

		Serial number	Author	Title	Publisher	Year
		1.	A. Damien Walmsley et al.	Restorative Dentistry	Ars Lamina LLC	2011
		2.				
		3.				

Serial number: 24

Annex no. 3		First cycle study program			
1.	Title of courses	Orthodontic appliances 1			
2.	Code	PDTMOD2			
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	2	semester	4
7.	Course load expressed in ECTS credits	7			
8.	Teacher (in case of multiple teachers, a responsible teacher is appointed)	Prof. Dr. Natasha Tosheska Spasova and teachers from the Department of Orthodontics			
9.	Course language	English			
10.	Necessary prerequisites for listening to and passing the course	For attendance: Attended Basics of orthodontics For exam: Passed Basics of orthodontics			
11.	Course objectives (competencies) and learning outcomes:	Introducing students to different types of mobile and functional appliances for various orthodontic irregularities, their technical production and design. Introducing the method of manufacturing obturators and stimulators for cleft lip and palate, as well as personalizing the elements and size of the appliances. Introducing different types of mobile retainers, splints and guards, with the possibility of complete flexibility and creativity in their design and production.			
12.	Detailed content of the course by chapters and units with learning outcomes for each chapter	Theoretical teaching Chapter 1 Introduction to biomechanics in orthodontics, types of orthodontic movements and orthodontic appliances Biomechanics in orthodontics 2 classes Types of orthodontic movements 2 classes Types of orthodontic appliances 2 classes Introduction to interceptive orthodontics and mobile interceptive appliances for maintaining space in dental arches - space keepers (functional and non-functional) 2 classes <i>Outcomes of the 1st chapter: The student will be introduced to biomechanics in orthodontics, types of orthodontic movements and orthodontic appliances.</i> Chapter 2 Active mobile appliances, components, mobile retainers and manufacturing methods Active mobile appliances, indications, components: active free plate, wire retention elements (hooks) and erosive ridges 2 classes Active wire elements (labial arch, springs, barbs, tongue depressors) and screws 2 classes Polymerization - a method of manufacturing active mobile devices			

		 1 class Mobile acrylic retainers (Hawley appliance, spring appliances, modified springs, Wraparound appliances, E-Z retainer) 1 class Mobile thermoplastic retainers (essix, positioners) and aligners 2 classes <i>Outcomes of the 2nd chapter: The student acquires knowledge and skills in the independent production of active mobile appliances and mobile acrylic and thermoplastic retainers.</i> Chapter 3 Mobile functional appliances, obturators and stimulators for cleft lip and palate Introduction to the history of functional appliances, functional occlusion and the use of functional forces for orthopedic correction and growth modification, construction bite, fixator 2 classes Technical production of the functional devices - monoblock according to Andresen Hauple, monoblock according to Grude, reduced activator according to Schmuth, open elastic activator according to Klammt, kinetor according to Stockfisch 2 classes Technical production of Twin block appliance, Dukovator, Lehman appliance, T2 appliance, Van Beek appliance 1 class Technical production of Bioblock - orthotropic appliance for modification of jaw growth at an early age, use and method of production 1 class Technical production of functional appliances - bionators according to Balters, bioactivators, function regulators according to Frankel 2 classes Opturators and stimulators for cleft lip and palate 2 classes <i>Outcomes of the 3rd chapter: The student acquires knowledge and skills in the independent production of different functional appliances and opturators in patients with cleft.</i> Chapter 4 Types of Orthodontic Occlusal Splints, Guards and Devices for Snoring and Obstructive Sleep Apnea (OSA) Orthodontic Occlusal Splints for: Orthodontic Surgery, TMJ Dysfunctions (Gelb-Mora), Condylar Fractures, Teeth Whitening 2 classes Mouthguards against bruxism, mouthguards for breaking bad habits 1 class Anti-snoring and obstructive sleep apnea (OSA) aids: EMA, Serene Silenser, Moses Elite 1 class <i>Outcomes of the 4th chapter: the student will be introduced to different types of occlusal splints, guards and anti-snoring and obstructive sleep apnea (OSA) aids</i> Total: 30 classes Exercises: Production of retention elements for active mobile appliances: drop, arrow, half-arrow, Adams and double Adams hooks. Production of active elements for active mobile appliances: labial arch with U and M loops, lowered labial arch and springs. Production of the acrylic base, installation of retention and active elements, installation of a screw, production of lateral and frontal bite ridges (oblique and straight). Cutting the appliance and polishing. Demonstration and production of mobile holders in space. Production of an activator according to Andresen Hauple. Production of an activator according to Grude; Production of a function regulator according to Frankel; Production of a Twin block appliance; Production of retention appliances -
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		positioners; Production of obturators and stimulators for cleft lip and palate Total: 90 classes			
13.	Interrelationship of courses	Basics of orthodontics Orthodontic appliances 2			
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 mobile, functional appliances, obturators, splints and guards, independent research in preparation of a seminar paper.			
15.	Total available classes fund	210 classes			
16.	Forms of teaching activities	16.1.	Lectures - theoretical teaching: classes	30	
		16.2.	Exercises (<u>laboratory</u> , classroom), seminars, teamwork: classes	90	
		16.3.	Practice: classes		
17.	Other forms of activities	17.1.	Project work: classes		
		17.2.	Individual work: classes	20	
		17.3.	Homework - tasks	70	
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			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
		1.	Zuzhelova M.	Orthodontics for Professional Dental Technicians	Faculty of Dentistry, Ss. Cyril and Methodius University Skopje
					Year

		2.	Isaacson KG, Muir JD, Reed RT.	Removable orthodontic appliances.	Oxford: Wright	2002.
		3.	Graber TM, Newmann B.	Removable orthodontic appliances. 2nd ed.	Philadelphia: W B Saunders Co;	1984
		4.	Teachers from the Department of Orthodontics	Presentation slides	Faculty of Dentistry University of Ss Ss. Cyril and Methodius Skopje	
	22.2.	For further reading				
		Serial number	Author	Title	Publisher	Year
		1.	Mileusnic B, Jovanovic D.	Orthodontic appliances with foundation of orthodontics	Institute for textbooks and teaching aids, Belgrade	2004

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Annex no. 3		First cycle study program			
1.	Title of courses	Occlusion			
2.	Code	PDTMOC2			
3.	Study Program	Professional Dental Technicians			
4.	Organizer of the study program (unit, i.e. institute, department, division)	UKIM - Faculty of Dentistry – Skopje, Department of Dental Prosthetics			
5.	Degree (first, second, third cycle)	First Cycle			
6.	Academic year/semester	Year	2	semester	4
7.	Course load expressed in ECTS credits	3			
8.	Teacher (in case of multiple teachers, a responsible teacher is appointed)	Prof. Aneta Mijoska, PhD and teachers from the Department of Dental Prosthetics			
9.	Course language	English			
10.	Necessary prerequisites for listening to and passing the course	None			
11.	Course objectives (competencies) and learning outcomes:	Students will be trained to correctly diagnose normal occlusion as well as occlusion abnormalities, reconstruct occlusion with prosthetic constructions, and establish occlusal balance in patients with removable and fixed prosthetic restorations.			
12.	Detailed content of the course by chapters and units with learning outcomes for each chapter	Theoretical teaching Chapter 1 - Introduction and concept of occlusion and articulation Prosthetic and orthodontic concepts of occlusion. Static and dynamic occlusion, individual occlusion, centric relation, articulation (protrusive, retrusive and lateral movements) 1 class Articulation in natural and artificial dentition, factors determining articulation (condylar guide, incisal guide) 1 class			