

1	Subject	CLINICAL ENDODONTICS			
2	Code	DKE502			
3	Study Program	Study Program of Integrated studies in dental medicine			
4	Organizing Institution (Unit, Institute, Chair, Department)	Department of Dental Pathology and Endodontics			
5	Educational degree (first or second cycle)	Integrated study			
6	Study year/semester	5 / 9 and 10	7	Number of credits	9
8	Teacher	Prof. D-r Sonja Apostolska Prof. D-r Lidija Popovska, Prof. D-r Vasilka Rendzova, Prof. D-r Ilijana Muratovska, Doc. D-r Marina Eftimoska			
9	Preconditions	Passed all compulsory courses of 5 and 6 semester. Signatures of 7 and 8 semester courses			
10	Teaching goals: Acquiring the necessary knowledge and skills for independently setting the diagnosis and conducting endodontic therapy of teeth with pulp disease and apical periodontitis, for biological therapeutic possibilities, knowledge of indications and application of intersession medicines and their effects and deficiencies as well as the application of materials and methods for definitive obturation of the root canals of the teeth. Acquiring knowledge for recognizing mistakes and complications during endodontic therapy as well as indications of a endodontic retreatment, knowledge, and application of different systems for channel retention for restoration of endodontic treating teeth, recognizing fractures of the root of the tooth and therapeutic possibilities depending of the location of the fracture and the pathophysiological state of the pulp and periodontium, knowledge of urgent therapeutic procedures and knowledge of the etiological factors of discoloration of the tooth crown , methods and techniques for bleaching endodontic treated teeth				
11	Brief content				
	Theoretical course				Class
	Anatomical, histological and functional features of the pulpo-periodontal complex.				1
	Asepsis and antiseptic in endodontics, cleaning and sterilization of instruments, dry and aseptic field of work, cleaning and hygiene of appliances and workplace				1
	Pain in the oral cavity. Diagnostic in endodontics				1
	Deep caries, clinical feature, diagnosis, therapy				1
	Clinical aspects of endodontic therapy, indications and contraindications (trepanation, instrumentation, irrigans, odontometry)				1
	Regressive metamorphoses of pulp, denticles, cementicles.				1
	Dental pulp disease: etiology, pathogenesis, classifications., Pulp hyperemia				1
	Acute pulpitis (etiology, clinical feature, diagnosis). Chronic pulpitis (etiology, clinical feature, diagnosis. therapy).				1
	Treatment of teeth with a vital pulp (vital and mortal method)				1
	Necrosis, necrobiosis, gangrene of the tooth pulp (etiology, clinical picture, therapy).				1
	Periodontium (anatomical, histological and physiological characteristics from the aspect of the subject).				1
	Periodontitis apicalis acuta (etiology, clinical picture, pathohistology).				1
	Periodontitis chronica (etiology, clinical picture, pathohistology)				1
	Marginal and lateral periodontitis (etiology, clinical picture, diagnosis)				1
	X-ray diagnostics in endodontic therapy.				1
	Colloquium 1				
	Endodontic therapy of acute periodontitis				1
	Endodontic therapy of chronic periodontitis				1
	Root preparation and root canal spreading (machine systems)				1
	Materials for temporary filling of root canals types and actions, application of antibiotics, corticosteroids, antiseptics, MTA, biodentin				1
	Contemporary obturation methods				1
	Emergency endodontic treatment				1
	Endodontic aspects of internal and external resorption of the toothbrush				1
	Endodontic aspects of treatment of root fracture				1
	Errors and complications during endodontic therapy				1

Alternative methods for unsuccessful endodontic therapy (retreatment, endodontic surgery).	1	
Reparation of the apical parodontium	1	
New technologies and technical achievements in endodontics: operating microscope, apparatus, instruments, machine tools	1	
Whitening of avid and endodontically treated teeth	1	
Endodontic therapy in particular systemic diseases	1	
Specificity of anesthesia and analgesia in endodontics		1
Biophysical principles of restoration of endodontically treated teeth		1
Colloquium 2		
Total		30
Practical lessons:		Class
Introduction to the clinical procedure - preparing of the endodontic work place for the endodontic treatment, history, way of diagnosis, indications for work and outcome of the therapy, dry work place(demonstration of cofferdam application)	5	
Medical documentation in endodontics		4
Diagnostic procedures in acute pulp diseases (diagnosis and differential diagnosis - clinical feature, history of clinical examination, indications and type of therapy).	5	
Diagnostic procedures in chronic pulp diseases (diagnosis and differential diagnosis - clinical feature, history of clinical examination, indications and type of therapy).	5	
Odontometric methods.		4
X-ray diagnostics in endodontic therapy.		4
Therapeutic procedures in necrosis and necrobiosis.		5
Therapeutic procedures in gangrenous decay.		5
Diagnostic procedures in acute periodontitis (diagnosis and differential diagnosis - clinical picture, history of clinical examination, indications and type of therapy).	5	
Diagnostic procedures in chronic periodontitis (diagnosis and differential diagnosis - clinical picture, history of clinical examination, indications and type of therapy).	5	
Endodontic intervention - principles and procedures with irrigants and medicines		5
Obturation of the channel system, conditions, objective of the opturation		4
Obturation of the channel system - materials and techniques		5
X-ray control of complete endodontic therapy in pulpitis and periodontitis		4
Urgent endodontic therapy procedures.		5
Types of anesthesia in endodontic therapy, alternatives.		4
Errors and complications during endodontic therapy		4
Alternative methods following unsuccessful endodontic therapy, (retreatment, endodontic surgery).		4
Therapeutic modalities in chronic periodontitis, endodontic surgery-indications, methods.		3
Procedures for bleaching of non-vital teeth and endodontically treated teeth		4
Restoration of endodontically treated teeth -indications and application of composite and fiberglass reinforced channel pegs	4	
Endodontic therapy in injuries and dental trauma		4
Team preparation and remediation of the patient for prosthetic		4
Endodontic therapy in certain general diseases		4
Total		105
Seminars		Class

12	Methods of studying: class room oriented lectures, interactive lectures, group work, practical training, seminar paper					
13	Total available time	270 classes				
14	Organization of the course	30 classes - theoretical course, 105 classes- practical course, 135 classes - home individual learning and other activities				
15	Forms of teaching activities	15.1.	Theoretical course		30 classes	
		15.2.	Practical course, seminars		Practical course - 105 classes	
16	Other forms of activities	16.1.	Project tasks			
		16.2.	Individual tasks			
		16.3.	Individual (home) learning		135 classes	
17	Method of assessment	17.1.	Tests		points	
		17.2.	Active participation, seminar paper/project (oral/written presentation)		points	
		17.3.	Final (oral) exam		points	
18	Grading criteria (points / grade)	Up to 59 points			5 (five) (F)	
		from 60 to 67 points			6 (six) (E)	
		from 68 to 75 points			7 (seven) (D)	
		from 76 to 84 points			8 (eight) (C)	
		from 85 to 93 points			9 (nine) (B)	
		from 94 to 100 points			10 (ten) (A)	
19	Requirement for signature and taking the final exam	<p>The student is required to actively follow all of the planned activities.</p> <p>Conditional criteria for assessment of knowledge:</p> <p>In order to get a signature, the student should obtain minimum points in both theoretical and practical courses, and to present seminar paper;</p> <p>In order to take the final exam, the student should obtain the minimum points from activity and test;</p> <p>If the student has not obtained the minimum points in the continual assessments, he/she in next exam session will have paper part of the exam (70 points) and final exam (30 points)</p>				
20	Language of the course	English				
21	Method for evaluation of the quality of education	Anonymous student's evaluation of the subject, teachers and collaborators involved in the educational activities				
22	Literature					
	22.1.	Mandatory textbooks				
		No.	Author	Title	Publisher	Year
		1	Leif Tronstad	Clinical Endodontics	Thieme,	2003
		2	Bun San Chon	Harty's Endodontics in Clinical Practice, 7th Edition	Churchill Livingstone	2016
22.2.	Additional literature					

		No.	Author	Title	Publisher	Year
		1	Sonja Apostolska, Vasilka Rendzova	Endodontics	Maring, Skopje	2014