Attachment No. 3		Course program of the first cycle of studies				
1.	Course title	Dental materials 2				
2.	Code	DMMDM3				
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 Dentistry – Skopje, Department of Pediatric and Preventive dentistry and Department of Endodontics and Restorative dentistry)				
5.	Degree (first, second, third cycle)	Integrated First and Second Cycle Studies				
6.	Academic year/semester	Year	3	Semester	5	
7	Course workload expressed in ECTS credits	3				
8.	Teacher	Teacher in charge: Prof. Dr. Elizabeta Gjorgievska Teachers from the Department of Pediatric and Preventive dentistry and the Department of Endodontics and Restorative dentistry).				
9.	Language in which the curriculum is conducted	English				
10.	Necessary prerequisites for taking and passing the course	Completed all compulsory subjects from the second year and passed all compulsory subjects from the first year				
11.	Course objectives (competences) and learning outcomes:	Broader knowledge of the physical and chemical characteristics of dental materials used in restorative dentistry and endodontics; classification; indications, contraindications, and proper use; standardization and biocompatibility of these materials, as well as procedures for working with the same.				
12.	Detailed course	Theoretical teaching - lectures (30 classes)				

	content by chapters and units, with learning outcomes for each chapter	Chapter 1. Restorative materials - basics and biocompatibility - Classification of materials used in dental restoration.....2 classes - Materials for temporary and definitive restoration: history, composition, indications for use, testing and standardization of restorative materials, physical and chemical characteristics..... 2 classes - Biocompatibility and bioactivity of restorative materials.....2 classes Learning outcomes from Chapter 1: Students learn about the basic principles of dental materials, their classification, and their characteristics. They are introduced to the concepts of biocompatibility and bioactivity, as well as methods for testing and standardization of restorative materials. This will enable them to make an appropriate choice of materials in clinical practice, considering the biological effects on oral tissues. Chapter 2. Modern Restorative Materials - Composites: composition, properties, classification, indications.4classes - Adhesives, classification, properties, indications.....2 classes - Glass ionomer cements.....2 classes - Hybrid materials: resin-modified glass ionomer cements, compomers and giomers.....2 classes - Dentin wound protectors.....2 classes - Remineralizing agents.....2 classes - Calcium silicate cements.....2 classes Learning Results from chapter 2: Students gain detailed knowledge of modern restorative materials, including composite resins, adhesive systems, glass ionomer cements, and hybrid materials. They become familiar with their physical, chemical, and biological characteristics, as well as their indications and contraindications. Students develop an understanding of the uses of various dentin wound protection and remineralizing agents. Through the study of calcium silicate cements, they become familiar with the most modern bioactive materials in endodontics. Chapter 3. Endodontic Materials and Bleaching Agents - Intracanal medications.....2 classes - Modern materials for definitive root canal obturation.....2 classes - Materials used in endodontics of primary teeth.....2 classes - Bleaching agents for vital and non-vital teeth.....2 classes Learning Results from chapter 3: Students study intracanal medications and modern materials used for definitive root canal obturation. They become familiar with the specifics of endodontic materials used in primary dentition. Additionally, students explore the various bleaching agents for vital and non-vital teeth, their mechanisms of action, indications, and contraindications, which will enable them to apply them appropriately in aesthetic dentistry.		
13	Interrelation of subjects	The course is related to the course Dental Materials 1 and to clinical courses in the field of restorative dentistry and endodontics.		
14.	Detailed description of the teaching and working methods for the subject	Interactive teaching, seminars, presentations, demonstrations, teamwork.		
15.	Total available time	90 classes		
16.	Forms of teaching activities	16.1.	Lectures - theoretical teaching. classes	30 classes
		16.2.	Exercises (laboratory, lecture), seminars, teamwork: classes	
		16.3.	Practice: classes	
17.	Other forms of activities	17.1.	Project assignments: classes	30 classes
		17.2.	Independent assignments:	

			classes		
		17.3.	Home study - assignments	30 classes	
18	Signature requirements	Attendance at least 80% of lectures and seminars. In order to take the exam, the student must have a signature for the subject.			
19	Method of assessment				
	19.1.	Tests: points		50	
	19.2.	Seminar paper/project, written and oral presentation: points		50	
	19.3.	Final exam: points			
20	Grading criteria (points/grade)		from 59 points	5 (five) (F)	
			60 to 68 points	6 (six) (E)	
			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 students' success, as well as the pass rate of students who have passed the course		
22.	Literature				
	22.1.	Required literature			
		Ord. No.	Author	Title	Publisher	Year
		1.	Anusavice et al.	Phillips' Science of Dental Materials	Saunders	2012
		2.	Nicholson JW, Czarnecka B	Materials for Direct Restoration of Teeth	Woodhead Publishing	2016
	22.2.	Additional literature				
		Ord. No.	Author	Title	Publisher	Year
		1.	Marija Stevanovikj, Mira Jankulovska, John Nicholson, Elizabeta Gjorgievska (editor), Ana Sotirovska – Ivkovska, Zlatko Georgiev, Dejan Markovikj, Aleksandar Dimkov, Meri Pavlevska, Alberto Benedetti, Dragana Gabrikj, Marko Vuletikj, Bernard Jankovikj, Efka Zhabokova-Bilbilova, Tamara Perikj, Bojan Petrovikj, Vesna Ambarkova, Olga Kokocheva-Ivanovska, Jasna Simonoska	Pediatric dentistry	Ars Lamina	2022
		2.	Gjorgievska E.	Bioactive Restorative Systems	-	2009

		3.	Gjorgievska E.	Fluoro-resorbable Dental Restorative Materials	Faculty of Dentistry, Skopje	2004
		4.	Dimkov A.	Incorporation of Antimicrobial Substances into Glass Ionomer Cements	Lambert Academic Publishing	2013