

		1.	Bajraktarova Valjakova E, Guguvcevski Lj, Korunoska-Stevkovska V, Gigovski N, Kapusevska B, Mijoska A, Bajevska J, Bajraktarova Misevska C, Grozdanov A.	Dental ceramic materials, Part I: Technological development of all-ceramic dental materials.	Macedonian Dental Review 2018; 41(1-2):30-4.	2018
		2.				

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Annex no. 3		First cycle study program			
1.	Title of courses	Orthodontic appliances 2			
2.	Code	PDTMOD3			
3.	Study Program	Professional Dental Technicians			
4.	Organizer of the study program (unit, i.e. institute, department, division)	UKIM - Faculty of Dentistry – Skopje, Orthodontics Department			
5.	Degree (first, second, third cycle)	First Cycle			
6.	Academic year/semester	Year	3	semester	5
7.	Course load expressed in ECTS credits	5			
8.	Teacher (in case of multiple teachers, a responsible teacher is appointed)	Prof. Dr. Biljana Dzipunova and teachers from the Department of Orthodontics			
9.	Course language	English			
10.	Necessary prerequisites for listening to and passing the course	Passed Basics of orthodontics and Orthodontic appliances 1			
11.	Course objectives (competencies) and learning outcomes:	Detailed introduction of students to the design, techniques and methods of manufacturing different types of fixed orthodontic and retention appliances.			
12.	Detailed content of the course by chapters and units with learning outcomes for each chapter	Theoretical teaching: Chapter 1 – development, significance, specifics, modifications, biomechanics and indications of different types of fixed orthodontic appliances Introduction to modern types of fixed appliances and techniques, their components, indications and contraindications 2 classes Direct and indirect method of placing braces (bonding) 2 classes CAD / CAM technology in orthodontic technique 2 classes <i>Outcomes of the 1st chapter - the student acquires knowledge of modern techniques and protocols in fixed orthodontic therapy</i> Chapter 2 - fixed appliances with labiolingual technique for jaw expansion, molar distalization and correction of sagittal irregularities Fixed appliances with labiolingual technique - labial arch technique - lip bumper and high labial arch 2 classes			

		Fixed appliances with lingual arch technique - movable lingual arch, Quad helix..... 2 classes Fixed expanders for both jaws for rapid and semi-rapid expansion - Quad helix, Hyrax screw, bonded appliances 2 classes Orthodontic face mask - Delaire mask, Facial arch – Headgear 2 classes. Distalization appliances for the first permanent molars - Pendulum, Pendex, T-rex, Distal Jet Appliances, Frog appliances, Nitanium Molar Rotator, Smart jets appliances 2 classes Herbst appliance 2 classes MARA (Mandibular Anterior Repositioning Appliance) II class correction appliance 1 class MTA (The Modified Tandem) III class correction appliance 1 class <i>Outcomes of the 2nd chapter - the student obtains knowledge to recognize fixed appliances according to indications and to know the biomechanics, specifics and fabrication of various intra- and extraoral fixed appliances with labiolingual technique.</i> Chapter 3 – Fixed appliances in interceptive orthodontics and retention Fixed space keepers - lingual arch with and without loops, transpalatal arch, Nance palatal arch, aesthetic space keepers 2 classes Relapses and retention 2 classes Fixed retainers and fixed appliances for breaking bad habits 2 classes <i>Outcomes of the 3rd chapter - the student obtains knowledge about the indications, specifics and fabrication of various fixed space keepers and fixed retention appliances.</i> Chapter 4 - fixed appliances with bone anchorage Microimplants, MARPE, plate for applying elastics in III class 2 classes Screws for distraction osteogenesis 2 classes <i>Outcomes of the 4th chapter - the student acquires knowledge about the indications, specifics and fabrication of fixed appliances with bone anchorage</i> Total:30 classes <i>Exercises:</i> <i>Manufacturing of individual and adapting semi-fabricated fixed appliances with labiolingual technique: Biederman cleft palate appliance with 4 rings and Hyrax screw, Quad helix appliance, intraoral arches for Delaire's face mask, Headgear cheek arch, pendulum appliance, lip bumper appliance, fixed space keepers, fixed retainers</i> Total: 60 classes			
13	Interrelationship of courses	Basics of orthodontics Orthodontic appliances 1			
14.	Detailed description of the teaching and working methods for the subject	Interactive teaching, laboratory exercises, work in small groups, demonstration of the technique for making various types of fixed orthodontic and retention appliances, and independent research in preparation of a seminar paper.			
15.	Total available classes fund	150 classes			
16.		<table> <tr> <td>16.1.</td><td>Lectures - theoretical teaching, classes</td><td>30</td></tr> </table>	16.1.	Lectures - theoretical teaching, classes	30
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	Forms of teaching activities		16.2.	Exercises (<u>laboratory</u> , classroom), seminars, teamwork: classes	60	
			16.3.	Practice: classes		
17.	Other forms of activities		17.1.	Project work: classes		
			17.2.	Individual work: classes		
			17.3.	Homework - tasks	60	
18	Signature requirements		To obtain a signature, attendance to at least 60% of the theoretical classes demonstrated activity classes, attendance to at least 80% of the exercises, and a prepared and presented operation are required.			
19	Method of the evaluation					
	19.1.	Tests: points (2 tests X 25 points)			50	
	19.2.	Seminar work/project, written and oral presentation: points			10	
	19.3.	Final exam: points			40	
20	Evaluation criteria (points/grade)			up to 59 points	5 (five) (F)	
				from 60 to 68 points	6 (six) (E)	
				from 69 to 76 points	7 (seven) (D)	
				from 77 to 84 points	8 (eight) (C)	
				from 85 to 92 points	9 (nine) (B)	
				from 93 to 100 points	10 (ten) (A)	
21.	Method of monitoring the quality of teaching			Self-evaluation by students, control of assistants in carrying out practical teaching and assessment of the achieved success of students, as well as the pass rate of students who have passed the course		
22.	Literature					
	22.1.	Compulsory literature				
		Serial number	Author	Title	Publisher	Year
		1.	Zuzhelova M.	Orthodontics	Faculty of Dentistry	2004
		2.	Teachers from after Department of Orthodontics	Presentation slides	Faculty of Dentistry	
	22.2.	For further reading				
		Serial number	Author	Title	Publisher	Year
		1.	Proffit W, Fields H, Larson B	Contemporary Orthodontics	Elsevier Health Sciences, 6st ed	2018
		2.	Mileusnic B, Jovanovic D.	Orthodontic appliances with foundation of orthodontics	Institute for textbooks and teaching aids Belgrade	2004
		3.	Virtz U.	Atlas of orthodontic and orofacial orthopedic technique	Dentaurum	2018

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Annex no. 3		First cycle study program
1.	Title of courses	Implantology
2.	Code	PDTMIM3
3.	Study Program	Professional Dental Technicians
4.	Organizer of the study	UKIM - Faculty of Dentistry – Skopje,