

1	Subject	Oral biochemistry and physiology			
2	Code	DOB204			
3	Study Program	Study Program of Integrated studies in dental medicine			
4	Organizing Institution (Unit, Institute, Chair, Department)	Faculty of Dentistry Skopje, Department of oral pathology and periodontology			
5	Educational degree (first or second cycle)	Integrated study			
6	Study year/semester	2/3	7	Number of credits	3
8	Teacher	Teachers from the Department of oral pathology and periodontology			
9	Preconditions	Signatures of first and second semester courses			
10	Teaching goals: students to gain a thorough knowledge of the biochemical characteristics of oral tissues and the physiological processes that take place in the oral cavity and are a prerequisite for oral health.				

1 1	Brief content			
	Theoretical course			Class
	Introduction to the syllabus, oral homeostasis and its meaning			1
	Salivary glands and control of saliva secretion, stimulated and unstimulated saliva secretion			2
	Mechanism of saliva secretion			1
	Salivary proteins: classes, significance and their secretion			1
	Antimicrobial peptides			2
	Other salivary proteins			2
	Salivary Mucins			1
	Local nonspecific and specific defense in the oral cavity, sIgA			2
	Biochemical characteristics of collagen and collagen synthesis			2
	First colloquium			1
	Biological mineralization of oral tissues			1
	Biochemical properties of enamel, dentin, cement and alveolar bone			2
	Changes in the composition of hydroxyapatite, adsorption, isoionic and heteroionic changes			1
	Dental pellicle, formation, composition and its significance			1
	Biochemical characteristics of dental plaque(biofilm) formation			1
	Protein matrix and extracellular polysaccharides in dental plaque(biofilm)			1
	Metabolic processes in the dental plaque (biofilm): Anabolic, catabolic and transport of simple sugars in bacterial cell			1
	Metabolic processes in dental plaque (biofilm): glycogenesis, glycogenolysis, glycolysis, lipogenesis, synthesis of amino acids and toxic amines in dental plaque			3
	Changes in pH in the biofilm			1
	Biofilm and oral homeostasis			2
	Second colloquium			1
	Total			30
	Practical lessons:			Class

	Introduction to the subject, introduction to the work and rules of operation in the biochemical laboratory		1	
	Collection of stimulated and non-stimulated saliva		2	
	Processing and storage of saliva for biochemical analysis		2	
	Demonstration of the effect of salivary amylase		2	
	Mucin screening - Molisch test, Qualitative protein assay in saliva		2	
	Quantitative determination of proteins in saliva		2	
	Quantitative determination of calcium and phosphate in saliva		2	
	Determination of salivary viscosity		2	
	Total		15	
12	Methods of studying: interactive teaching (theoretical), small group work (practical training-exercises) and other forms provided by common ECTS criteria			
13	Total available time	90 classes		
14	Organization of the course	30 classes(lectures) - theoretical course, 15 classes- practical course, 45 classes - home individual learning and other forms of teaching activities		
15	Forms of teaching activities	15.1.	Theoretical course	30 classes
		15.2.	Practical course (laboratory, auditory), seminars, teamwork	15 classes
16	Other forms of activities	16.1.	Project tasks	
		16.2.	Individual tasks	
		16.3.	Individual (home) learning	45 classes
17	Method of assessment	17.1.	Tests	30 points
		17.2.	Active participation in theoretical course (3 points) and practical course (7 points)	10 points
		17.3.	Final (oral) exam	60 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	<p>The student is required to actively follow all of the planned activities.</p> <p>Conditional criteria for assessment of knowledge: in order to get a signature, the student should obtain minimum points in both theoretical and practical courses, that is attendance in theoretical course (minimum 60% of lectures) and activity at theoretical and practical course (minimum 90% of presence and activity at practical course).</p> <p>In order to take the final exam, the student must have passed the following subjects: medical chemistry, biology, biochemistry and should obtain the minimum points from activity and test. If the student has not obtained the minimum points (24 points) in the continual assessments, he/she in next exam session will have test exam (40 points) and final exam (60 points).</p>		
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. Control of teaching assistants at practical course and assessment of student achievement, as well as percent of students who passed the subject.				
22	Literature					
	22.1.	Mandatory textbooks				
		No.	Author	Title	Publisher	Year
		1	Levine M.	Topics in dental biochemistry	DOI	2011
	2	Ivanovski K., Dirjanska K., Mindova S., Ristoska S.	Oral biochemistry-practicum	Faculty of Dentistry	2012	
	22.2.	Additional literature				
No.		Author	Title	Publisher	Year	
1		Ivanovski K., Nakova M., Pesevska S	Oral biochemistry	Faculty of Dentistry	2012	