

1	Subject	<b>HISTOLOGY AND EMBRYOLOGY</b>			
2	Code	DHE108			
3	Study Program	Study Program of Integrated studies in dental medicine			
4	Organizing Institution (Unit, Institute, Chair, Department)	Institute of Histology & embryology, Faculty of medicine, St Cyril and Methodius University, Skopje 50-Divizija no.6, 1000 Skopje tel: 02 3214 294 e-mail: histologija@medf.ukim.edu.mk			
5	Educational degree (first or second cycle)	Integrated study			
6	Study year/semester	1/2	7	Number of credits	7
8	Teacher	Associated professor Lena Kakasheva-Mazhenkovska, MD			
9	Preconditions	/			
10	<b>Teaching goals:</b> <ul style="list-style-type: none"> <li>To get acquainted with: the concept of human prenatal development and its crucial developmental processes; the structure and function of the placenta and fetal membranes; the causes and consequences of the disturbances of the normal development.</li> <li>To get acquainted with the concept of formation of oral cavity and of origin of the developmental anomalies in the oro-facial region.</li> <li>To get acquainted with the use of the microscope and to be able to verify the tissues and their main structural components on microscopic slides.</li> <li>To be able to explain the histological structure of each segment of the oral cavity and to verify their main functional elements on microscopic slides.</li> <li>To be able to elaborate the components of each organ system and the structure of the main organ in each of them.</li> </ul>				
11	<b>Brief content</b>				
	<b>Theoretical course</b>				Class
	<b>Prenatal development (general embryology):</b> <ul style="list-style-type: none"> <li>The crucial developmental processes which take part in each of the three prenatal periods;</li> <li>The structure and function of the placenta, umbilical cord and other fetal membranes;</li> <li>Disturbances of the prenatal development and origin of the congenital anomalies</li> </ul>				6
	<b>Embryonic development of the oral cavity;</b> <ul style="list-style-type: none"> <li>Formation of the head and pharyngeal apparatus.</li> <li>Development of maxilla, mandibula, palate, the nose and sinuses, lips, cheeks, tongue, face, salivary glands, pharynx, vestibulum and cavum oris proprium.</li> <li>Tooth formation (odontogenesis).</li> </ul> <b>Causes and origin of the congenital anomalies of this region</b>				6
	<b>The structure of the tissues.</b>				6
	<b>Histological structure of the wall and the components of the oral cavity:</b> (teeth, lips, palate, cheeks, salivary glands, pharynx, tonsils)				9
	<b>The structure of the organ systems.</b>				18
	Total				45
	<b>Practical lessons:</b>				Class
	<ul style="list-style-type: none"> <li>Explaining the meaning (the value) of knowledge of embryology for the medical practice</li> <li>The concept of prenatal development (discussion)</li> <li>Analysis of the structure of placenta and umbilical cord</li> <li>Film projection</li> </ul>				6

	<ul style="list-style-type: none"> <li>The concept of development of the oral cavity and of the processes in tooth formation (discussion)</li> <li>Histological analysis of the structure of teeth and the tooth in the process of formation.</li> </ul>	3	
	<ul style="list-style-type: none"> <li>Learning the method of microscopy</li> <li>Explaining the basic histological terms (histological technique, the cell, tissue, organ and system)</li> </ul>	1	
	<ul style="list-style-type: none"> <li>Learning the structural characteristics and types of epithelial, connective, cartilaginous, bone, muscle and nerve tissues from microscopic slides.</li> </ul>	8	
	<ul style="list-style-type: none"> <li>Learning the structural characteristics of teeth, lips, palate, cheeks, salivary glands, pharynx and tonsils, from microscopic slides.</li> </ul>	6	
	<ul style="list-style-type: none"> <li>Learning the structural characteristics of heart, vascular tree, lymph nodes, spleen, trachea and lungs, skin, alimentary system with the liver and pancreas, endocrine glands, kidney, eye and ear from microscopic slides.</li> </ul>	6	
	Total	30	
	<b>Seminars</b>	Class	
	Elaboration of topics from the relevant material, presentation of the topics by the students and active involvement of the students until discussion of the given topic.	10	
12	Methods of studying: class room oriented lectures, interactive lectures, group work, practical training, seminar paper		
13	Total available time	210 classes	
14	Organization of the course	45 classes - theoretical course, 30 classes- practical course, 10 classes – seminars, 125 classes - home individual learning and other activities	
15	Forms of teaching activities	15.1. Theoretical course	45 classes
		15.2. Practical course, seminars	Practical course - 30 classes, seminars – 10 classes
16	Other forms of activities	16.1. Project tasks	
		16.2. Individual tasks	15 classes
		16.3. Individual (home) learning	110 classes
17	Method of assessment	17.1. <b>1- Written:</b> Prenatal development; Concept of oral cavity formation.  <b>2- Oral with microscopy:</b> Histological structure of the components of the oral cavity & structure of the tissues.  <b>3- Written:</b> Basic histology of the organ systems.  For the students who did not pass the continuous assessment (with min 60%), there is an opportunity for oral exam in June, September or January.	12 – 20 points  21 – 35 points  15 – 25 points
		17.2. For participation on theoretical lessons For active participation on practical sess., For oral presentation on seminar:	2 – 3 points 8 – 13 points 2 – 4 points
		17.3. Final (oral) exam No	points
18	Grading criteria (points / grade)	Up to 59 points	5 (five) (F)
		from 60 to 67 points	6 (six) (E)

		from 68 to 75 points	7 (seven) (D)			
		from 76 to 84 points	8 (eight) (C)			
		from 85 to 93 points	9 (nine) (B)			
		from 94 to 100 points	10 (ten) (A)			
19	Requirement for signature and taking the final exam	To get the signature, the student should obtain minimum points in both theoretical and practical lectures, including presence on all seminar sessions; The exam of Histology & embryology is passed when the student has obtained the minimum points from the three assessment of knowledge. The grade for the entire exam is obtained according to the table of grades and based on the sum of the points gained in all the activities including the continual assessment.				
20	Language of the course	English				
21	Method for evaluation of the quality of education	Anonymous student's evaluation of the subject, teachers and collaborators involved in the educational activities				
22	<b>Literature</b>					
	22.1.	<b>Mandatory textbooks</b>				
		No.	Author	Title	Publisher	Year
		1	Wojcech Pawlina	HISTOLOGY A Text and Atlas	Wolters Kluwer	2016
		2	Douglas F. Paulsen	<i>Histology &amp; Cell Biology (Examination &amp; Board Review)</i>	Elsevier	2000
		3	L.Carlos Junqueira, J, carneiro, R.O. Kelley	<i>Basic Histology (Examination &amp; Board review)</i>	A LANGE medical book	1995
		4	James K.Avery	<i>Oral Development and Histology</i>	Thieme	2001
	22.2.	<b>Additional literature</b>				
		No.	Author	Title	Publisher	Year
		1	Milenkova L., Kostovska N.	<i>Opsta embriologija na covekot, (General human embryology)</i>	De Gama-Ckonje	2002
		2	Milenkova L., Kostovska N., Bajraktarova B.	<i>Histoloska gradba i embrionalen razvitok na usnata praznina, (Histology and embryology of the oral cavity)</i>	De Gama - Skopje	2005
		3	Kostovska N., Milenkova L.	<i>Histologija: Gradba na tkivata (Histology: Structure of the tissues)</i>	Dekatlon, - Skopje	2008
			Milenkova L., Kostovska N., Bajraktarova B.	<i>Histoloska gradba i embrionalen razvitok na usnata praznina, (Histology &amp; embryology of oral cavity)</i>	De Gama -Ckonje	2005

			Mitevska E.	<i>Praktikum -Gradba na tkivata i organskite sistemi;</i>	<i>Medicinski fakultet vo Skopje,</i>	2012
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