Attachment No. 3		Course program for the first cycle of studies				
1.	Course title	Histology and embryology				
2.	Code	DMMHE1				
3.	Study program	Dentistry - integrated first and second cycle of studies				
4.	Organizer of the study program (unit, i.e., institute, department, division)	University "Ss. Cyril and Methodius" in Skopje, Faculty of Medicine - Skopje, Department of Histology and Embryology				
5.	Degree (first, second, third cycle)	Integrated first and second cycle studies				
6.	Academic year/semester	Year	1	Semester	2	
7	Course workload expressed in ECTS credits	7				
8.	Teacher (in case of multiple teachers, designated teacher in charge)	Asst. Prof. Dr. Irena Kostadinova Petrova				
9.	Language in which the curriculum is conducted	English				
10.	Necessary prerequisites for listening and taking the class	None				
11.	Course objectives (competences) and learning outcomes:	Detailed knowledge - Know the main parts of the microscope and be able to use the microscope, to recognize each type of tissue and its basic structural components on the microscope Detailed knowledge - To be able to explain the principle of construction of each segment of the oral cavity; to highlight the specifics in its structure that allow its function, and to recognize them on a microscope Broader knowledge - To explain the basic principle of organ construction and to highlight the structural specifics that enable its function Broader knowledge - To be able to explain the chronology of prenatal development and the most important developmental processes; how and why the disturbance of normal development occurs; the principle of construction, and the basic function of the placenta and umbilical cord Detailed knowledge - To be able to explain the concept of oral cavity formation with all structures involved – including teeth, as well as the occurrence of the most common congenital anomalies in this region				
12.	Detailed course content by chapter and units, with the learning outcomes for each chapter	Theoretical teaching - lectures 1. Chapter Tissues - Epithelial tissue: roof epithelium (single-layer squamous, single-layer cuboidal and single-layer columnar epithelium; pseudolayer and transitional epithelium; multi-layer squamous stratified and multi-layer squamous wet epithelium); glandular epithelium and gland types 3classes - Supporting tissues: connective tissues (scarce connective tissue, dense regular				

		and dense irregular connective tissue, adipose tissue, pigment tissue, elastic connective tissue, reticular connective tissue and blood; cartilage tissue; bone tissue 3 classes - Muscle tissue: fatty, skeletal, and cardiac muscle tissue 2 classes - Nerve tissue: nerve cell, peripheral nerve, spinal cord, and spinal ganglia 2 classes Results of Chapter 1 - The student will be able to explain the principle of histological construction of different types of tissues in the human organism, to highlight the specifics in the histological structure that enable their function, and to recognize them on a microscope 2. Chapter – Organ systems - Oral cavity and tooth 2 classes - Digestive system: salivary glands, esophagus, stomach, small intestine, colon and appendix, liver, and pancreas 3 classes - Cardiovascular system: arteries, veins, heart 2 classes - Immune system: thymus, tonsils, lymph node, and spleen 2 classes - Respiratory system: nasal cavity, trachea, and lungs 2 classes - Urinary system: kidney and ureter 2 classes - Male reproductive system: testicle, epididymis, sperm duct, and prostate 2 classes - Female reproductive system: ovary, fallopian tubes, uterus, and vagina 2 classes - Endocrine system: pituitary, thyroid, and adrenal gland 2 classes - Skin and mammary glands 2 classes - Central nervous system 2 classes - Eye 2 classes - Ear 2 classes Results of Chapter 2 - The student will be able to explain the principle of histological construction of different types of tissues in the human organism, to highlight the specifics in the histological structure that enable their function, and to recognize them on a microscope 3. Chapter – Embryology - Prenatal development, specifics of the three periods of prenatal development 3 classes - Construction and function of the placenta, umbilical cord, and fetal membranes for 2 classes - Causes and consequences of the disorder of normal prenatal development 1 classes - Embryonic development of the oral cavity and the occurrence of the most common congenital anomalies, formation of the head and pharyngeal apparatus, development of the orofacial region (maxilla, mandible, palatum, nose and sinuses, lips and cheeks, face, tongue, salivary glands, nasopharynx, oropharynx, and vestibulum et cavum oris proprium), odontogenesis 2 classes Results of Chapter 3 - The student will be able to explain the chronology of prenatal development and the most important developmental processes; how and why normal development is disturbed; the principle of construction and the basic function of the placenta and umbilical cord, the embryonic development of the oral cavity with all structures involved – including the teeth, as well as the occurrence of the most common congenital anomalies in this region Total: .....45 classes Practical teaching - exercises - From the first chapter 10 classes - From the second chapter 31 classes - From the third chapter 4 classes Total: .....45 classes
13	Interrelation of subjects	Connection to anatomy and pathology
14.	Detailed description of the teaching and working methods for the subject	Learning methods: Interactive classes (theoretical), working in small groups (exercises), and other forms provided by the common ECTS criteria

15.	Total Available Time	210 classes			
16.	Forms of teaching activities	16.1.	Lectures - theoretical teaching. Classes		45
		16.2.	Exercises (laboratory, auditorium), seminars, teamwork: classes		45
		16.3.	Practice: classes		
17.	Other forms of activities	17.1.	Project assignments: classes		
		17.2.	Independent assignments: classes		
		17.3.	Home study – assignments		120
18	Signature requirements	Example 2: Absence of up to two exercises and attendance at 50% of lectures			
19	Method of grading				
	19.1.	Tests: points		Colloquium-1 (test and microscopy): Histological structure of tissues 20+15 points Colloquium-2 (test and microscopy): Histological structure of organ systems 20+15 points Colloquium-3 (test): General embryology and embryology of the oral cavity 20 points	
		Attendance at lectures Attendance at exercises		1-3 points 5-7 points	
	19.2.	Seminar work/project, written and oral presentation: points			
	19.3.	Final exam: points			
20	Evaluation criteria (points/grade)		up to 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			69 to 76 points	7 (seven) (D)	
			77 to 84 points	8 (eight) (C)	
			85 to 92 points	9 (nine) (B)	
			93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching	Self-evaluation by students, assistant control during the practical teaching and assessment of the achieved student success, as well as the pass rate of students who have passed the subject			

22. Literature

22.1. Required literature

Ord. number	Author	Title	Publisher	Year
1.	Milenkova L., Kostovska N.	General human embryology	De Gama – Skopje	2002
2.	Kostovska N., Milenkova L.	Histology: Tissue construction	Decatlon, Skopje	2008
3.	Milenkova L., Kostovska N. Bajraktarova B.	Histological structure and embryonic development of the oral cavity	De Gama – Skopje	2005
4.	L. Milenkova, N. Kostovska	Histological structure of the organ systems	Faculty of Medicine, UKIM	2013

22.2. Additional literature

Ord. number	Author	Title	Publisher	Year
1.	Department of Histology and Embryology	Learning materials in the form of E-files with topics from the practical classes		2015
2.		www.biolucida.com online program for practical classes		