Attachment No. 3		Course program for the first cycle of studies			
1.	Course title	Computerized dentistry			
2.	Code	DMECD6			
3.	Study program	Dentistry - integrated first and second cycle of studies			
4.	Organizer of the study program (unit, i.e., institute, department, division)	UKIM - Faculty of Dentistry, Department of Implantology and Department of Oral Surgery			
5.	Degree (first, second, third cycle)	Integrated First and Second Cycle Studies			
6.	Academic year/semester	Year	6	semester	11
7	Course workload expressed in ECTS credits	2			
8.	Teacher (in case of multiple teachers, designated teacher in charge)	Prof. Dr. Janev Edvard (Teacher in charge), Prof. Dr. Oliver Dimitrovski			
9.	Language in which the curriculum is conducted	English			
10.	Necessary prerequisites for taking and passing the course	No			
11.	Course objectives (competences) and learning outcomes:	Digital dentistry allows students to learn about establishing a diagnosis, planning therapy, and how to move through the phases of treatment faster, more efficiently, more easily, and more accurately. The development of computer-based technologies, including virtual simulation, computer-aided design, and fabrication, creates a need for continuous education and practice. The aim of this course is to introduce you to the most modern diagnostic methods, such as computed tomography, magnetic resonance imaging, three-dimensional visualization, and digital scanning (CT, CBCT, MRI, 3D, DigitalScan).			
12.	Detailed course content by chapters and units, with learning outcomes for each chapter	Theoretical teaching - lectures Modern dentistry, development and application of Computerized dentistry in clinical practice...1 class Types of CT scanners: CT and CBCT. Advantages and disadvantages of CBCT, advantages and disadvantages of CT..... 1 class Precision, variations and deviations of CT and CBCT measurements in clinical dental practice……1 class			

		Effective dose and radiation when using CT and CBCT for different types of diagnostic measurements and needs…….. 1 class Indications for specific application of CT and CBCT in clinical dental practice……1 class Computer-based technologies in dentristy (MRI, VR, AR, CAD-CAM, 3D, Digital scanning……. 1 class Application and advantages in the application of computer technologies by specialties in all branches of dentistry (Prosthodontics, Maxillofacial surgery, Orthodontics, Periodontology, Restorative dentistry)……1 class Implantology - 3D planning, 3D navigation, virtual placement of dental implants……1 class Computer-guided implantology, advantages and disadvantages…1 class Digital scanning, preparation of surgical templates, CAD-CAM prosthodontic fabrications …….1 class Fabrication of definitive and temporary prosthodontic restorations in just one visit, a reality in modern dentistry……. 1 class Fabrication of a complete prosthodontic restoration using CAD-CAM technology…… 1 class Implementation of Digital dentistry as a clearly defined standard in everyday clinical practice……1 class Identification of the benefits for clinicians and patients from the application of modern techniques in Digital dentistry……1 class Outcomes: Students will acquire elementary knowledge of the software system of 3D radiological examinations (made using CT and CBCT), in terms of diagnostics and planning of therapeutic directions in the domain of oral surgery and implantology. Visualization and review of panoramic, sagittal, axial, and transversal sections of three-dimensional images. Precise determination of the dimensions of the residual alveolar ridge intended for implantation, mapping of vital anatomical-morphological structures in both jaws, along with virtual placement of dental implants. Total: .....15 classes Practical teaching - exercises - From the first chapter ..... 9..... classes - From the second chapter .....6..... classes Total .....15 classes		
13	Interrelation of subjects	Interrelation with implantology, oral surgery, periodontology		
14.	Detailed description of the teaching and working methods for the subject	Interactive instruction, laboratory or clinical exercises, working in small groups, presentation and performance of laboratory procedures, demonstration of instruments and methods used, teamwork		
15.	Total available time	60 classes		
16.	Forms of teaching activities	16.1.	Lectures - theoretical teaching classes	15 classes
		16.2.	Exercises (laboratory, auditorium), seminars, teamwork: classes	15 classes
		16.3.	Practice: classes	
17.	Other forms of activities	17.1.	Project assignments: classes	
		17.2.	Independent assignments: classes	
		17.3.	Home study - assignments	30 classes
18	Signature requirements			
19	Grading method			
	19.1.	Tests: points		30 points
	19.2.	Seminar paper/project, written and oral presentation: points		10 points
	19.3.	Final exam: points		60 points
20	Grading 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 instruction		Self-evaluation by students, control by assistants in carrying out practical instruction 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.	R.Masri, C. Driscoll	Clinical Applications of Digital Dental Technology	Wiley Blackwell	2015
		2.	Dianne Rekow	Digital dentistry	Quintessence Pub Co; 1 edition	2018
		3.	Mirela Feraru	Dental Visualisation	Quintessence Pub Co; 1 dition	2018
	22.2.	Additional literature				
		Ord. No.	Author	Title	Publisher	Year
		1.	Osama Sardar	Digital dentistry	Antigoni Delantoni	2025