryology and from the first and second group of questions from Histology.

For students who didn't pass partial tests, written exam makes a single unit of 110 questions and cannot be taken separately.

Positive mark of preliminary tests is recognized during the current academic year.

All students who weren't absent from school have the right to take partial tests. Also, those who pass additional exam from lectures during which they were not in class or on which they didn't show sufficient knowledge can approach to test.

H1-first partial test

36-41=(2);

42-48=(3);

49-54=(4);

55-60=(5);

H2-second partial test

30-35=(2);

36-40=(3);

41-45=(4);

46-50=(5);

Final written exam

66-76=(2);

77-88=(3);

89-99=(4);

100-110=(5);

Practical and oral exam are available to students who have passed the first and second part of the test in Histology and Embryology.

Practical exam (20% of the final grade)

The practical exam consists of 7 histological samples. Students must at least identify 5 out of 7 samples under the microscope, and then must identify microscopic details on them. The recognition of the samples is scored (maximum 7 points), showing the required structure on the samples (maximum 7 points), and finding the required structure to the samples (maximum 7 points).

13-14 = (2);

15-17 = (3);

18-19 = (4);

20-21 = (5);

Oral examination (30% of the final grade) The oral exam consists of 4 questions (1 general embryology, 1 special embryology, 1 general histology, 1 special histology). Students draw cards with certain issues.