Attachment No. 3		Course program for the first cycle of studies			
1.	Course title	Dental implantology			
2.	Code	DMMDI6			
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, Department of Prosthodontic Dentistry, and Department of Oral and Periodontal Diseases			
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	5			
8.	Teacher (in case of multiple teachers, designated teacher in charge)	Prof. Dr. Marija Peeva Petreska - Teacher in charge *Teaching is conducted by teachers from the stated Departments			
9.	Language in which the curriculum is conducted	English			
10.	Necessary prerequisites for taking and passing the course	Completed all compulsory subjects from the fifth year and passed all compulsory subjects from the fourth year.			
11.	Course objectives (competences) and learning outcomes:	Objectives of the course program (competences): Through the curriculum of the course Dental Implantology, students will be introduced to the basic principles in the field of clinical, radiological, and computer analysis for planning therapy with dental implants; Selection of a patient for general implantation, indications, contraindications and risk factors; Introduction to implantation methods; performance of the surgical phase for placement of dental implants, fabrication of the superstructure and maintenance of healthy peri-implant tissue, as well as possible complications in all phases of implant treatment.			
12.	Detailed course content by chapters	Theoretical teaching - lectures Chapter 1 - Surgical phases of implant therapy			

	and units, with learning outcomes for each chapter	- History and development of dental implantology 1 class - Macroscopic and microscopic aspects of dental implants, surface and design, division according to characteristics - 1 class - Indications for placement of dental implants - 1 class - Risk factors and contraindications of a general and local nature for implant therapy - 1 class - Reaction and healing of tissue around the implant - osseointegration and factors affecting osseointegration - 1 class - Quantitative and qualitative analysis of residual alveolar ridges - classifications - 1 class - Anatomo-morphological characteristics of the jawbones and adjacent anatomical structures - 1 class - Implant therapy plan - radiological and clinical analysis - 1 class - 3D computer analysis of alveolar ridges and implant positioning - 1 class - Materials and methods for local augmentation of deficient alveolar ridges 2 - Surgical phase for placement of endosseous implants - 1 class - Sinus lift - methods and indications - 1 class - Intraoperative and postoperative complications of implant therapy - 2 classes Outcomes from chapter 1 The students will be able to carry out anamnestic and basic diagnostic methods for evaluation and selection of patients from the aspect of planning for dental implant placement (analysis of edentulous spaces, measurement of width and length of the alveolar ridge and soft tissue complex, clinical and X-ray analysis).; then they will learn about the morphological characteristics of the jaw bones and the alveolar ridge in a quantitative and qualitative direction; They will also be introduced to the methods and materials for local augmentation of the alveolar ridge in conditions of deficient alveolar bone; They will learn about the surgical procedures for placement of immediate and mediate implants; They will also learn about all possible intraoperative and postoperative complications during and after the surgical phase of dental implant placement, as well as their resolution, i.e. the therapy associated with them. Individualized therapy, taking into account the various risk factors of patients of a general and local nature, is key to the long-term success of dental implants, starting from planning to surgical placement of dental implants. Chapter – Suprastructures over dental implants Prosthodontic aspects in dental implantology-biomechanics of suprastructures on dental implants ..... 1 class Term, division, and selection of abutments; healing caps..... 1 class Implant-borne suprastructures – division and characteristics 2 classes Metal ceramic suprastructures over implants ..... 1 class CAD/CAM procedures in the manufacture of suprastructures; surgical guides for implantation, prosthodontic guides; individual abutments……1 class Techniques and materials for impression in implant prosthodontics 1 class Concept of mini-implants, ... 1 class Concept of all-on-4, all-on-6 …….. 1 class Outcomes from chapter 2: The students will be introduced to the different types of abutments as a superstructure for dental implants. The students will study the various prosthodontic superstructures over dental implants, impression taking techniques, laboratory procedures for the fabrication of superstructures, and the method of their fixation. They will also be introduced to the specific concepts in planning oral rehabilitation with mini-implants as well as the all-on-4, all-on-6 concepts. Chapter 3 – Inflammatory destructive changes of peri-implant tissues – diagnosis and therapy Anatomo-histological characteristics of peri-implant tissues Microbiology of peri-implant biofilm Risk factors and etiopathogenesis of peri-implant diseases 1 Classification of peri-implant diseases and conditions Diagnostic approach in implantology 1 class Peri-implant mucositis: clinical image, diagnosis, and therapy Peri-implantitis: clinical image, diagnosis, and therapy 1 class Non-surgical treatment of peri-implant diseases Surgical treatment of peri-implant diseases 2 classes Modern adjuvant therapies (application of lasers, photodynamic therapy, probiotics,

		nanomaterials, bioengineering) Strategies for maintenance and long-term success of implants 1 class Outcomes from chapter 3 The students will acquire recognition of the differences between peri-implant and periodontal tissues, to be able to define the microbiome of the peri-implant biofilm and the mechanism of its formation. Knowledge of risk factors and their effect on etiopathogenetic events in peri-implant diseases is necessary to be able to classify peri-implant diseases and conditions. The specifics of diagnostic procedures, as well as the differential diagnostic distinction of peri-implant mucositis and peri-implantitis, and their therapeutic approaches, close the outcomes of this chapter. The students will learn about the principles and performance of non-surgical mechanical therapy and the pharmacological agents that are applied (antibiotic therapy - systemic and antiseptics, anti-inflammatory agents, and adjuvant therapies - probiotics, photodynamic therapy, nanomaterials). Surgical approaches include resective and regenerative techniques for the elimination of infected tissues and stimulation of bone regeneration. The students will be able to define the indicated areas for the application of lasers used for decontamination of implant surfaces and for stimulation of the regeneration of peri-implant tissues. The necessity of regular controls, professional cleaning, and motivation and education for oral hygiene in each patient is emphasized. Students gain a basis for managing post-implant complications - prevention and care of peri-implant mucositis and peri-implantitis, their classification, and treatment options. Broader knowledge about the maintenance of peri-implant tissue and the prevention of post-implant complications. Total 30 classes Practical teaching - exercises - From the first chapter - Surgical phases of implant therapy 15 classes - From the second chapter - Suprastructures over dental implants 10 classes - From the third chapter, Peri-implant disease and therapy, 5 classes. Total 30 classes Seminars - From the first chapter - Surgical phases of implant therapy 5 classes. - From the second chapter - Suprastructures over dental implants 5 classes - From the third chapter - Peri-implant disease and therapy 5 classes. Total .....15 classes		
13	Interrelation of subjects	Oral surgery, Clinical removable prosthodontics, and Clinical fixed prosthodontics, Oral and periodontal diseases		
14.	Detailed description of the teaching and working methods for the subject	Interactive instruction, exercises, working in small groups, presentation and performance of laboratory procedures, demonstration of instruments and methods used, teamwork		
15.	Total available time	150 classes		
16.	Forms of teaching activities	16.1.	Lectures - theoretical teaching classes	30 classes
		16.2.	Exercises (laboratory, auditorium), seminars, teamwork: classes	Exercises – 45 classes
		16.3.	Practice: classes	
17.	Other forms of activities	17.1.	Project assignments: classes	
		17.2.	Independent assignments: classes	25 classes
		17.3.	Home study - assignments	50 classes
18	Signature requirements			
19	Grading method			
	19.1.	Tests: 2 colloquiums, 20 points each		40 points
	19.2.	Seminar work/project, written and oral presentation:		10 points
	19.3.	Final exam:		50 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.	Milan Jurišić, Dragoslav Stamenković, Aleksa Marković, Aleksandar Todorović, Božidar Dimitrijević, Vojislav Leković, Vitomir	Oral Implantology	Stomatoloski fakultet Beograd	2008
		2.	Jovan V. Perović	Oral Implantology	Agencija za marketing i zeppelin reklame DON VAS	2004
		3.	Carl E Misch	Dental implant prosthodontics 2 edition	Elsevier Mosby	2015
	22.2. Additional literature				
		Ord. No.	Author	Title	Publisher	Year
		1.	Herbert T Shillinburg,Jr	Fundaments of fixed prosthodontics 4th edition	Quintenssence Publishing Co	2012