Study programme: DENTAL MEDICINE

Code	FIRST YEAR - FIRST SEMESTER			
	COURSE	CREDITS	HOURS	OVERALL WORKLOAD
3MF100212	Anatomy 1	7	3+3+1	210
3MF134012	Chemistry	5	2+2+1	150
3MF104112	Introduction to human genetics	5	2+2+1	150
3MF121312	Dental materials	4	2+1+2	120
3MF129212	Biophysics	5	2+2+1	150
UGD100112 UGD100212 UGD100312 UGD100412 UGD100512 UGD100612	Foreign language 1 – English Foreign language 1 – Italian Foreign language 1 – German Foreign language 1 – French Foreign language 1 – Spanish Foreign language 1 – Russian	4	0+0+4	120
UGD102712	Sports and recreation*	0	0+0+2	0

Code	FIRST YEAR - SECOND SEMESTER			
	COURSE	CREDITS	HOURS	OVERALL WORKLOAD
3MF100312	Anatomy 2	7	3+3+1	210
3MF103912	General and oral histology and embryology	4	2+2+2	120
3MF154112	Anatomy of jaws and dental morphology	4	2+3+1	120
3MF103512	Physiology 1	6	3+2+1	180
3MF102112	Introduction to biochemistry	5	3+1+1	150
3MF120012	Computer science	4	2+1+1	120

Code	SECOND YEAR - FIRST SEMESTER			
	COURSE	CREDITS	HOURS	OVERALL WORKLOAD
3MF103612	Physiology 2	8	4+3+1	240
3MF101312	Microbiology and parasitology	5	2+2+1	150

3MF112712	**Pharmacology**	**4**	**2+1+2**	**120**
3MF149012	**Preclinical mobile prosthodontics (complete denture)**	**5**	**2+3+1**	**150**
3MF120512	**Epidemiology and public health**	**4**	**2+1+1**	**120**
3MF154212	**Oral health**	**2**	**1+1+1**	**60**
	Elective course from List No. 1	**2**	**1+1+1**	**60**

Code	**SECOND YEAR - SECOND SEMESTER**			
	COURSE	**CREDITS**	**HOURS**	**OVERALL WORKLOAD**
3MF103012	**Pathophysiology**	**6**	**3+2+1**	**180**
3MF102512	**Pathology**	**7**	**3+3+1**	**210**
3MF160012	**Preclinical cariology**	**6**	**2+3+1**	**180**
3MF149112	**Preclinical mobile prosthodontics (partial denture)**	**5**	**2+2+1**	**150**
3MF154412	**Prophylaxis of oral diseases**	**4**	**2+1+1**	**120**
	Elective course from List No. 2	**2**	**1+1+1**	**60**
	• Obligatory summer practice in a dental laboratory for a period of 10 working days (the student's practice will be count for 6 Hours per day/10x 6 = 60 hours). • Prerequisite for enrolment in third year-first semester			

Code	**THIRD YEAR - FIRST SEMESTER**			
	COURSE	**CREDITS**	**HOURS**	**OVERALL WORKLOAD**
3MF149412	**Preclinical fixed prosthodontics 1**	**4**	**1+3+1**	**120**
3MF160312	**Preclinical endodontics**	**4**	**1+3+1**	**120**
3MF149912	**Gnatology**	**5**	**2+2+1**	**150**
3MF106612	**Internal medicine**	**6**	**3+2+1**	**180**
3MF110312	**Introduction to infectious diseases**	**3**	**2+1+1**	**90**
3MF106312	**Dermatovenereology**	**3**	**2+1+1**	**90**
3MF108912	**Neurology and psychiatry**	**3**	**2+1+1**	**90**
	Elective course from List No. 3	**2**	**1+1+1**	**60**

Code	THIRD YEAR - SECOND SEMESTER			
	COURSE	CREDITS	HOURS	OVERALL WORKLOAD
3MF103212	General surgery	5	2+2+1	150
3MF102912	Dental roentgenology	4	2+1+2	120
3MF113112	Preclinical fixed prosthodontics 2	4	1+3+1	120
3MF108212	Clinical cariology 1	4	1+3+1	120
3MF120412	Preventive dentistry	3	2+1+2	90
3MF116912	Otorhinolaryngology	3	2+1+1	60
3MF150012	Introduction to dentofacial orthopedics	4	2+1+2	120
	Elective course from List No. 4	3	2+1+1	90
	• Obligatory summer practice in a dental office for a period of 15 working days (the student's practice will be count for 6 Hours per day/10x 6 = 60 hours). • Prerequisite for enrolment of fourth year-first semester			

Code	FOURTH YEAR - FIRST SEMESTER			
	COURSE	CREDITS	HOURS	OVERALL WORKLOAD
3MF149212	Clinical mobile prosthodontics (complete denture)	6	2+5+1	180
3MF160212	Clinical cariology 2	6	2+5+1	180
3MF160712	Oral medicine and pathology 1	5	2+2+1	150
3MF154512	Preclinical oral surgery	6	3+3+1	180
3MF150112	Dentofacial orthopedics 1	5	2+2+1	150
	Elective course from List No. 5	2	2+0+1	60

Code	FOURTH YEAR - SECOND SEMESTER			
	COURSE	CREDITS	HOURS	OVERALL WORKLOAD
3MF160912	Preclinical periodontology	3	2+1+1	90
3MF160412	Clinical endodontics 1	4	1+4+1	120
3MF160812	Oral medicine and pathology 2	5	2+2+1	150
3MF154612	Oral surgery 1	5	2+3+1	150

3MF150212	**Dentofacial orthopedics 2**	**5**	**2+2+1**	**150**
3MF149312	**Clinical mobile prosthodontics (partial denture)**	**5**	**2+4+1**	**150**
	Elective course from List No. 6	**3**	**2+1+1**	**90**
	• Obligatory summer practice in a dental office for a period of 10 working days. (student's practice will be count 6 Hours per day/10x 6 = 60 hours). • Prerequisite for enrolment in fifth year-first semester			

Code	**FIFTH YEAR - FIRST SEMESTAR**			
	COURSE	**CREDITS**	**HOURS**	**OVERALL WORKLOAD**
3MF161012	**Parodontology 1**	**5**	**2+2+1**	**150**
3MF161312	**Pediatric dentistry 1**	**5**	**2+2+1**	**150**
3MF160612	**Clinical endodontics 2**	**5**	**2+2+1**	**150**
3MF155112	**Maxillofacial surgery 1**	**4**	**2+1+1**	**120**
3MF149612	**Clinical fixed prosthodontics 1**	**5**	**1+4+1**	**150**
3MF154812	**Oral surgery 2**	**4**	**1+2+1**	**120**
	Elective course from List No. 7	**2**	**1+1+1**	**60**

Code	**FIFTH YEAR - SECOND SEMESTER**			
	COURSE	**CREDITS**	**HOURS**	**OVERALL WORKLOAD**
3MF161112	**Parodontology 2**	**3**	**2+2+1**	**90**
3MF161412	**Pediatric dentistry 2**	**3**	**2+3+1**	**90**
3MF155212	**Maxillofacial surgery 2**	**3**	**2+2+1**	**90**
3MF154912	**Dental implantology**	**3**	**2+1+1**	**90**
3MF155412	**Laser therapy in dentistry**	**2**	**1+1+1**	**60**
3MF149712	**Clinical fixed prosthodontics 2**	**4**	**1+4+1**	**120**
	Bachelor thesis	**10**	**/**	**300**
	Elective course from List No. 8	**2**	**2+1+1**	**60**

LIST OF ELECTIVE COURSES FROM No. 1-8

Code	SECOND YEAR - FIRST SEMESTER (Elective course from List No. 1) *The student must choose one course*			
	COURSE	CREDITS	HOURS	OVERALL WORKLOAD
	Radiology	2	1+1+1	60
3MF149812	Oral biochemistry	2	1+1+1	60
3MF121312	Communication skills	2	1+1+1	60
3MF120012	Biostatistics and computer science	2	1+1+1	60

Code	SECOND YEAR – SECOND SEMESTER (Elective course from List No. 2) *The student must choose one course*			
	COURSE	CREDITS	HOURS	OVERALL WORKLOAD
3MF122912	Social medicine	2	2+0+1	60
3MF103312	Medical psychology	2	1+1+1	60
3MF122112	Introduction to scientific research	2	2+0+1	60
3MF120912	Health ecology and hygiene	2	1+1+1	60

Code	THIRD YEAR - FIRST SEMESTER (Elective course from List No. 3) *The student must choose one course*			
	COURSE	CREDITS	HOURS	OVERALL WORKLOAD
3MF161612	Ergonomics	2	1+1+1	60
3MF161712	Oral hygiene	2	1+1+1	60
3MF123112	Sociology of health and illness	2	1+1+1	60

Code	THIRD YEAR - SECOND SEMESTER (Elective course from List No. 4) *The student must choose one course*			
	COURSE	CREDITS	HOURS	OVERALL WORKLOAD
3MF115412	Anesthesiology	3	2+1+1	90
3MF160512	Community dentistry	3	2+1+1	90

3MF121712	**Medical ethics**	**3**	**2+1+1**	**90**
3MF111112	**First medical aid**	**3**	**2+1+1**	**90**

Code	**FOURTH YEAR - FIRST SEMESTER (Elective course from List No. 5)** *The student must choose one course*			
	COURSE	**CREDITS**	**HOURS**	**OVERALL WORKLOAD**
3MF110712	**Pediatrics - selected topics**	**2**	**2+0+1**	**60**
3MF130412	**Introduction to ophthalmology**	**2**	**2+0+1**	**60**

Code	**FOURTH YEAR - SECOND SEMESTER (Elective course from List No. 6)** *The student must choose one course*			
	COURSE	**CREDITS**	**HOURS**	**OVERALL WORKLOAD**
3MF150312	**Aesthetic dentistry**	**3**	**2+1+1**	**90**
3MF155512	**Management in dentistry**	**3**	**2+1+1**	**90**
3MF155012	**Emergency situations in dentistry**	**3**	**2+1+1**	**90**

Code	**FIFTH YEAR - FIRST SEMESTER (Elective course from List No. 7)** *The student must choose one course*			
	COURSE	**CREDITS**	**HOURS**	**OVERALL WORKLOAD**
3MF121612	**Occupational medicine**	**2**	**1+1+1**	**60**
3MF154712	**Patients at risk for dental interventions**	**2**	**1+1+1**	**60**

Code	**FIFTH YEAR - SECOND SEMESTER (Elective course from List No. 8)** *The student must choose one course*			
	COURSE	**CREDITS**	**HOURS**	**OVERALL WORKLOAD**
3MF155312	**Forensic dentistry**	**2**	**2+1+1**	**60**
3MF161512	**Dental traumatology**	**2**	**2+1+1**	**60**
3MF161812	**Focal infections**	**2**	**2+1+1**	**60**

FIRST YEAR – FIRST SEMESTER

<table>
<tr><th colspan="6">Course description - first, second and third cycle of study</th></tr>
<tr><td>1.</td><td>Course title</td><td colspan="4">Anatomy 1</td></tr>
<tr><td>2.</td><td>Code</td><td colspan="4">3MF100212</td></tr>
<tr><td>3.</td><td>Programme of study</td><td colspan="4">Dental Medicine</td></tr>
<tr><td>4.</td><td>Organizer of the study programme (unit/ institute, department)</td><td colspan="4">University Goce Delcev
Faculty of Medical Sciences</td></tr>
<tr><td>5.</td><td>Level of study (first, second, third cycle)</td><td colspan="4">Integrated studies of first and second cycle</td></tr>
<tr><td>6.</td><td>Academic year / semester</td><td>First / First semester</td><td>7.</td><td>Number of ECTS credits</td><td>7</td></tr>
<tr><td>8.</td><td>Instructor</td><td colspan="4">Assoc. Prof. Svetlana Jovevska,</td></tr>
<tr><td>9.</td><td>Course prerequisites</td><td colspan="4">enrolled first semester</td></tr>
<tr><td>10.</td><td colspan="5">Course objectives
Introduction to anatomy as morphological science, mastering of professional terminology, complete study of the locomotor system.</td></tr>
<tr><td>11.</td><td colspan="5">Course content
<u>Theoretical instruction</u>
1. Introduction to anatomy and osteology, types of bones, bone components, specialized terminology.
2.Bones of the immovable and movable parts of the upper extremities
3.Bones of the immovable and movable parts of the lower extremities
4.Bones of the chest and the trunk
5.Introduction to syndesmology, joints, components of joints, types of joints
6.Syndesmology of the upper extremities
7.Syndesmology of the trunk and the lower extremities
8.Bones of the head (skull and face)
9. Joints of the head (skull and face), the trunk and the vertebral column
10.Introduction to myology, angiology, neurology
11.Myology, angiology and neurology of the upper extremities
12.Myology, angiology and neurology of the lower extremities

<u>Practical instruction</u>
1.Orientation of bones: the clavicle, the scapula, the humerus, the forearm bones (the radius and the ulna)
2.Hand skeleton: carpals, metacarpals and phalanges; the chest and the vertebral column
3.Skeleton of the pelvic girdle - coxae, sacrum and coccyx
4.Skeleton of the femur, the tibia, the fibula and the patella
5.Foot skeleton –tarsals, metatarsals and phalanges
6.Joints of the upper extremities, the chest and the vertebral column
7.Joints of the lower extremities
8.Bones of the head (skull and face)
9.Joints of the head (skull and face)
10.Muscles and blood vessels of the upper extremities
11.Muscles and blood vessels of the lower extremities</td></tr>
</table>

	12.Innervation of the upper and lower extremities			
12.	Course methodology Interactive lessons, individual consultations with students			
13.	Total time available:		7 EKTS x 30 h = 210 h	
14.	Time allocation:		45+45+30+30+60=210h	
15.	Instructional activities	15.1.	Lectures- theoretical classes	45 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	45 hours
16.	Other activities	16.1.	Projects	30 hours
		16.2.	Individual assignments	30 hours
		16.3.	Independent study	60 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: oral and writtenl)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading System	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Sinelnikov	AnatomicalAtlas ofman(I, II, IIIpart)	Springer	2008
		2.	F.N. Netter	Atlas of human anatomy	Springer	2011
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Sinelnikov	Anatomical Atlas of man(I, II, IIIpart)	Willey	1998
		2.	F.N. Netter	Atlas of human anatomy	Springer	2001

Course description - first, second and third cycle of study					
1.	Course title	Chemistry			
2.	Code	3MF134012			
3.	Programme of study	Dental Medicine			
4.	Organizer of the study programme (unit/ institute, department)	Goce Delcev University Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	First / first semester	7.	Number of ECTS credits	5
8.	Instructor	Prof. Dr. Valentin Mircevski			
9.	Course prerequisites	Enrolled first year			
10.	Course objectives Students are introduced to the basics of general chemistry, structure of atoms and molecules, nomenclature, chemical reactions, as well as to the processes of thermodynamic equilibriums, buffers, and hydrolysis. Also, the basic concepts of organic chemistry are considered.				
11.	Course content <u>Theoretical instruction</u> 1. Introduction. Matter, properties of matter; 2. Atom, structure of atom; 3. Nomenclature of inorganic compounds; 4. Atomic-molecular theory, introduction to mole and amount of compounds, 5. Periodic table of the elements, properties of some of the elements;.Chemical bonds, 6. Chemical reactions; 7. Solutions-acids, bases, salts, Gas laws; 8. Redox reactions. 9. Thermochemistry and thermodynamics; 10. Buffers, Hydrolysis, 11. Organic chemistry, alcohols and carboxylic acids. 12. Aldehydes, ketones and aromatic compounds <u>Practical instruction</u> 1. Introduction to general chemistry; 2. Nomenclature; 3. Estimations on the basis of chemical formulas; 4. Redox reactions; 5. Solutions, preparation and properties of solutions; 6. Concentration of solutions; 7. Acids, bases, salts, Concept of pH, 8. Buffers 9. Buffers capacity 10. Hydrolysis, 11. Reactions of alcohols and carboxylic acids;				

	12. Organic synthesis			
12.	Course methodology Lectures, exercises, seminars, research and practical activities			
13.	Total time available		5 ECTS x 30 h = 150 hours	
14.	Time allocation		30+30+15+15+60 = 150 hours	
15.	Instructional activities	15.1.	Lectures – theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory), seminars, team work	30 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assingments	15 hours
		16.3.	Independent study	60 hours
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper/project (presentation: oral and written)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)		
20.	Language of instruction	Macedonian		
21.	Course evaluation	Self-evaluation		

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Rubin Gulaboski	General Chemistry-handbook for students available at www.rgulaboski.yolasite.com	Goce Delcev University-Stip	2010
		2.	Dušan Malešev	Odabrana poglavlja fizičke hemije	D. Malešev, Beograd	2003
		3.	Rubin Gulaboski	Lectures in ppt format, available at www.gulaboski.yolasite.com	Goce Delcev-University, Stip	2010
		Supplementary materials				

	22.2.	Ordinal number	Author	Title	Publisher	Year
		1.	Z. Bassam. Z. Shakhashiri, R. Schreiner	Workbook for General Chemistry-third edition	University of Wisconsin-Madison	2004
		2.	D. A. McQuarrie, P. A. Rock E. B. Gallogly	General Chemistry-fourth edition	University of California	2011

Course description - first, second and third cycle of study					
1.	Course title	Introduction to human genetics			
2.	Code				
3.	Programme of study	Dental Medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of medical science			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	First / first	7.	Number of ECTS credits	4
8.	Instructor	Assoc. Prof. Darko Bosnakovski			
9.	Course prerequisites				
10.	Course objectives Introduction to basic scientific knowledge of cell biology and genetics.				
11.	Course content 1. Morphology and physiology of the cell. 2. DNA, iRNK, rRNK, tRNA, 3. Transcription, translation, replication of the DNA. 4. Inheritance of properties-principles, gene interaction; Genes- structure and function genome, genotype, genetic code, alleles, and gene expression. 5. Structure and function of the chromosome. Mitosis and meiosis. 6. Autosomal, recessive inheritance, X linked inheritance, intermediate and codominant inheritance. 7. Numerical chromosomal aberrations: aneuploidy, heteroploidy, monosomy, nullisomy, trisomy. 8. Structural aberration: deletions, duplications, translocations, inversions. 9. Mutations. Mutagenic factors. 10. Autosomal and X-linked genetic diseases. 11. Genetic basis of malignancy (cancer). 12. Genetic engineering.				
12.	Course methodology Lectures,exercises,seminar research and practical activities				
13.	Total time available:	24+24+12			

14.	Time allocation:		2+2+1 / per week	
15.	Instructional activities	15.1.	Lectures- theoretical classes	24 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	24 hours
16.	Other activities	16.1.	Projects	4 hours
		16.2.	Individual assignments	4 hours
		16.3.	Independent study	4 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper / project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Nada Miteva	General biology(cytology, genetics, embryology)	UKIM	2000
		2.	Marija Kaeva Pejkovska	Medical genetics	UGD	2008
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Essentials of Genetics	Klug, Cummings and Spencer	Benjamin Cummings	2012

Course description- first, second and third cycle of study

1.	Course title	Dental materials			
2.	Code	3MF121312			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme (unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences Dental Medicine			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	First / first sem.	7.	Number of ECTS credits	4
8.	Instructor	Assoc. Prof. Ivona Kovachevska			
9.	Course prerequisites	Enrolled first year of study			
10.	Course objectives Students will learn the contents and how to obtain general and vocational knowledge about dental materials, their classification and use.				
11.	Course content <u>Theoretical instruction</u> 1. Introduction, classification of dentistry materials, standards and technologies. 2. Physical and chemical characteristics of dentistry materials 3. Plaster cast, types of plaster cast, quantitative and qualitative features, usage 4. Wax, thermoplastic materials, materials for modelling 5. Materials for printing, doubling, isolation and deoxidation 6. Inlay tables, thermo-resistant materials 7. Acrylates. Materials for preparation and scraping 8. Ceramics. Cad-cam and other moderate ceramics 9. Metals and alloys 10. Dental alloys. Alloys for metal ceramics 11. Corrosion of metals and alloys 12. Biocompatibility and protection of dental team <u>Practical instruction</u> 1. Classification and usage of dental materials and technologies. 2. Dental materials - non-metals. Plaster cast (Application and methods of preparation) 3. Inlay table, tables for moulding and soldering (Application and methods of preparation) 4. Materials for modelling. Plastics. Wax 5. Materials for printing. Classification. Rigid plastic and elastic printing masses 6. Materials for doubling. Materials for isolation 7. Metals and alloys 8. Materials for preparation, scrape, drilling and polishing 9. Plastics - artificial masses and acrylates 10. Ceramic masses - porcelain 11. Materials for oral surgery and implantation				

12.	Course methodology Lectures,exercises,seminar research and practical activities			
13.	Total time available:		4 ECTS X 30H= 120	
14.	Time allocation:		2+1+2	
15.	Instructional activities	15.1.	Lectures – theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	30 hours
		16.2.	Individual assignments	15 hours
		16.3.	Independent study	30 hours
17.	Assessment			
	17.1.	Tests		20 points
	17.2.	Seminar paper/project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		7 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature:					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Kovachevska I.	Dentistry materials and technology (script)	UGD	2012
		2.	Stamenkovikj D. et all.	Constructive dentistry materials	Kucha shtampe Zemun	2007
		3.	Jerolimov V. et all.	Foundations of dentistry materials	Zagreb	2005
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Mirchev Eftim	Dental technology	Skopje	1993

Course description - first, second and third cycle of study						
1.	Course title	Biophysics				
2.	Code	3MF129212				
3.	Programme of study	Dental Medicine				
4.	Organizer of the study programme (unit/ institute, department)	Goce Delcev University Faculty of Medical Sciences				
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	I /First semester	7.	Number of ECTS credits	5	
8.	Instructor	Assoc. Prof. Zdenka Stojanovska				
9.	Course prerequisites	Enrolled first semester				
10.	Course objectives Consolidation and broadening of the basic theoretical knowledge of physics and its application in medical science.					
11.	Course content 1. Mechanics, biomechanics. 2. Real systems, energy, work and power, elasticity and plasticity 3. Mechanical oscillations and mechanical waves. Bioacoustics. Ultrasound and its application in medicine 4. Biomechanics of fluids; Ideal and real fluids 5. Thermodynamic. Transport Processes in bio systems; 6. Electrical phenomena, electrical signals in the body. 7. Physical basis of electro diagnostic and electrotherapy. 8. Basic phenomena and laws in optics. Optical instruments; 9. The light and matter. 10. Thermal radiation. Luminescence. IC and UV radiation. Lasers. 11. Interaction of ionization radiation with matter, biological effects. 12. Application of ionizing radiation in diagnostic and therapy.					
12.	Course methodology Discussions, laboratory and numerical exercises, homework, individual projects.					
13.	Total time available:	5 ECTS x 30 h = 150 hours				
14.	Time allocation:	30+30+15+10+65 = 150 hours				
15.	Instructional activities	15.1.	Lectures – theoretical classes	30 hours		
		15.2.	Practice(laboratory, auditory), seminars, team work	30 hours		
16.	Other activities	16.1.	Projects	15 hours		
		16.2.	Individual assingments	10 hours		
		16.3.	Independent study	65 hours		

17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper/project (presentation: oral and written)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)		
20.	Language of instruction	Macedonian		
21.	Course evaluation	Self-evaluation		

22.	Literature:					
	22. 1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	R. Glaser	Biophysics	Springer	2005

Course description - first, second and third cycle of study

1.	Course title	Foreign Language1 (English 1)			
2.	Code	UGD100112			
3.	Programme of study	Dental Medicine			
4.	Organizer of the study programme (unit/ institute, department)	Goce Delcev University Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	I / first semester	7.	Number of ECTS credits	4
8.	Instructor	Prof. Biljana Ivanovska, PhD Prof. Tole Belčev and Senior Lecturer MA Snezhana Kirova			
9.	Course prerequisites	Enrolled first year			
10.	Course objectives				

	The aim of the course is to enable students to supplement and expand their language skills and to use them in specific situations, verbal communications in medicine through the integrated use of linguistic features of discourse.			
11.	Course content Medical texts are organized according to the classification of human body systems.Practicing pronunciation of medical terms, translation of certain terms and phrases, lexical exercises for presentation and evaluation of medical terminology,exercises to enable students for informative, selective and analytical reading through deductive and inductive conclusion, exercises that would enable students to write a short dialogue, summaries, opinions or short articles on a given topic by themselves.			
12.	Course methodology Seminars, interactive method: group work, lectures, homework, papers, discussion, debate, cooperative learning techniques, individual assignments, simulation of extracurricular educational activities, independent study.			
13.	Total time available:	4 ECTS x 30 h = 120 hours		
14.	Time allocation:	0+0+30+30 +30 = 120 hours		
15.	Instructional activities	15.1.	Lectures - theoretical classes	0
		15.2.	Practice (laboratory,auditory), seminars, teamwork	0
16.	Other activities	16.1.	Projects	30
		16.2.	Individual assignments	30
		16.3.	Independent study	60

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: oral and writtenl)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to70 points	7
		from 71 to 80 points	8
		from 81 to 90points	9
		from 91 to100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian and English language	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year

		1.	Pandora Dimovska	English for medical and dental practitioners	UKIM	2000, Skopje

Course description - first, second and third cycle of study

1.	Course title	Foreign Language1 (Italian language 1)			
2.	Code	UGD100212			
3.	Programme of study	Dental Medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	I / first semester	7.	Number of ECTS credits	4
8.	Instructor	Assistant Professor Biljana Ivanovska Professor Tole Belcev Senior Lecturer Snezana Kirova			
9.	Course prerequisites	Enrolled first year			
10.	Course objectives Students are to get acquainted with the basic notions of essential Italian vocabulary used in everyday situations; to develop ability to ask and to give information, to greet, to introduce themselves, to describe the environment where they live and act, to describe a person's physical appearance, to speak about their habits and interests, to communicate on the telephone, to order in a restaurant, to narrate events in the past etc. Introduction to basic vocabulary, reading, listening, speaking and writing skills. Acquisition of reading and writing skills and basic grammatical word classes: definite and indefinite article, gender and number of the nouns and adjectives, descriptive, possessive, demonstrative, interrogative; subject pronouns, numerals, present tense, prepositions, adverbs of place, etc.				
11.	Course content 1. The alphabet, pronunciation, noun, personal information, greetings and farewells 2. Adjectives, personal pronouns, nationality 3. Definite articles 4. The verbs "to have" and "to be" 5. Present simple tense: regular verbs; polite form 6. Writing letters, talking on the phone, requesting and providing information 7. Describing physical appearance; regions and cities in Italy 8. Present simple tense: irregular verbs 9. Leisure activities; describing the environment 10. Modal verbs, numbers, days of the week, telling time 11. Uses of the prepositions, expressing uncertainty, gratitude, indicating possession				

	12. Uses of the adverbs of place; possessive adjectives			
12.	Course methodology Interactive exercises, group work, essays, homework, seminar paper, discussion, debate, lectures, techniques for cooperative learning, individual exercises, simulation of extracurricular educational activities, individual study, use of e-learning in lectures and practical exercises.			
13.	Total time available:		4 ECTS x 30 h = 120 hours	
14.	Time allocation:		0+0+30+30 +30 = 120 hours	
15.	Instructional activities	15.1.	Lectures- theoretical classes	
		15.2.	Practice (laboratory, auditory) seminars, team work	
16.	Other activities	16.1.	Projects	30 hours
		16.2.	Individual assignments	30 hours
		16.3.	Independent study	60 hours
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian and Italian language	
21.	Course evaluation		Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	MARIN,T. & MAGNELLI,S	Progetto italiano 1(Libro dello studente)	Edilingua	
		2.	MARIN,T. & MAGNELLI,S	Progetto italiano 1 (Quaderno degli esercizi)	Edilingua	

		3.				

Course description - first, second and third cycle of study

1.	Course title	Foreign language 1 (German language 1)					
2.	Code	UGD100312					
3.	Programme of study	Dental Medicine					
4.	Organizer of the study programme (unit/ institute, department)	University Goce Delcev Faculty of Medical science					
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle					
6.	Academic year / semester	First / I semester	7.	Number of ECTS credits	6		
8.	Instructor	Biljana Ivanovska PhD, Marica Tasevska					
9.	Course prerequisites	Enrolled first year					
10.	Course objectives Development of the written and spoken competence and acquiring the modern and current events in German-speaking countries.						
11.	Course content Basic German vocabulary,grammar, reading, listening, speaking and writing.						
12.	Course methodology Seminars, interactive method: group work, homework, seminar papers, discussion, debate, techniques of cooperative learning, individual assignments, simulation of extracurricular educational activities, independent study						
13.	Total time available:	4 ECTS x 30 h = 120 hours					
14.	Time allocation:	0+0+30+30 +30 = 120 hours					
15.	Instructional activities	15.1.	Lectures- theoretical classes	0			
		15.2.	Practice(laboratory, auditory) seminars, team work	0			
16.	Other activities	16.1.	Projects	30 hours			
		16.2.	Individual assignments	30 hours			
		16.3.	Independent study	60 hours			
17.	Assessment						
	17.1.	Tests		60			
	17.2.	Seminar paper/project (presentation: oral and written)		10			
	17.3.	Attendance and participation					
	17.4.	Oral examination		30			
18.	Grading system	to 50 points	5				
		from 51 to 60 points	6				
		from 61 to 70points	7				

		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	German language, Macedonian language	
21.	Course evaluation	Self-evaluation	

22. Literature:

22.1. Required materials

Ordinal number	Author	Title	Publisher	Year
1.	Susanne Kalender Petra Klimazyk	Schritte international 1 Deutsch als Fremdsprache/	Hueber Verlag	2006
2.	Dr. Dimitrija Gacov	Deutsche Grammatik	National University Library "NUB Kliment Ohridski"	Skopje 1995
3.	Ranka Grceva Peter Rau	Grosses Makedonisch-Deutsch, Deutsch-Makedonisches Woererbuch	Magor	Skopje 2006

22.2. Supplementary materials

Ordinal number	Author	Title	Publisher	Year
1.	DUDEN	Grammatik der deutschen Sprache	Mannheim/Wien/Zürich: Dudenverlag (=Der Duden in 12 Bänden Bd. 4).	1995
2.	Monika Reimann	Grundstufen-Grammatik für Deutsch als Fremdsprache	Max Hueber Verlag 2001	Leipzig 1979

Course description - first, second and third cycle of study

1.	Course title	Foreign language 1 (French language 1)
2.	Code	UGD100412
3.	Programme of study	Dental Medicine

4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences				
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	First year / first semester	7.	Number of ECTS credits	4	
8.	Instructor	Tole Belchev, Biljana Ivanovska, Snezana Kirova				
9.	Course prerequisites	Basic knowledge of French acquired in previous education				
10.	Course objectives Acquisition of skills for oral and written comprehension and expression in given situations. Capability for correct formulation of simple statements; Capability for communication in everyday situations; Knowledge of the most important milestones of the French civilization.					
11.	Course content Grammar: Mastering the basic rules of pronunciation (dropping of vowels, phonetic bonding, and adding consonants.) Verb groups and their variations in the formation of the Present Tense. Common and proper nouns, gender and number of nouns. Definite and indefinite article, partitive article, article omission, connecting pronouns with propositions. Personal pronouns, use of long pronominal forms, bonding pronouns with propositions. Gender and number of adjectives, their place in relation to the noun. Descriptive, demonstrative, possessive, interrogative, exclamative adjectives. Cardinal and ordinal numbers. Imperative and conditional forms. Formation of negation. Types of interrogative sentences. Vocabulary: Description of personalities, professions, hobbies, food, housing ... Culture and Civilization of France: regions, holidays, cultural landmarks.					
12.	Course methodology Seminars, interactive methods: group work, lectures, homework, papers, discussions, debates, cooperative learning techniques, individual assignments, simulation of extracurricular educational activities, independent study.					
13.	Total time available:	4 ECTS x 30 h = 120 hours				
14.	Time allocation:	0+0+30+30+30 = 120 hours				
15.	Instructional activities	15.1.	Lectures - theoretical classes	0 hours		
		15.2.	Practice (laboratory, auditory) seminars, team work	0 hours		
16.	Other activities	16.1.	Projects	30 hours		
		16.2.	Individual assignments	30 hours		
		16.3.	Independent study	60 hours		
17.	Assessment					
	17.1.	Attendance	maximum10 points			
	17.2	Exercises and activities	maximum 10 points			
	17.3	Tests	maximum 2 x 20 point			
	17.4.	Seminar paper / project (presentation: written and oral) optional	maximum 10 points			

	17.5	Practical exams		maximum 10 points
	17.6	Final exam		maximum 30 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian and French language	
21.	Course evaluation		Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Guy Capelle, Robert Menand	Taxi! 1 Méthode de français	Hachette	2002
		2.	Guy Capelle, Robert Menand	Taxi! 1 Méthode de français Cahier d'exercices	Hachette	2002
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Atanasov, Popovski Kalaklievska	*Francusko-makedonski recnik*	Prosvetno delo	1992
		2.	Atanasov, Popovski	*Makedonsko-francuski recnik*	Prosvetno delo	1992

Course description - first, second and third cycle of study		
1.	Course title	Foreign language 1(Russian language 1)
2.	Code	UGD100612
3.	Programme of study	Dental Medicine
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences

5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	First year / first semester	7.	Number of ECTS credits	4	
8.	Instructor	Snezana Kirova, Tole Belcev, Biljana Ivanovska				
9.	Course prerequisites	Enrolled first year				
10.	Course objectives The main objective of the course is to acquire the ability associated with oral and written expression and comprehension of simple, everyday situations. The student will be able to make introductions, to give basic information about him/herself or other persons, to describe basic activities and to take part in basic everyday dialogues, to narrate stories, to give and seek information, to greet, to communicate by telephone, to discuss topics of everyday life, to describe the environment in which they live, to talk about their habits and interests as well as to learn the grammatical structures and contents etc.					
11.	Course content Basic language features. Reading, writing, spelling rules. Learning the basic grammatical terms: definite and indefinite articles, gender and number, descriptive adjectives, demonstrative, possessive adjectives, cardinal numbers. Present tense and past tense. Accusative case.Types of interrogative and negative sentences, seasons of the year. Short everyday dialogues and compositions, using the grammatical structures and terminology they are familiar with.					
12.	Course methodology Seminars, interactive methods: group work, essays, homework, papers, discussions, debate, cooperative learning techniques, individual assignments, simulations of extracurricular activities, independent study.					
13.	Total time available:	4 ECTS x 30 h = 120 hours				
14.	Time allocation:	0+0+30+30+30 = 120 hours				
15.	Instructional activities	15.1.	Lectures - theoretical classes	0 hours		
		15.2.	Practice (laboratory, auditory) seminars, team work	0 hours		
16.	Other activities	16.1.	Projects	30 hours		
		16.2.	Individual assignments	30 hours		
		16.3.	Independent study	60 hours		
17.	Assessment					
	17.1.	Attendance	maximum10 points			
	17.2	Exercises and activities	maximum 10 points			
	17.3	Tests	maximum 2 x 20 point			
	17.4.	Seminar paper / project (presentation: written and oral) optional	maximum 10 points			
	17.5	Practical exams	maximum 10 points			
	17.6	Final exam	maximum 30 points			

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian and Russian language	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Kathryn Szczepanska	*Russian – a self-teaching guide*	Wiley	2005
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study

1.	Course title	Sports and recreation			
2.	Code	UGD102712			
3.	Programme of study	Dental Medicine			
4.	Organizer of the study programme(unit/ institute, department)	“Goce Delcev” University - Stip Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	First / first	7.	Number of ECTS credits	0
8.	Instructor	Assoc. Prof. Biljana Popeska			
9.	Course prerequisites	Enrolled first year			
10.	Course objectives Fulfillment of students’ needs for movement and physical activity. Maintenance and development of students’ motor abilities.				
11.	Course content				

	1.Basic physical preparation (introduction to fundaments and basic principles of physical activity, exercise for strengthening certain muscle groups) 2. Basic physical preparation (introduction to and application of different forms of warming up, exercises for strengthening certain muscle groups) 3. Aerobics, martial arts and artistic gymnastics (according to the structure of the group) 4. Outdoor activities - hiking and orientation 5. Basketball (practicing basic basketball elements - travelling, passing, dribbling, double dribbling) 6. Basketball (play) 7. Table tennis and badminton 8. Table tennis and badminton 9. Volleyball (play) 10. Handball (play) 11. Aerobics, martial arts, elementary games (according to the group structure) 12. Testing motor abilities, elementary games, modern and traditional dances			
12.	Course methodology Method of practical exercise, method of sport training			
13.	Total time available:		30 hours	
14.	Time allocation:		0+0+2/ per week	
15.	Instructional activities	15.1.	Lectures- theoretical classes	0
		15.2.	Practice (laboratory, auditory) seminars, team work	20 hours
16.	Other activities	16.1.	Projects	5 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	

17.	Assessment	/	
	17.1.	Tests	0
	17.2.	Seminar paper / project (presentation: written and oral)	0
	17.3.	Attendance and participation	0

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of presence on the practical activities	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Motor tests, observation, self-evaluation	

	Literature

22.	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	year
		1.	Kukolj.M	Antropomotorika	Faculty of sport and physical education, Belgrade	2006
		2.	Wilmore, J. & Costill, D.	Physiology of sport and exercise, (Third edition),	Champaign: Human Kinetic, Illinois.	2002
		3.	Malacko,J.	Bases of sports training (Osnove sportskog treninga)	Sports academy, Belgrade	2000
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	year
		1.	Haywood, K., & Getchell, N.	Life span motor development	Champaign: IL. Human Kinetics.	2004
		2.	Magill, R. & Rouge.B	Motor Learning	Broun Publishers, Louisiana	1989
		3.	Malina, R., Bouchard, C. & Bar – Or, O	. Growth, Maturation and Physical Activity (Second Edition).	Champaign: IL. Human Kinetics.	Malina, R., BoucharD

FIRST YEAR – SECOND SEMESTER

Course description - first, second and third cycle of study					
1.	Course title	Anatomy 2			
2.	Code	3MF100312			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme (unit/institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	First/second	7.	Number of ECTS credits	7
8.	Instructor	Assoc. Prof. Svetlana Jovevska			

<table>
<tr><td>9.</td><td colspan="2">Course prerequisites</td><td colspan="3">Completed course in Anatomy 1</td></tr>
<tr><td>10.</td><td colspan="5">Course objectives
Introduction to the anatomy of the head and neck, the organs in the head and neck, the central nervous system and their interconnections.</td></tr>
<tr><td>11.</td><td colspan="5">Course content
<u>Theoretical instruction</u>
1. Arteries of the head and neck
2. Venous and lymphatic vessels in the head and neck
3. Cranial nerves – number, nomenclature and relations
4. Cranial nerves - innervations areas
5. Organs in the head and neck - topography and relations
6. Endocrine glands
7. Organs of the digestive system in the head and neck
8. Organs of the respiratory system in the head and neck
9. Sensory organs, eyes and ears
10. Nervous system, structure, types of nerve fibers, division of the nervous system, ventricular system
11. Spinal cord, hindbrain (rhombencephalon), midbrain (mesencephalon)
12. Interbrain (diencephalon), cerebrum (telencephalon), brain membranes

<u>Practical instruction</u>
1. Vascularization of the head and neck
2. Venous, lymphatic system of the head and neck
3. Cranial and spinal nerves
4. Mouth cavity
5. Organs of the digestive system located in the head and neck
6. Organs of the respiratory system located in the head and neck
7. Nasal cavity - anatomical parts, structure, function
8. Endocrine glands-topography, relations
9. Eye - anatomy, proportion, anatomy of orbit
10. Ear - anatomy, relations with other organs
11. Sensory organs of taste, smell, touch and balance
12. Autonomic nervous system - anatomical division, function</td></tr>
<tr><td>12.</td><td colspan="5">Course methodology
Interactive classes, individual consultations with students</td></tr>
<tr><td>13.</td><td colspan="2">Total time available:</td><td colspan="3">7 ECTS x 30 h = 210 hours</td></tr>
<tr><td>14.</td><td colspan="2">Time allocation:</td><td colspan="3">45+45+15+25 +80 = 210 hours</td></tr>
<tr><td rowspan="2">15.</td><td rowspan="2">Instructional activities</td><td>15.1.</td><td>Lectures- theoretical classes</td><td colspan="2">45 hours</td></tr>
<tr><td>15.2.</td><td>Practice (laboratory, auditory) seminars, team work</td><td colspan="2">45 hours</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Other activities</td><td>16.1.</td><td>Projects</td><td colspan="2">15 hours</td></tr>
<tr><td>16.2.</td><td>Individual assignments</td><td colspan="2">25 hours</td></tr>
<tr><td>16.3.</td><td>Independent study</td><td colspan="2">80 hours</td></tr>
</table>

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: oral and written)	10 points
	17.3.	Attendance and participation	20 points
18.	Grading System	to 50points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	A. Kargovska-Klisarova, J. Josifov	Anatomy of man – General part	Prosvetno delo	2004
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Sinelnikov	Anatomical Atlas of man (I, II, IIIpart)		
		2.	F.N. Netter	Atlas of human anatomy		

Course description - first, second and third cycle of study

1.	Course title	General and oral histology and embriology			
2.	Code	3MF103912			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/institute, department)	Faculty of Medical Sciences,			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	First/second	7.	Number of ECTS credits	4
8.	Instructor	Assoc. Prof. Nevenka Velickova			
9.	Course prerequisites				

10.	Course objectives The purpose of this course is to familiarize students with the histological structure of all tissues and organ systems. Studying this course, students will acquire basic knowledge of histology and embryology as an inevitable condition for overcoming some of the subsequent courses or modules, such as pathological anatomy and pathophysiology. All theoretical knowledge in this subject, students will review and determine by practical laboratory work and exercises.	
11.	Course content <u>Theoretical instruction</u> 1.Histological construction and embryonic development of epithelial tissues 2.Histological construction and embryonic development of the supporting tissues 3.Histological construction and embryonic development and building of muscle tissue and cardiac muscle 4.Histological construction and embryonic development of nerve tissue 5.Histological construction and embryonic development of the oral cavity 6.Histological construction and embryonic development of the tooth 7.Histological construction and embryonic development of the digestive system 8.Histological construction and embryonic development of the salivary glands , pancreas and liver 9.Histological construction and embryonic development of the respiratory system 10.Histological construction and embryonic development of the urinary system 11.Histological construction and embryonic development of the endocrine system 12.Histological construction and embryonic development of the organ of sight and hearing and balance <u>Practical instruction:</u> 1. Training students to recognize all the elements and structures of the body of histological preparations 2. Training students to observe specific combination of tissues involved in the construction of every organ 3. To explain the origin and the embryonic development of each organ system and understand where the disorder may occur in the normal development of the system and any congenital anomalies that may result. 4. Other tissues involved in the construction and to elaborate how their construction participates in their function 5.Structural characteristics of the component that holds the main function of the organ 6. Watching histological preparation: epithelial tissue, connective tissue, bone 7. Watching histological preparation: respiratory, urinary and endocrine system 8. Watching histological preparation: gastrointestinal system 9. Watching histological preparation: skin 10. Watching histological preparation: organ of sight 11. Watching histological preparation CNS 12. Watching histological preparation: male and female genital system	
12.	Course methodology Interactive classes, individual consultations with students	
13.	Total time available:	4 ECTS x 30 h = 120 hours
14.	Time allocation:	30+3030+10+20 = 120 hours

15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	30 hours
16.	Other activities	16.1.	Projects	30 hours
		16.2.	Individual assignments	10 hours
		16.3.	Independent study	20 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: oral and written)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading System	to 50points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Michael Ros, Pavlina Vojcic	Histology-textbook and atlas	Tabernakul	2010
		2.	Luis Carlos Junqueira,Jose Carneiro	Fundamentals of histology	Prosvetno delo	2009
		3.	Nevenka Kostovska, Liljana Milenkova	Histology and embryology		
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Nada Miteva	Histology and embrilogy		
		2.	V. Duancic	Histology and embryology		

Course description - first, second and third cycle of study					
1.	Course title	Anatomy of jaws and dental morphology			
2.	Code	3MF154012			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	First/second	7.	Number of ECTS credits	4
8.	Instructor	Prof. Dr. Cena Dimova			
9.	Course prerequisites	Enrolment in second semester			
10.	Course objectives To learn the basic anatomical and morphological characteristics of the parts of the oro-facial system.				
11.	Course content <u>Theoretical instruction</u> 1.Teeth and dental arch, milk and permanent dentition, anatomical characteristics of the teeth, dental notation systems 2. Teeth histology. Periodontal tissues and their functions. 3.Intercanine teeth – upper and lower incisors 4. Intercanine teeth – upper and lower canines 5. Transcanine teeth –upper and lower premolars 6.Transcanine teeth – upper molars 7. Trancanine teeth –lower molars. Selbah phenomena. 8.Anatomy of upper jaw (maxilla) and palatine bone(os palatimnum) 9.Anatomy of lower jaw (mandible) and TMZ temporo-mandibular joint 10. Anatomy and topography of the orofacial muscles. 11. Occlusions and articulation of the teeth. 12. Orientation dots, lines, plates and face dividing in thirds. <u>Practical instruction</u> Teeth and dental arch, milk and permanent dentition, anatomical characteristics of the teeth Dental notation systems Drawing and molding of upper central incisor in plaster. Drawing and molding upper lateral incisor in plaster. Drawing and molding lower incisors in plaster. Drawing and molding upper and lower canines in plaster. Drawing and molding upper premolars in plaster. Drawing and molding lower premolars in plaster. Drawing and molding upper first molar in plaster. Drawing and molding lower first molar in plaster. . Molding upper and lower incisors in wax.				

	. Molding canines and premolars in wax. . Molding molars in wax.			
12.	Course methodology Lecture, discussion, debate, cooperative learning techniques, individual assignments, independent study.			
13.	Total time available:		4 KTSx30 hours=120	
14.	Time allocation:		30+45+15+5+25=120	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	45 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	25 hours
17.	Assessment			
	17.1.	Tests		20 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		10 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)		
20.	Language of instruction	Macedonian		
21.	Course evaluation	Self-evaluation Students' evaluation		

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Sabanov E	Authorized lectures		
		2.	Jankulovska E.	Anatomy and morphology of the jaw and teeth	Stomatološki fakultet Skopje	2001
	22.2.	Supplementary materials				

		Ordinal number	Author	Title	Publisher	Year
		1.	Jarned,FullerA/Gerald E.Denehy/Thomas M. Schulein	Concise Dental Anatomy and Morphology	University of Iowa	2001
		2.	Stanley J. Nelson DDS 9	Wheeler's Dental Anatomy, Physiology and Occlusion(9th edition)	Elsevier Inc.	2010

Course description - first, second and third cycle of study

1.	Course title	Physiology 1				
2.	Code	3MF103512				
3.	Programme of study	Dental medicine				
4.	Organizer of the study programme (unit/ institute, department)	Faculty of Medical Sciences				
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	First/second	7.	Number of ECTS credits	6	
8.	Instructor	Prof. Dr. Icko K. Gjorgoski				
9.	Course prerequisites	Enrolled second year				
10.	Course objectives The students should aquire knowledge about the fundamental principles in the field of human physiology. They should get familiar with the basic characteristics and mechanisms of body functions in human.					
11.	Course content The importance of physiology as a biological science (1); cellular physiology (1); Muscle physiology (1); Fundamentals of cardiovascular physiology: heart physiology (1), vascular physiology (1), microcirculation (1); Blood as an internal environment (2); Respiratory physiology(2), Neurophysiology (2)					
12.	Course methodology Lectures, tutorials, independent study,preparation of seminar paper,practical course (demonstrative, individual work or work in groups)					
13.	Total time available:	6 ECTS x 30 h = 180 hours				
14.	Time allocation:	45+30+15+15 +60 = 180 hours				
15.	Instructional activities	15.1.	Lectures- theoretical classes	45 h		
		15.2.	Practice (laboratory, auditory) seminars, team work	30 h		
16.	Other activities	16.1.	Projects	15 h		
		16.2.	Individual assignments	15 h 60 h		

		16.3.	Independent study	
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper/project (presentation: oral and written)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading System		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Guyton, A.C. and Hall, J.E	Medical physiology	Saunders company	2008
		2.	Boron, F.W and Boulpaep,E.L	Medical physiology	Elsevier sanders	2005
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Dimovska, J and Gjorgoski, I	Neuroednocrine physiology	Faculty of natural sciences, Skopje	2005

Course description - first, second and third cycle of study		
1.	Course title	Introduction to biochemistry
2.	Code	3MF102112
3.	Programme of study	Dental medicine
4.	Organizer of the study programme(unit/ institute, department)	Faculty of Medical Sciences

5.	Level of study (first, second, third cycle)	Integreted studies of first and second cycle			
6.	Academic year / semester	First / second	7.	Number of ECTS credits	5
8.	Instructor	Assoc. Prof.Tatjana Ruskovska			
9.	Course prerequisites	Enrolled second year			
10.	Course objectives During the course students will learn about the chemical composition of the human body and the basic chemical processes that take place in it. They will become familiar with diagnostic significance of some important clinical biochemical parameters. During the practical instruction students will adopt the basic principles for work in biochemical laboratory and the method of making some qualitative and quantitative analyzes.				
11.	Course content <u>Theoretical instruction</u> Definition of biochemistry. Working phases in the biochemical laboratory analyses. Water, electrolytes and acid-base balance. Proteins 1:Amino acids; Peptides and Proteins; Basic metabolism of proteins; Urea Proteins 2: Proteins in blood plasma; Hemoglobin: its role, chemical structure and catabolism. Bilirubin Enzymes 1: General properties, classification and their role in the organism. Mechanism and kinetics of the enzymatic reactions. Enzymes 2: Fundamentals of clinical enzymology. Clinical significance of some enzymes Lipids 1: General properties, classification and their role in the organism. Lipids 2: Basic lipid metabolism, Lipoproteins in blood plasma. Carbohydrates 1:Monosaccharides: Oligosaccharides and polysaccharides: . Carbohydrates 2: Basic carbohydrate metabolism, oGTT and glicolised hemoglobin . Nucleic acids. . Vitamines: Classification, chemical structure and function. <u>Practical instruction</u> 1. Basic measures for protection in biochemical laboratory. 2. Sampling of venous and capillary blood. Avoiding mistakes in pre-analytic stage. 3. Pipetting. Photometry. 4. Protein 1: Deposition and denaturation of proteins. 5. Proteins 2: Qualitative and quantitative determination of total proteins in biuretic reaction. Albumin. 6. Enzymes: Effects of activators and inhibitors on enzyme activity of salivary amylase. 7. Lipids 1: Solubility of lipids. Proving cholesterol by Salkowski. 8. Lipids 2: Determination of the concentration of total cholesterol in serum (enzymatic quantitative method). 9. Lipids 3: Determination of the concentration of triacylglycerols in serum (quantitative enzymatic method). 10. Carbohydrates 1: Feling experiment. Determination of glucose concentration in serum with				

	GOD-PAP method. 11. Carbohydrates 2: Determination of glucose concentration in serum by using hexokinase method. 12. Carbohydrates 3 : Vehicle glucometar. Determination of glucose and ketone bodies in urine test strips.			
12.	Course methodology <u>Theoretical instruction</u> Interactive teaching: Lectures in large groups and discussions with students. Multimedia teaching.E-learning. Individual consultations with students and consultations in groups. <u>Practical instruction</u> Practical laboratory exercises in small groups. Theoretical discussion about experiments. Final practical work.			
13.	Total time available:		5 ECTS x 30 h = 150 hours	
14.	Time allocation:		45+15+15+15 +60 = 150 hours	
15.	Instructional activities	15.1.	Lectures- theoretical classes	45 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	15 hours
		16.3.	Independent study	60 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: oral and written)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading System	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year

		1.	Tatjana Rushkovska	FUNDAMENTALS OF BIOCHEMISTRY, script	Faculty of Medical Sciences Goce Delcev University - Stip	2012
		2.	Tatjana Rushkovska	FUNDAMENTALS OF BIOCHEMISTRY, practicum	Faculty of Medical Sciences Goce Delcev University - Stip	2012
		3.	Sloboda Dzekova Stojkova at all	Biochemistry	Departemen t of biochemistr y, Medial faculty, Skopje	1999
		4.	Dave Nelson and Nike Cox	Lehninger, Principles of Biochemistry, 5th edition	"Mikena" Bitola, Translated book – Project of the Government - Republic of Macedonia	2011
		5.	Katherine J.Deniston, Joseph J. Toppings, Robert L. Caret	General , Organic and Biochemistry	translated textbook - a project of the Government of the Republic of Macedonia	
			Margaret M. Gingrich, Penny Overbuy and Mary Jean Ritchie	Fluids, electrolytes and acid- base balance	translated textbook - a project of the Government of the	

					Republic of Macedonia	
			Michael L. Bishop, Edward P. Fodi, Larry E.	Shoef clinical chemistry , principles , procedures , correlations , fifth edition	Prosvetno Delo , Skopje Translated textbook - a project of the Government of the Republic of Macedonia	2009
			Alexander K. Brown, John C. Kernoan	Medical Biochemistry	Translated textbook - a project of the Government of the Republic. Macedonia	
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	J. Koolman and K.H. Roehm	Color Atlas of Biochemistry, Second edition, revised and enlarged	Thieme, Stuttgart – New York	2005
		2.	Peter Karlson	BIOKEMIJA, za studente kemije i medicine	Školska knjiga, Zagreb	1993

Course description - first, second and third cycle of study		
1.	Course title	Computer science
2.	Code	3M120012
3.	Programme of study	Dental Medicine
4.	Organizer of the study programme(unit/institute, department)	University “Goce Delcev” Faculty of Medical Sciences
5.	Level of study (first, second, or third study cycle)	Integrated studies of first and second cycle

6.	Academic year / semester	First / second	7.	Number of ECTS credits	4
8.	Instructor	Assoc. Prof. Zoran Zdravev			
9.	Course prerequisites	Enrolled first year			
10.	Course objectives Adopting the basic concepts of computer science and concepts for using computers for communication, research and office work.				
11.	Course content Introduction to computer science: algorithms, abstraction, history, Computer hardware: introduction, types, architecture of computer systems, Murau law Computer hardware: Peripherals, Computer Memory, digital identification; Computer software: applicative software, open source software licenses; Computer software: system software, programming languages; Computer software: web services, online document storage and editing systems, Computer networks: LAN, MAN, WAN, topologies, applications that run on network components, connectivity; Computer networks: Internet, intranet, extranet, Internet services; Computer security: a concept, a security risk, malicious software, unauthorized access, cryptography; Information systems: introduction, types, ERP, CRM, HR, SCM; Content Management Systems CMS: DMS, DAMS, WCM, ECP, ERS; Databases: fundamentals, types, use				
12.	Course methodology Lectures, laboratory exercises, e-learning, individual and team projects, consultations.				
13.	Total time available:	4 ECTS x 30 h = 120 hours			
14.	Time allocation:	30+15+15+15 +45 = 120 hours			
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 h	
		15.2.	Practice (laboratory, auditory) seminars, team work	15 h	
16.	Other activities	16.1.	Projects	15 h	
		16.2.	Individual assignments	15 h	
		16.3.	Independent study	45 h	
17.	Assessment				
	17.1.	Tests		70 points	
	17.2.	Seminar paper/project (presentation: oral and written)		10 points	
	17.3.	Attendance and participation		20 points	
18.	Grading System	to 50 points		5	

		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Zoran Zdravev, Gorgi Dimov, Vladan Andonovic, Silvana Zezova	Computer Science textbook	UGD	2013

SECOND YEAR – FIRST SEMESTER

Course description - first, second and third cycle of study					
1.	Course title	Physiology II			
2.	Code				
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme (unit/ institute, department)	University “Goce Delchev” Faculty of Medical Sciences Department of Stomatology			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Second / first	7.	Number of ECTS credits	8
8.	Instructor	Prof. Dr. Icko K. Gjorgoski			
9.	Course prerequisites				
10.	Course objectives The students will acquire knowledge about the fundamental principles in the field of human physiology. They will get familiar with the basic characteristics and mechanisms of body functions in human.				
11.	Course content				

	Sensory physiology and special senses; Gastrointestinal physiology; Hepatobilliar physiology; Metabolic physiology; Renal physiology and excretion; Endocrinology; Reproductive physiology			
12.	Course methodology Lectures, tutorials, independent study, preparation of seminar paper, practical course (demonstrative, individual work or work in groups)			
13.	Total time available:		8 ECTS x 30 hours = 240 hours	
14.	Time allocation:		60 + 60 + 40 + 80	
15.	Instructional activities	15.1.	Lectures- theoretical classes	60 h
		15.2.	Practice (laboratory, auditory) seminars, team work	60 h
16.	Other activities	16.1.	Projects	40 h 80 h
		16.2.	Individual assignments	
		16.3.	Independent study	

17.	Assessment		
	17.1.	Tests	48-72 points
	17.2.	Seminar paper / project (presentation: written and oral)	12-20 points
	17.3.	Attendance and participation	1-8 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Gjorgoski, I. K.	Physiology	Faculty of natural sciences, Skopje	2012
		2.	Guyton, A.C. and Hall, J.E	Medical physiology	Saunders company	2008

		3.	Boron, F.W and Boulpaep,E.L	Medical physiology	Elsevier sanders	2005
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Dimovska, J. and Gjorgoski, I.	Neuroednocrine physiology	Faculty of Natural sciences, Skopje	2005

Course description - first, second and third cycle of study					
1.	Course title	Microbiology and parasitology			
2.	Code				
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University “Goce Delcev” Faculty of Medical Sciences Department of Microbiology			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Second / first	7.	Number of ECTS credits	6.0
8.	Instructor	Assoc. Prof. Vaso Taleski			
9.	Course prerequisites				
10.	Course objectives The main objective of the course is to introduce and enable students to acquire theoretical, practical knowledge, skills and competences in field of microbiology.				
11.	Course content <u>Theoretical instruction</u> 1. Introduction of history and development of microbiology as a science, significance of microorganisms. Classification of bacteria, taxonomic categories, nomenclature, size, shape and disposition of bacteria 2. Morphology and structure of bacterial cells: capsule, cell wall, cytoplasmic membrane, cytoplasm and cytoplasmic inclusions, fimbrae and pili, flagellum, bacterial spores, bacterial movement. Conditions for growth and multiplication, growth phases, bacterial colonies 3. Chemical composition of bacteria, metabolism, mechanism of bacterial feeding, metabolism of energy 4. Metabolism of nucleic acids. DNA replication. Nucleic acids decomposition Bacterial genetics. Bacterial phenotype and genotype variations. Gene transfer 5. Spreading of microorganisms. Associations of microorganisms. Pathogenicity and virulence. Infections and infective diseases. Nonspecific and specific immunity in humans. Immunotherapy and immune-prophylaxis. 6. Sterilization and disinfection. Antibiotics and chemiotherapeutics. Microorganism’s resistance toward antibiotics. Side effects of chemiotherapeutics.				

	7. Aerobic and anaerobic Gram positive and negative cocci. 8. Gram negative rods. Gram positive rods: sopreforming and non-sporeforming 9. Spiral bacteria. *Rickettsia. Mycobacteria. Actinomyces,Nocardia* 10. Morphology, structure, classification and multiplication of viruses. Importance of viral infections 11. Most important DNA and RNA viruses 12. Morphology, structure, classification and multiplication of fungi. Morphology, struct classification and importance of parasites <u>Practical instruction</u> 1. Principles for safety work in microbiology laboratory. Sampling, packaging and delivering samples for microbiology testing 2. Microscope a microscopic examinations of microorganisms (light microscope, fluorescence microscope, electron microscope). Staining of microorganisms (Gram, Giemsa, Ziehl-Neelsen) 3. Culture media and bacterial cultivation. Identification of bacteria (classical biochemical reactions, automatic systems for identification) 4. Antibiotic susceptibility testing of bacteria/antibiogram (classical diffusion and dilution methods, automatic systems, E-test). Hemocultures 5. Microbiological diagnosis of wound infections and respiratory infections 6. Microbiological diagnosis of genital-urinary and sexually transmitted infections 7. Microbiological diagnosis of enteropathogens 8. Classical serologic reactions. Rapid tests 9. Immune-enzymes methods (ELISA, VIDAS) 10. Sterilization and Disinfection 11. Methods of viral diagnosis. Hepatitis markers. Diagnosis of HIV infections. 12. Diagnosis of yeasts and parasites			
12.	Course methodology Methods of oral and visual learning/presentations and practical work in the lab.			
13.	Total time available:		180 hours	
14.	Time allocation:		3+2+1 per week	
15.	Instructional activities	15.1.	Lectures- theoretical classes	45 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	30 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	15 hours
		16.3.	Independent study	75 hours
17.	Assessment			
	17.1.	Tests		40 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points

	17.3.	Attendance and participation during lecturing		10 points
	17.4	Attendance and participation during lab practical work		10 points
	17.5	Final exam		30 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)		
20.	Language of instruction	Macedonian		
21.	Course evaluation	Self-evaluation		

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Greenwood D. et all.	Medical microbiology	Project of the Government of the Republic of Macedonia, for translation of vocational and scientific books	17-edition, 2006, Translated in 2011
		2.	Panovski N. et all. Guest / invited author: Vaso Taleski	Medical microbiology General part	Institute of Microbiology and parasitology, Medical faculty Skopje.	2011
		3.	Panovski N. et all. Guest / invited author: Vaso Taleski	Medical microbiology Special part	Institute of Microbiology and parasitology, Medical faculty Skopje.	2011
		4.	Jawetz, Melnick, & Adelberg	"Medical Microbiology"	The McGraw-Hill Companies	24th ed., 2007

	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Milena Petrovska et all.	Handbook on medical microbiology and parasitology	Institute of Microbiology and parasitology, Medical faculty Skopje,	5th ed. 2010

Course description - first, second and third cycle of study					
1.	Course title	Pharmacology			
2.	Code				
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences Dental medicine			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Second year/ first semester	7.	Number of ECTS credits	4
8.	Instructor	Assoc. Prof. Trajan Balkanov			
9.	Course prerequisites	None			
10.	Course objectives To introduce students to the basic pharmacokinetic (absorption, distribution, metabolism and elimination of drugs) and pharmacodinamic processes in the human organism, the mechanism of action of drugs, factors that determine safety and efficacy, dosing and factors affecting dosing of drugs , interactions and side effects of medications, and to provide a review of the most basic characteristics of most drugs that are now used in everyday practice.				
11.	Course content 1. Basic pharmacology, Pharmacodinamic (the effect of the drugs on the human organism) 2. The mechanism of action of the drugs; Character of action, specificity and selectivity 3. Types of therapy, etiology, symptomatic; Quantitative aspects of the effects of drugs 4. Correlation between the structure of the drug and the pharmacological response; strength and effectiveness of drugs 5. The notion of accumulation and tolerance; mutual effect of drugs; Side effects of drugs (toxicity, allergic, genetically determined). Drug addiction 6. Drugs that act through the peripheral nervous system 7. Pharmacology of the drugs that act through the central nervous system 8. Treatment of cardiovascular disease, Haemostasis and Thrombosis, drugs that are used in the treatment of anemia				

	9. Treatment of respiratory diseases 10. Treatment of diseases of the digestive tract 11. The use of vitamins and hormones in daily therapy practice 12. Anti-infective drugs			
12.	Course methodology Research, working in small groups, homework, practical work, independent seminar paper, discussion, debate, individual assignments			
13.	Total time available:			
14.	Time allocation:		2+1+2 / per week	
15.	Instructional activities	15.1.	Lectures- theoretical classes	2 per week
		15.2.	Practice (laboratory, auditory) seminars, team work	1 per week
16.	Other activities	16.1.	Projects	hours
		16.2.	Individual assignments	2 hour
		16.3.	Independent study	hours
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Ass.prof.dr. Trajan Balkanov	Pharmacology of dentists – general part	authorized lectures, script	2013

			Prof.dr. Srdjan Pesic			
		2.	Ass.prof.dr. Trajan Balkanov Prof.dr. Srdjan Pesic	Pharmacology of dentists – special part	authorized lectures, script	2013
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Rang HP, Dale MM, Ritter JM, Moore PK	PHARMACOLOGY, translation	Churchill Livingstone	Лондон, 2005

Course description - first, second and third cycle of study

1.	Course title	Preclinical mobile prosthodontics (complete denture)			
2.	Code	3MF149012			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University “Goce Delchev” Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	II / I sem	7.	Number of ECTS credits	5
8.	Instructor	Prof. Dr. Dragoljub Veleski			
9.	Course prerequisites	None			
10.	Course objectives Biological basis and meaning of the complete denture in patient treatment. Procedure for producing complete dentures.				
11.	Course content <u>Theoretical instruction</u> 1. Biological basis and meaning of the complete denture 2. Impressions, taking anatomical impressions for total dentures and producing anatomical models 3. Making individual trays. 4. Importance of functional impressions. 5. Making wax basis. 6. Determinating intermaxillar relations. 7. Transvering and fixing the models in articulator. 8. Selections of artificial teeth for total dentures, type, classifications, and methods for selection, fitting of the total dentures with placed artificial teeth in wax. 9. Methods for flasking-investing complete dentures and polymerizations methods of the acrylics.				

	10. Repairs of removable mobile dentures. 11. Immediate dentures. 12. Basics principles for balanced occlusion. <u>Practical instruction</u> 1. Biological basis and meaning of the complete denture 2. Impressions, taking anatomical impressions for total dentures and producing anatomical models 3. Making individual trays. 4. Importance of functional impressions. 5. Making wax basis. 6. Determination of intermaxillar relations. 7. Transferring and fixing the models in articulator. 8. Selections of artificial teeth for total dentures, type, classifications, and methods for selection, fitting of the total dentures with placed artificial teeth in wax. 9. Methods for flasking-investing complete dentures and polymerizations methods of the acrylics. 10. Repairs of removable mobile dentures. 11. Immediate dentures. 12. Basics principles for balanced oclusion.			
12.	Course methodology Lectures, discussion, debate, cooperative learning techniques, individual assignments, independent study.			
13.	Total time available:		5EKTSx30h=150hours	
14.	Time allocation:		30+45+15+10+50=150hours	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 h
		15.2.	Practice (laboratory, auditory) seminars, team work	45 h
16.	Other activities	16.1.	Projects	15 h
		16.2.	Individual assignments	10h
		16.3.	Independent study	50 h
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9

		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Jankulovska E.	Total dentures	Skopje	2001
		2.	Mircev E.	Total dentures - preclinic	Skopje	1995
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Gugucevski Lj. Dejanovski K. Velevski D	Clinic of total dentures	Skopje	2004

Course description - first, second and third cycle of study					
1.	Course title	Epidemiology and public health			
2.	Code				
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University “Goce Delcev” Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	II /I	7.	Number of ECTS credits	4
8.	Instructor	Prof. Dr. Gjorgji Shumanov			
9.	Course prerequisites				
10.	Course objectives This course enables students to gain knowledge in epidemiology and public health. Students will learn about prevention measures, disease suppression and health devastation. The course provides information about the epidemiological characteristics of contagious diseases (with faecal-oral, contact, airborne and vector transmission) and non-contagious diseases (cardiovascular diseases, cancers, diabetes, traumatism).				

11.	Course content Theoretical instruction 1. Epidemic process 2. Epidemiological methods 3. Types of epidemics 4. Forms of epidemic processes 5. Occurrence of infection and transmission of contagious diseases 6. Prevention measures and health devastation 7. Preventative medical care in wars and emergencies 8. Epidemiological characteristics of intestinal infections 9. Epidemiological characteristics of respiratory infections 10. Epidemiological characteristics of diseases transmitted by vectors 11. Epidemiological characteristics of zoonosis infections 12. Epidemiological characteristics of non-contagious diseases and health devastation Practical instruction 1. Epidemiological methods and study designs 2. Data collection, questionnaire, sample 3. Epidemic processes, forms of epidemic processes, epidemiological models 4. Epidemiological characteristics and examples of intestinal, respiratory, vector-borne and contact infections 5. Immunization, mandatory vaccination and vaccination according to epidemiological indications 6. Prevention during professional exposure 7. Epidemiological characteristics of intestinal infections 8. Epidemiological characteristics of respiratory infections 9. Epidemiological characteristics of contact infections 10. Epidemiological characteristics of vector-borne infections 11. Epidemiological characteristics of chronic non-contagious disease 12. Epidemiological characteristics of cancers, diabetes and addictions			
12.	Course methodology Methods of oral and visual learning/presentations and practical work.			
13.	Total time available:		120 hours	
14.	Time allocation:		2+1+1 per week	
15.	Instructional activities	15.1.	Lectures- theoretical classes	24 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	12 hours
16.	Other activities	16.1.	Projects	4 hours
		16.2.	Individual assignments	4 hours
		16.3.	Independent study	4 hours
17.	Assessment			
	17.1.	Tests		40 points

	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation during lecturing		10 points
	17.4	Attendance and participation during lab practical work		10 points
	17.5	Final exam		30 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)		
20.	Language of instruction	Macedonian		
21.	Course evaluation	Student evaluation Self-evaluation		

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Gorgi Sumanov, Blaze Nikolovski	Epidemiologija I javno zdravstvo	"Napredok" Tetovo	2009
		2.	Lence Mircevska, Donco Donev, Ilija Gligorov	Zdravstveno vospitanie	"Sv. Kliment Ohridski" Bitola	2006
	22.2.	Supplementary materials				
		Ordinal number	Dzejms F. Dzekel and Dejvid L. Kalc	Epidemiologija biostatistika I preventivna medicina	Tabernakul, Skopje	2010

Course description - first, second and third cycle of study					
1.	Course title	Oral health			
2.	Code	3MF154212			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	II / I	7.	Number of ECTS credits	2
8.	Instructor	Assoc. Prof. Cena Dimova			

9.	Course prerequisites	Enrolled in second year of studies		
10.	Course objectives - Prevention of periodontal and other diseases among groups of patients - Prevention of periodontal and other diseases in patients at high risk, - Oral hygiene, oral health and nutrition in patients. - Training patients to maintain oral hygiene. - The role of health professionals in the prevention of oral health. - Work in the office for the patient's admission, recording into the program, diagnosis, therapy plan for regular checks.			
11.	Course content <u>Theoretical instruction</u> - Introduction to the course - Biological mechanism of protection of the oral mucosa - Factors that cause disruption of the oral health - Epidemiology of periodontal and oral mucosal diseases - Prevention of periodontal disease - Prevention of periodontal in groups at high risk for the occurrence of the disease - Prevention of oral mucosal disease - Oral health of the population in advanced age - Oral hygiene in order to preserve oral health - Nutrition and oral health - Promotion of oral health and educational programs <u>Practical instruction</u> - Admission of patients, review and identification of risk factors for oral health disorder - Determining the state of oral hygiene - Motivation to maintain oral hygiene - Training of the patient to maintain oral hygiene - Oral health and oral hygiene - Types of oral hygiene techniques - Nutrition and oral health - Dental caries, dental plaque, tartar - Gingivitis – classification, gravitas gingivitis - Types of dental interventions - Removal of soft and hard plaque, pigmentation teeth - Educational programs for oral health - Dental and orthodontic cardboard and medical documentation			
12.	Course methodology Lectures, auditoria exercises, consultations.			
13.	Total time available:		2EKTSx30h=60hours	
14.	Time allocation:		15+15+15+5+10=60hours	
15.	Instructional activities	15.1.	Lectures- theoretical classes	15 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours

16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	10 hours

17.	Assessment		
	17.1.	Tests	(20+20+30)=70 points
	17.2.	Seminar paper / project (presentation: written and/ oral)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Ivanovski K, Pandilova M.	Oral health	Faculty of Dentistry Skopje	2008
		2.	Murray JJ, Nunn JH, Steele JG.	The Prevention of Oral Disease	Fourth Edition, Oxford University Press Inc., New York	2003
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Minovska A et al.	Oral hygienic	Faculty of Dentistry Skopje	2004
		2.	Dimova Cena	Prophylaxis of oral diseases	UGD, FMN	2013

		3.	Carcev M.	Preventive dentistry	Faculty of Dentistry Skopje	2006

SECOND YEAR - SECOND SEMESTER

Course description - first, second and third cycle of study					
1.	Course title	Pathophysiology			
2.	Code	3MF103012			
3.	Programme of study	Dental Medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Second / II	7.	Number of ECTS credits	6
8.	Instructor	Assoc. Prof. Zoran Handzhiski			
9.	Course prerequisites	Finished third and enrolled fourth semester			
10.	Course objectives Students become familiar with the general malfunctions and pathophysiological processes of the body.				
11.	Course content <u>Theoretical instruction</u> • Disorders of the structure and function of macromolecules • Malfunctions subcelularnite structures • Disorders of energy metabolism and the metabolism of essential nutrients • Disruptions in the supply of specific metabolic compounds • Disorders of the turnover of water and electrolytes • Disorders of the acido-base balance • Biologically active endogenous compounds in the pathophysiologic processes • Disorders of neurovegetative regulation. Pathophysiological basis of pain. • Disorders of thermoregulation. Imunopatophysiology • Inflamations. Overall response of the organism to Knox. • Infections. • Circulatory shock. Disorders of consciousness. <u>Practical instruction</u> • Pathophysiological basis of inheritance of diseases and syndromes • Cell death • Substrate hipoenergozis- starvation • Disorders of protein metabolism • Disorders of metabolism of purines and pririmidins bases - Gout				

	• Disruptions of supply of calcium , phosphate and magenzium • Gastrointestinal hormones and neuropeptides • Reactions of transplantation of tissues • Pathophysiology of Aging			
12.	Course methodology Interactive teaching/lectures and tutorials, practical exercises.			
13.	Total time available:		45+30+15	
14.	Time allocation:		3+2+1	
15.	Instructional activities	15.1.	Lectures- theoretical classes	45
		15.2.	Practice (laboratory, auditory) seminars, team work	30
16.	Other activities	16.1.	Projects	5 hours
		16.2.	Individual assignments	5hours
		16.3.	Independent study	5 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: oral and written)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal numbre	Author	Title	Publisher	Year
		1.	Gamulin S., M Marushich. Z. Kovacs. and associates	Pathophysiology	Sixth Edition - Zagreb	2005
		2.	Vaskova O., Miceva S. Ristevska, Pop Gjorchev D., D Milaidnovska., S. Loparska., Ivanovska J.E.	Practicum in general and special pathological physiology	Skopje	

		3.	Isaac Tadzher and associates	General pathological physiology	Medical Book, Belgrade	
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study					
1.	Course title	Pathology			
2.	Code	3MF102512			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	2nd / II semester	7.	Number of ECTS credits	7
8.	Instructor	Prof. Dr. Gordana Petrushevska			
9.	Course prerequisites	Listened courses Anatomy and Physiology			
10.	Course objectives Acquiring knowledge about etiology, mechanisms and morphological changes in cells and tissues of the human organism under the influence of pathological agents and diagnosis of those changes.				
11.	Course content 1. Cell injuries, Cell Death, and Adaptations; 2. Acute and Chronic Inflammation; 3. Hemodynamic Disorders, Thrombosis, and Shock 4. Diseases of the Immune System; 5. Neoplasms 6. Pathology of the Reticulo-endothelial System 7. Pathology of the Respiratory System 8. Pathology of the Cardio-vascular System 9. Pathology of the Gastro-intestinal System 10. Pathology of the Hepato-billiar System 11. Pathology of the Genito-urinary System 12. Pathology of the Skin & Musculo-sceletal System				
12.	Course methodology Theoretical lectures, practical exercises, seminar papers, individual presentation;				
13.	Total time available:	105			
14.	Time allocation:	3+3+1 / per week			
15.	Instructional activities	15.1.	Lectures- theoretical classes	45h	

		15.2.	Practice (laboratory, auditory) seminars, team work	45 h
16.	Other activities	16.1.	Projects	5hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	5hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper / project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Kumar, Abbas, Fausto, Mitchell	Robbins Basis of Pathology, 8th	Saunders, Elsevier	2010
		2.	Eduard K. Klatt	Robbins and Cotran Atlas of Pathology	Saunders, Elsevier	2009
		3.	Authorized Lectures			
	22.2.	Supplementary materials				

Course description - first, second and third cycle of study		
1.	Course title	Preclinical cariology
2.	Code	3MF160012
3.	Programme of study	Dental medicine
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle

6.	Academic year / semester	second 2th semester	7.	Number of ECTS credits	6
8.	Instructor	Ass. Prof. Dr. Ivona Kovacevska			
9.	Course prerequisites	Enrollment in second year of study			
10.	Course objectives The aim of preclinical cariology is to introduce students to the core of the large field to which belongs restorative dentistry. Over 24 hours of theoretical instruction will give students a thorough and up-to-date knowledge in the field of conservative restorative dentistry. Introduction to etiology and pathohistology of dental caries, operative treatment of dental hard tissue diseases, materials and medications used in restorative dentistry. The purpose of the preclinical practical work is to enable students for work with patients. Students perform practical preparation of all cavity types on models, placement of protective lining and permanent filling, modelation and reconstruction of the occlusion.				
11.	Course content <u>Theoretical instruction</u> 1. Introduction, nomenclature, enamel 2. Dentin 3. Root cement 4. Dental caries- definition, etiology, epidemiology 5. Dental office, work place instruments, handpieces, burs 6. Basic and special principles of cavity preparation (discussion about Black's principles), 7. Preparation of Class I. and Class V. 8. Preparation of Class II. and MOD. 9. Preparation of Class III. and Class IV. 10. Various types of carious lesions 11. Micro and macro appearance of carious lesion 12. Carious process in enamel, dentin and root cement 13. Modifications of preparations of cavities for adhesive materials 14. Mount classification and therapy of carious lesion 15. Materials for temporary and permanent cavity filling in restorative dentistry 16. Material for protection of the dentin wound: bases, liners, sealers 17. Dental amalgam – composition of amalgam alloys ant their relevance to clinical practice 18. Dental amalgam – handling, indication and contraindication 19. Resin composites – composition, properties 20. Resin composites – handling, polymerization 21. Family of glass ionomers (composition, properties) 22. Classification of glass ionomers, compomers 23. Dental adhesives 24. Inlays and onlays <u>Practical instruction</u> 1. Theoretical introduction to the exercise: Introduction to the structure of the tooth. Workplace of the dentist; *Position of the therapist in relation to the patient. Direct or indirect practical work. Reliance of hand while working in the mouth.* 2. Theoretical introduction to the exercise: Basic principles of cavity preparation (Black's principles), *Preparation of Class I. and Class V on wax models.* 3. *Preparation of Class II and MOD on wax models (molar and premolar teeth).* *4. Preparation of Class III and IV on wax models.* 5. Theoretical introduction to the exercise: work with low-speed handpieces and air- turbine.				

	Preparation of Class I. and Class V in acrylic teeth in phantom models. *6. Preparation of Class II and MOD in acrylic teeth in phantom models* 7. *Preparation of Class III and IV in acrylic teeth in phantom models* 8. Theoretical introduction to the exercise: practical demonstration of handling with liners, sealers and bases. *Placing the base in all prepared acrylic teeth.* 9. Theoretical introduction to the exercise: Dental amalgam – handling and mixing, applying the matrix band, interdentally wedges. *Inserting, carving and finishing the amalgam in cavities of I and V Class. Inserting, carving and finishing the amalgam in cavities of II Class and MOD* 10. Theoretical introduction to the exercise: Resin composite.*Placing resin composite, finishing and polishing.* *11. Inlay preparation, taking impression. Polishing the amalgam restoration* 12. Cementing of inlay preparation			
12.	Course methodology Lectures, discussion, debate, cooperative learning techniques, individual assignments, independent study			
13.	Total time available:		90	
14.	Time allocation:		2+3+1 (per week)	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30classes
		15.2.	Practice (laboratory, auditory) seminars, team work	45 classes
16.	Other activities	16.1.	Projects	5 classes
		16.2.	Individual assignments	5 classes
		16.3.	Independent study	5 classes
17.	Assessment			
	17.1	Tests		70 (40+30) classes
	17.2	Seminar paper / project (presentation: written and oral)		/ classes
	17.3.	Attendance and participation		10 classes
	17.4.	Practical work and practical exam		20 classes
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)		
20.	Language of instruction	Macedonian		
21.	Course evaluation	Self-evaluation		

22.	Literature	
	22.1.	Required materials

		Ordinal number	Author	Title	Publisher	Year
		1.	Popovska Lidija	Preclinical cariology	In press	2013
		2.	Popovska Lidija	Authorized lectures	e-learning	2012
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Summit et all.	Fundaments of Operative dentistry: A contemporary Approach,	Quintessence Publishing	2006
		2.	A. Demien Walmsley	Restavrative dentistry	Churchill Livingstone Elsevier	2007
		3.	Edwina A.M. Kidd et all	Pickard's Manual of operative dentistry	Oxford University press	2003

Course description - first, second and third cycle of study

1.	Course title	Preclinical mobile prosthodontics (partial denture)			
2.	Code	3MF149112			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences Department of prosthodontics and orthopaedics of teeth and jaws			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	second II semester	7.	Number of ECTS credits	5
8.	Instructor	Prof. Dr. Dragoljub Veleski			
9.	Course prerequisites	Enrolled in second year of studies			
10.	Course objectives Biological basis and meaning of the partial denture in patient treatment. Procedure for producing partial dentures.				
11.	Course content <u>Theoretical instruction</u> 1. Historical view of the development of therapy with partial dentures. 2. Introduction to partial dentures and their types (classical and skeletal) 3. Changes in the orofacial system due to partial loss of natural teeth. 4. Characteristics of the basics tissues for partial dentures. 5. Introduction to parallelometry, meaning of dental parallelometer, purpose and components. 6. Impressions' materials, techniques, custom trays and types of trays. 7. Classification of partial edentulous ridge. 8. Components of classical (acrylic) and skeletal partial dentures. 9. Elements for retention of the partial dentures (clasps and atecmen)				

	10. Technical procedure for producing partial dentures. 11. Retention and stabilization of partial dentures. 12. Biomechanics of orofacial system. <u>Practical instruction</u> 1. Introducing the dental technicians to work environment and instruments. 2. Impressions' materials, their application, trays and technics. 3. Processing models and alveolar ridges and their relation with the teeth, ridges line and their relations and static rules for placement teeth in partial dentures. 4. Introduction in parallelometry, meaning of dental parallelometer, purpose and components. 5. Making individual trays, types, materials and working techniques. 6. Producing occlusion rims and waxing of the skelet. 7. Taking intermaxillary relations and fixing the models in articulator. 8. Making of wire clasps (groups 1 and 2) and their parts. 9. Casting clasps (Ney system). Introduction into the occlusal rests for dental transfer of masticatory forces. 10. Atecmen like retention elements and their implication in retention and stabilization in partial dentures. 11. Casting and fitting of skeletal dentures, and technical oredressing. 12. Selections of artificial teeth for total dentures, type, classifications, and methods for selection.			
12.	Course methodology Lectures, discussion, debate, cooperative learning techniques, individual assignments, independent study.			
13.	Total time available:		75	
14.	Time allocation:		2+2+1 per week	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30classes
		15.2.	Practice (laboratory, auditory) seminars, team work	30classes
16.	Other activities	16.1.	Projects	5hours
		16.2.	Individual assignments	5hours
		16.3.	Independent study	5hours
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7

		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Guguvcevski Lj	Preclinical mobile prosthodontics	Skopje	2008
		2.	Stamenkovic D. Nastic	Preclinical mobile prosthodontics (partial denture)	Beograd	2000.
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study					
1.	Course title	Prophylaxis of oral diseases			
2.	Code	3MF1544412			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences Department of oral and maxillofacial surgery and dental implantology			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	II / II sem	7.	Number of ECTS credits	4
8.	Instructor	Assoc. Prof. Cena Dimova			
9.	Course prerequisites	Enrolled in second year of studies			
10.	Course objectives Prevention of caries, parodontopathy and orthodontic anomalies. Prevention of oral diseases among groups of patients. Prevention of oral disease in patients at high risk, Oral hygiene, oral health and nutrition in patients. The role of health professionals in the				

	prevention of oral health. Working in the office of the patient's admission, rob realized, diagnosis, therapy plan to regular checks.			
11.	Course content <u>Theoretical instruction</u> - Program Dental Care - Promotion, promotion of oral health strategies for the prevention of oral diseases. - Eating and caries. Eating and oral health. - Biological mechanisms for the protection of the oral cavity. - Etiology and Pathogensis of oral diseases, diseases of hard tissues of the tooth. - Periodontal disease and soft tissues of the oral cavity. Etiology of oral cancer - Oral Hygiene. - Prophylactic measures in the prevention of oral diseases - Diagnosing risk for cavities - Preventive and interceptive orthodontics - Epidemiological studies of diseases of the mouth and teeth			
12.	Course methodology Lectures, auditoria exercises, consultations.			
13.	Total time available:		120	
14.	Time allocation:		2+1+1 / per week	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	20 hours
		16.3.	Independent study	40 hours
17.	Assessment			
	17.1.	Tests		(20+20+30)=70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Dimova Cena	Prophylaxis of oral diseases	UGD, FMN	2013
		2.	Murray JJ, Nunn JH, Steele JG.	The Prevention of Oral Disease	Fourth Edition, Oxford University Press Inc., New York	2003
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Minovska A et al.	Oral hygienic	Faculty of Dentistry Skopje	2004
		2.	Ivanovski K, Pandilova M.	Oral health	Faculty of Dentistry Skopje	2008
		3.	Carcev M.	Preventive dentistry	Faculty of Dentistry Skopje	2006

THIRD YEAR – FIRST SEMESTER

Course description - first, second and third cycle of study					
1.	Course title	Preclinical fixed prosthodontics 1			
2.	Code	3MF151212			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme (unit/institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	III/ First sem.	7.	Number of ECTS credits	6
8.	Instructor	Assoc. Prof. Nikola Gigovski			
9.	Course prerequisites				

<table>
<tr><td>10.</td><td colspan="4">Course objectives
-Introduction to the fabrication of fixed constructions, crowns
-Working in phases for fabrication of fixed constructions</td></tr>
<tr><td>11.</td><td colspan="4">Course content
<u>Theoretical instruction</u>
• Introduction to the fabrication of fixed prosthetic constructions
• Preparation of the teeth for fabrication of artificial crowns, impressions for fabrication of crowns
• Pouring impressions and fabrication of working casts with separate dies
• Definition and types of articulators and fixation of the working casts
• Coping fabrication and different protocols for fabrication
• Wax pattern of full metal crown
• Wax pattern of veneer metal crown on die with spacing
• Wax pattern of veneer metal crown with vestibular veneer
• Spruing and investing of the crown wax pattern
• Casting of the crown wax pattern
• Try-in and adjustment of the metal cast
• Compossite veneering of esthetic crown
<u>Practical instruction</u>
• Introduction to the fabrication of fixed prosthetic constructions
• Impressions and fabrication of working cast with separate dies
• Fixation of the working casts in articulator
• Different techniques for coping fabrication
• Wax pattern of full metal crown
• Wax pattern of metal crown with vestibular veneer
• Wax pattern of porcelain fussed to metal crown
• Spruing and investing of the wax pattern
• Casting of wax pattern
• Try-in and adjustment of the metal cast
• Veneering of esthetic crown with composites
• Polishing of the esthetic crown with composites</td></tr>
<tr><td>12.</td><td colspan="4">Course methodology
Lectures, preclinical laboratory exercises, consultations.</td></tr>
<tr><td>13.</td><td colspan="2">Total time available:</td><td colspan="2">92</td></tr>
<tr><td>14.</td><td colspan="2">Time allocation:</td><td colspan="2">2+4+1</td></tr>
<tr><td rowspan="2">15.</td><td rowspan="2">Instructional activities</td><td>15.1.</td><td>Lectures – theoretical classes</td><td>24 hours</td></tr>
<tr><td>15.2.</td><td>Practice (laboratory, auditory) seminars, team work</td><td>48 hours</td></tr>
<tr><td rowspan="2">16.</td><td rowspan="2">Other activities</td><td>16.1.</td><td>Projects</td><td>4 hours</td></tr>
<tr><td>16.2.</td><td>Individual assignments</td><td>4 hours</td></tr>
</table>

		16.3.	Independent study	12 hours
17.	Assessment			
	17.1.	Tests		40 points
	17.2.	Seminar paper/project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		10 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Eftim Mircev	Preclinical Fixed prosthodontics	Facuty of Dentistry	2001, Skopje
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.				
		2.				

Course description - first, second and third cycle of study					
1.	Course title	Preclinical endodontics			
2.	Code	3MF			
3.	Programme of study	Dental Medicine			
4.	Organizer of the study programme(unit/institute,department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	lll / I sem.	7.	Number of ECTS credits	4
8.	Instructor	Assoc. Prof. Ivona Kovacevska			

9.	Course prerequisites	Enrolled third academic year Listened to Preclinical cariology		
10.	Course objectives To study and master basic endodontic therapeutic procedures.			
11.	Course content <u>Theoretical instruction</u> Anatomy, topography, physiology of pulp. Functions of the pulp Anatomy and morphology of endodontic space in all teeth. Formation of accessible cavities. Methods and techniques for determining the working length of the canal. Instruments in endodontic therapy. Manual processing of the root canal system. Mechanical root canal preparation techniques. Drugs and medicines in the endodontic therapy. Root canal irrigation. Root canal obturation. Gutta-percha techniques of obturation. Errors during endodontic therapeutic procedure. <u>Practical instruction</u> Pulp topography classification, histological elements. Technique of access cavities. Pulp extirpation. Determination of working length. Endodontic instruments. Techniques of root canal preparations - crown - down. Techniques of manual preparations. Irrigation. Methods and techniques of root canal irrigation Gutta-percha application. Smear layer remove. One session endodontic treatment.			
12.	Course methodology			
13.	Total time available:		68 hours	
14.	Time allocation:			
15.	Instructional activities	15.1.	Lectures- theoretical classes	12 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	36 hours
16.	Other activities	16.1.	Projects	4hours
		16.2.	Individual assignments	4hours
		16.3.	Independent study	12hours
17.	Assessment			

	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: oral and written)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Ivona Kovacevska	Authorized lectures		
		2.	Odjaklieva S.	Clinical endodontics	Skopje	2009
		3.	Bergenholtz G.	Textbook of Endodontology	Second Edition	2010
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Tronstad L.	Clinical endodontics	Danubius Dental - Belgrade	2005
		2.	Ботущанов	Endodontia	Plovdiv	2000
		3.	Ingle I. J.	Endodontics	Fifth edition on line	2002

Course description - first, second and third cycle of study		
1.	Course title	Gnathology
2.	Code	3MF149912
3.	Programme of study	Dental medicine

4.	Organizer of the study programme(unit/ institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	III / I	7.	Number of ECTS credits	4
8.	Instructor	Prof.Dr. Dragoljub Veleski			
9.	Course prerequisites	Enrolled third year			
10.	Course objectives Technical part of making and adaptating apparatus that will provide the planned formation of the maxillary bones.				
11.	Course content <u>Theoretical instruction</u> - Introduction to gnathology, objectives and targets. - Gnathological aspects of occlusion - Components of occlusion. - Occlusion and articulation. Mandibular border movements. - Physiological resting and central occlusion. - Articulators.Facial arc. - Functional analysis of the stomatognatic system. - Prerequisites for providing optimal occlusal conditions. - Functions of the stomatognatic system. - Obstacles and irregularities in function of the stomatognatic system. - Treatment of obstacles and irregularities in function of the stomatognatic system. - Procedures of selectively scraping -modern occlusal schemes <u>Practical instruction</u> - Occlusal principles and gnathological concepts. - Terminology of guidance (Aufwachstechnik) - Modeling teeth after gnathological concept. - Modeling the lower outer bridge. - Modeling the cliffs of bucal tubers. - Reduction of the wax model for faseting acrylate. - Modeling the upper frontal bridge. - Modeling of the outer bridge in the upper jaw. - Position cones of palatal and bucal tubers. - Fine modeling. - Modeling teeth after gnathological concept - freedom in occlusion.				
12.	Course methodology Lectures, preclinical laboratory exercises, consultations.				
13.	Total time available:				
14.	Time allocation:		2+1+1		
15.	Instructional activities	15.1.	Lectures – theoretical classes		24 hours

		15.2.	Practice (laboratory, auditory) seminars, team work	12 hours
16.	Other activities	16.1.	Projects	3 hours
		16.2.	Individual assignments	3 hours
		16.3.	Independent study	6 hours

17.	Assessment		
	17.1.	Tests	40 points
	17.2.	Seminar paper/project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	10 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Ljuben N. Guguvcevski	Okluzija	Skopje	1997
		2.	Miroslav Suvin	Okluzija u stomatoloshkoj protetici	Zagreb	1991
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Filipovic V. et all	Endodoncija	Belgrad	2002

Course description - first, second and third cycle of study		
1.	Course title	Internal Medicine
2.	Code	
3.	Programme of study	Dental medicine

4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences				
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	Third / first	7.	Number of ECTS credits	6	
8.	Instructor	Assoc. Prof. Stefan Talevski Assoc. Prof. Marija Vavlukis				
9.	Course prerequisites	passed Pathology and Pathophysiology				
10.	Course objectives • To acquire knowledge of Internal diseases, targeting the most frequent diseases (clinical characteristics, diagnosis and treatment)					
11.	Course content • Diseases and disorders of the cardiovascular system (2 units) • Respiratory diseases (2 units) • Rheumatology (selected chapters) • Diseases and disorders of the urinary system (2 units) • Diseases of the gastrointestinal system and specific care (2 units) • Haematology (2 units) • Endocrinology - selected chapters (2 units) • Health care in poisoning					
12.	Course methodology Interactive lectures, practical classes, project work					
13.	Total time available:	152 hours				
14.	Time allocation:	45 hours + 30 hours+12 hours+65 hours				
15.	Instructional activities	15.1.	Lectures - theoretical classes	3 hours/ per week		
		15.2.	Practice (laboratory, auditory) seminars, team work	2 hours/ per week		
16.	Other activities	16.1.	Projects	1 hours		
		16.2.	Individual assignments	0 hours		
		16.3.	Independent study	4.3 hours		
17.	Assessment					
	17.1.	Attendance	maximum10 points			
	17.2	Exercises and activities	maximum 10 points			
	17.3	Exams	maximum 2 x 20 point			
	17.4.	Seminar paper / project (presentation: written and oral) optional	maximum 10 points			
	17.5	Practical exams	maximum 10 points			

	17.6	Final exam	maximum 30 points
18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Vladimir Serafomovski et all	Internal Medicine	Macedonian Treasure Kumanovo	2003
		2.	Charles Forbs, William Jackson	Clinical Medicine (Atlas), Third edition	"Magar" Skopje	2012
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Marija Vavlukis Maja Milovancheva -Popovska Stefan Talevski	Authorized lectures		

Course description - first, second and third cycle of study					
1.	Course title	Introduction to infectious diseases			
2.	Code				
3.	Programme of study	Dental Medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Third / I	7.	Number of ECTS credits	3
8.	Instructor	Assoc. Prof. Velo Markovski			

9.	Course prerequisites	None		
10.	Course objectives To gain knowledge of general infectology, infectious agents, protection from infections and infectious diseases, immune response to an infection, diagnosis and treatment of infectious disease, the most important syndromes in infectology, intestinal infections and viral hepatitis.			
11.	Course content <u>Theoretical instruction</u> 1. Infection, infectious disease (basic features), temperature, types and regulation 2. Immunology in infectious diseases 3. Basic principles of diagnosis, treatment and prevention of infectious diseases 4. The most important syndromes in infectology 5. Etiology, epidemiology and significance of gastrointestinal infections 6. Infectious diseases of upper respiratory tract 7. Infectious diseases of lung 8. Syndrome of rised bilirubin and Viral hepatitis 9. Infectious diseases in central nervous sistem 10. Zoonozes 11. HIV/AIDS 12. Herpes and viral infections with rash <u>Practical instruction</u> 1. Introduction to documentation for infectious disease patients 2. Examination protocol for infectious disease patients 3. Introduction to laboratory, microbiology and diagnostic procedures 4. Lumbar punction 5. Treating of juandiced sindrome 6. Treating of meningeal sindrome 7. Treating of zoonozes 8. Treating of mononucleosis and infective rashes 9. Treating of respiratory infections 10. Emergency situations in infective diseases 11. Prophylaxis and vaccination			
12.	Course methodology			
13.	Total time available:	60		
14.	Time allocation:	1+1 / per week		
15.	Instructional activities	15.1.	Lectures- theoretical classes	15
		15.2.	Practice (laboratory, auditory) seminars, team work	15
16.	Other activities	16.1.	Projects	10 hours
		16.2.	Individual assignments	10 hours

		16.3.	Independent study	10 hours
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Velo Markovski	Authorized lectures	University of "Goce Delcev" - Stip	
		2.	Group of autors	Selected items: Infective diseases	Faculty of Medical Sciences-Skopje	
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Fran Mihaljevic Josip Falishevac	Infectology	Faculty of Medical Sciences-Zagreb	

Course description - first, second and third cycle of study		
1.	Course title	Dermatovenerology
2.	Code	3MF106312
3.	Programme of study	Dental Medicine

<table>
<tr><td>4.</td><td>Organizer of the study programme(unit/ institute, department)</td><td colspan="4">University Goce Delcev
Faculty of Medical Sciences</td></tr>
<tr><td>5.</td><td>Level of study (first, second, third cycle)</td><td colspan="4">Integrated studies of first and second cycle</td></tr>
<tr><td>6.</td><td>Academic year / semester</td><td>III / I</td><td>7.</td><td>Number of ECTS credits</td><td>3</td></tr>
<tr><td>8.</td><td>Instructor</td><td colspan="4">Prof. Dr. Vesna Grivceva-Panova</td></tr>
<tr><td>9.</td><td>Course prerequisites</td><td colspan="4">passed Pathology and Pathophysiology</td></tr>
<tr><td>10.</td><td colspan="5">Course objectives
To acquire knowledge of skin and venereal diseases, targeting the most frequent diseases (clinical characteristics, diagnosis and treatment)</td></tr>
<tr><td>11.</td><td colspan="5">Course content
<u>Theoretical instruction</u>
- Basic principles of dermatological diagnosis
- Viral, bacterial and rickettsial diseases of the skin and mucosa
- Sexually transmitted diseases of skin and mucosa
- Protozoan and fungal diseases of the skin and mucosa
- Diseases caused by arthropods and worms with skin manifestations
- Urticaria, angioedema and anaphylaxis, skin manifestations in response to drugs
- Erythema-papules-squamous disease, Bullous dermatoses, Pustulous diseases
- Keratinization disorders, connective tissue disorders
- Pruritus, prurigo and neuro-psychiatric disorders
- Pigmentation disorders, benign and malignant tumors of the skin
- Disorders of hair and nails
- Venerologycal diseases of male and female sex organs

<u>Practical instruction</u>
- Bacterial dermatoses; Mikobakteriosis, tropical dermatoses; Granulomatous dermatosis with unknown etiology.
- Sexually transmitted infections
- Viral, fungal and parasitic dermatoses
- Erithemosquamous dermatoses
- Allergic diseases and reactive skin, specially shaped erythema
- Bullous dermatoses
- Genodermatous, Photodermatous, pigmentation disorders, diseases
- Pilosebaceal unit
- Benign skin tumors and naevi, precancerous and malignant skin tumors
- Diseases of hair and nails
- Phlebology
- Dismetabol dermatoses, Psyhodermatology</td></tr>
<tr><td>12.</td><td colspan="5">Course methodology
Theoretically interactive lectures, supervised practical exercises with patients, individual mentored project assignments (papers), research, and practice in outpatient polyclinic, clinical hospital setting.</td></tr>
<tr><td>13.</td><td>Total time available:</td><td colspan="4">3 ECTS x 30 h = 90 hours</td></tr>
<tr><td>14.</td><td>Time allocation:</td><td colspan="4">30+15+15+10+20 = 90 hours</td></tr>
</table>

15.	Instructional activities	15.1.	Lectures - theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	20 hours
		16.3.	Independent study	30 hours

17.	Assessment		
	17.1.	Attendance	maximum10 points
	17.2	Exercises and activities	maximum 10 points
	17.3	Exams	maximum 2 x 20 point
	17.4.	Seminar paper / project (presentation: written and oral) optional	maximum 10 points
	17.5	Practical exams	maximum 10 points
	17.6	Final exam	maximum 30 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	D. M. Thappa	Dermatology, Venereology and Leprology	Elsevier	2005
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study		
1.	Course title	Neurology and psychiatry
2.	Code	3MF108912

3.	Programme of study	Dental medicine				
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences				
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	III / I	7.	Number of ECTS credits	3	
8.	Instructor	Assoc. Prof. Anita Arsovska				
9.	Course prerequisites	None				
10.	Course objectives To get acquainted with the neurological and psychiatric diseases, etiopathogenesis, clinical picture, diagnosis and treatment					
11.	Course content 1. Neurological history and status 2. Cranial nerves. Reflexes. Sensibility.Motility. 3. Piramidal and extrapiramidal syndrom. 4. Diseases and disorders of the muscular system and spine 5. Cerebrovascular diseases 6. Neuroimmunology. Diseases of the neuromuscular synapse. 7. Neurodegenerative diseases. 8. Diagnostic methods used in neurology 9. Personality and mood disorders 10. Psychosis 11.Addiction disorders					
12.	Course methodology Lectures, consultations					
13.	Total time available:	30+30+15				
14.	Time allocation:	/ per week				
15.	Instructional activities	15.1.	Lectures- theoretical classes	24 hours		
		15.2.	Practice (laboratory, auditory) seminars, team work	24hours		
16.	Other activities	16.1.	Projects	4hours		
		16.2.	Individual assignments	4hours		
		16.3.	Independent study	10hours		
17.	Assessment					
	17.1.	Tests	70 points			
	17.2.	Seminar paper / project (presentation: written and oral)	10 points			
	17.3.	Attendance and participation	20 points			

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Arsovska A et al.	Ucebnik po nevrologija	UGD	2013
		2.	Arsovska A et al.	Ucebnik po prakticna nastava po nevrologija	UGD	2013
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Arsovska A	Authorized lectures in psychiatry		2013

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

THIRD YEAR – SECOND SEMESTER

Course description - first, second and third cycle of study		
1.	Course title	General surgery
2.	Code	3MF103212
3.	Programme of study	Dental Medicine

<table>
<tr><td>4.</td><td>Organizer of the study programme(unit/ institute, department)</td><td colspan="4">Faculty of Medical Sciences</td></tr>
<tr><td>5.</td><td>Level of study (first, second, third cycle)</td><td colspan="4">Integrated studies of first and second cycle</td></tr>
<tr><td>6.</td><td>Academic year / semester</td><td>Third / second</td><td>7.</td><td>Number of ECTS credits</td><td>5</td></tr>
<tr><td>8.</td><td>Instructor</td><td colspan="4">Prof. Dr. Andreja Arsovski, Acad. Zhivko Popovski</td></tr>
<tr><td>9.</td><td>Course prerequisites</td><td colspan="4">Enrolled third year</td></tr>
<tr><td>10.</td><td colspan="5">Course objectives
During the course students will learn the basic concepts, principles, laws and terminology in general surgery and combine knowledge of general surgery with examples from medicine.</td></tr>
<tr><td>11.</td><td colspan="5">Course content
<u>Theoretical instruction</u>
1. History of surgery
2. Diagnostical methods and introduction to clinical surgery
3. Principals of asepsis and antisepsis
4. Types of injures (triage, basic reanimation, haemostasis)
5. Abdominal surgery (acute surgical diseases , inflammatory diseases , cancer, abdominal trauma) ;
6. Thoracic Surgery (congenital anomalies , diseases of pleura , lung diseases , diseases of the breasts) ;
7. Pediatric surgery (acute in child surgery , congenital anomalies in children after treatment systems , pediatric trauma)
8. Vascular surgery (acute vascular occlusions , chronic vascular occlusions , vein disease diagnostics and treatment) ;
9. Traumatology (types of fractures of systems , classification and treatment)
10. Plastic surgery (skin injuries , skin defects and treatment - chunk, transplant , hand injuries , soft tissue infections) ;
11. Urology (external diseases of urogenital system , diseases of the bladder , prostate diseases and diseases of the kidney and suprarenal gland) ;
12. Neurosurgery (craniocerebral injuries , bleeding , congenital anomalies in children , tumors , hydrocephalus) ;
<u>Practical instruction</u>
1. Examination of surgical patient (history , status by systems , local status) ;
2. Physical examination of surgically ill patient (inspection , palpation and percussion , auscultation) ;
3. Types of palpation and their clinical application ;
4. Running a surgical patient and refering before colleagues ;
5. Visit the surgical clinic ;
6. Visit thesurgical room for small surgical interventions ;
7. Visit the surgical room and actively or passively participating in the surgical procedure
8. Students become familiar with the basic principles of surgical work , assistance, instruments ;</td></tr>
</table>

	9. Visit the Center for Resuscitation ;			
12.	Course methodology <u>Theoretical instruction</u> - Interactive teaching: Lectures in large groups and discussions with students. - Multimedia teaching. - E-learning. - Individual consultations with students and consultations in groups. <u>Practical instruction</u> - Practical laboratory exercises in small groups. - Theoretical discussion about experiments. - Final practical work.			
13.	Total time available:		5 ECTS x 30 h = 150 hours	
14.	Time allocation:		30+30+15+15+60 = 150 hours	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	30 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	15 hours
		16.3.	Independent study	60 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: oral and written)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading System	to 50points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Milan Dragovic, Zoran grezic	General Surgery	Medicinska knjiga	1998

	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study					
1.	Course title	Dental roentgenology			
2.	Code	3MF154312			
3.	Programme of study	Dental medicine			
4.	Organiser of the study prorgramme (unit/ institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Third/second	7.	Number of ECTS credits	4
8.	Instructor	Prof. Dr. Tane Markoski			
9.	Course prerequisites				
10.	Course objectives Indications and contraindications for X-ray filming. Roentgenological anatomy of maxillo-facial region. Pathological conditions.				
11.	Course content <u>Theoretical instruction</u> - Physical characteristics of X-rays - X-ray anatomy - Types of filming in maxilo- facial region - Teeth X-ray filming - Roentgenological anatomy, abnormalities in tooth development - Caries and periodontal disease - Impacted teeth -Odontogenic infections - Resorptive processes, traumatic dental injuries. - Bone Roentgenological techniques of recording - Roentgenology of salivary glands, imaging, disease of the salivary glands - Foreign bodies in the area of the teeth and jaws <u>Practical instruction</u> - Physical characteristics of X-rays - X-ray anatomy - types of filming in maxilo- facial region - Teeth X-ray filming - Roentgenological anatomy, abnormalities in tooth development				

	- Caries and periodontal disease - Impacted teeth -Odontogenic infections - Resorptive processes, traumatic dental injuries. - Bone Roentgenological techniques of recording - Roentgenology of salivary glands, imaging, disease of the salivary glands - Foreign bodies in the area of the teeth and jaws			
12.	Course methodology Lectures, preclinical laboratory exercises, consultations.			
13.	Total time available:		4 KTSx 30 hours=120	
14.	Time allocation:		30+15+30+15+30=120	
15.	Instructional activities	15.1.	Lectures – theoretical classes	30 hours
		15.2.	Pactice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	30 hours
		16.2.	Individual assignments	15 hours
		16.3.	Independent study	30 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: written and oral)	20 points
	17.3.	Attendance and participation	10 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluaton	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Tane Markoski	Authorized lectures		

		2.	Peterson	Principles of oral and maxillofacial surgery		
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Kavas H. Thunthi	Dental Radiographic Diagnosis		

Course description - first, second and third cycle of study					
1.	Course title	Preclinical fixed prosthodonics 2			
2.	Code	3MF149512			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Third/second	7.	Number of ECTS credits	4
8.	Instructor	Assoc. Prof. Gigovski Nikola			
9.	Course prerequisites	Enrolment in third year			
10.	Course objectives Making dental bridges (indications, division, preparations of dental nog, modeling of bridge construction, metal ceramics, rehearsal, finalization)				
11.	Course content <u>Theoretical instruction</u> 1. Dental bridges - biological bases 2. Parts of the bridge - the bridge role 3. Division of bridges 4. Prediction of future changes that would have occurred under the bridge and body of periodontium 5. Biomechanics - static of bridges 6. Indications and contraindications for making various types of bridges 7. Alternative bridge solutions 8. Stages in making metal ceramic crowns and bridges 9. Making temporary crowns and bridges 10. Errors in making bridges 11. Definite procedures in making of bridges				

	Practical instruction **1** Analysis of models, making a plan for making a dental bridge **2** Constituents of the bridge and its role **3** Changes occurring in periodontal tissues while wearing bridge constructions **4** Division of bridges **5** Determination of the number of carriers and members of the bridge **6** Modeling of bridge carriers frontal region **7** Modeling of members of the bridge construction in frontal region **8** Modeling carriers of bridge construction in lateral region **9** Modeling of members of the bridge construction in the lateral region **10** Shifting and venture of bridges constructions **11** Processing and adaptation of the bridge construction **12** Faseting of the bridge construction			
12.	Course methodology Lectures, exercises in laboratory, consultations.			
13.	Total time available:		4 KTSx30 hours=120	
14.	Time allocation:		15+45+15+15+30=120	
15.	Instructional activities	15.1.	Lectures- theoretical classes	15 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	45 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	15 hours
		16.3.	Independent study	30 hours
17.	Assessment			
	17.1.	Tests		40 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		10 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)		
20.	Language of instruction	Macedonian		
21.	Course evaluation	Self-evaluation Stusent evaluation		

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Mercev E.	Preclinical fixed prosthodonics	Faculty of dentistry, Skopje	2001
		2.	Trifuovic D, Vujosevic	Dental prosthodontics-fixed upgrades	Europian centre for piece and development , Beograd	1998
		3.	Radulovic-Pantelic	Dental prosthodontics-fixed upgrades second part	Zavod za graficku tehniku, Tehnolosko-Metalurskog fakulteta , Beograd	1998
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

Course description - first,second and third cycle of study					
1.	Course title	Clinical cariology 1			
2.	Code	3MF108212			
3.	Programme of study	Dental medicine			
4.	Organizer of the study program(unit/institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Third / second	7.	Number of ECTS credits	4
8.	Instructor	Assoc. Prof. Ivona Kovacevska			
9.	Course prerequisites	Enrolled lll year of study and listened to Preclinical cariology			
10.	Course objectives Acquiring knowledge for clinical diagnostic and therapeutic procedures of diseases of the hard dental tissues.				

<table>
<tr><td>11.</td><td colspan="4">Course content
<u>Theoretical instruction</u>
1. Introduction, the practice's dental workplace, equipment, instruments, disinfection and sterilization.
2. Caries, etiologyl, pathogenesis, diagnostic methods for determining caries.
3. Mechanical and manual removal of caries. Instruments, atraumatical work.
4. Preparation of cavities 1 and 5 class, topography, nomenclature.
5. Preparation of cavities 2 and MOD class, topographic features, nomenclature, specifics.
6. Preparation of cavities 3 and 4 class, specifics. Preparations of atypical places.
7. Caries therapy with definitive restorations. Temporary and permanent restorative materials. Indications
8. Interdentally space, matrices, dry work area, mats and indifferent liners.
9. Amalgam restorations, clinical application, condensing, polishing.
10. Dental athesivs systems, indications, clinical application.
11. Composite restorations, indications, techniques, clinical application
12. Preparations for casting or porcelain fillings
<u>Practical instruction</u>
1. Workplace and equipment in clinical office. Materials, sterilization and disinfection of instruments.
2. History, examination, diagnosis of dental caries.
3. First class preparations of Black.
4. Preparation of cavities II class, stages of preparations, walls nomenclature.
5. Preparation of cavities class V and VI, IV class specifics of these cavities.
6. Preparation of MOD cavities, prevention.
7. Mechanical and manual removal of caries, work.
8. Treatment of caries by setting the definitive restorations.
9. Treatment and temporarily closing cavites.
10. Matrices, holders, indications for use, isolation of work area.
11. Application of adhesive and composite resins.
12. Preparations for casting recharges.</td></tr>
<tr><td>12.</td><td colspan="4">Learning methods:</td></tr>
<tr><td>13.</td><td colspan="2">Total time available:</td><td colspan="2">4 KTS x30=120</td></tr>
<tr><td>14.</td><td colspan="2">Time allocation:</td><td colspan="2">15+45+15+15+30=120</td></tr>
<tr><td rowspan="2">15.</td><td rowspan="2">Instructional activities</td><td>15.1.</td><td>Lectures- theoretical classes</td><td>15 hours</td></tr>
<tr><td>15.2.</td><td>Practice (laboratory, auditory) seminars, team work</td><td>45 hours</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Other activities</td><td>16.1.</td><td>Projects</td><td>15 hours</td></tr>
<tr><td>16.2.</td><td>Individual assignments</td><td>15 hours</td></tr>
<tr><td>16.3.</td><td>Independent study</td><td>30 hours</td></tr>
<tr><td>17.</td><td colspan="4">Assessment</td></tr>
</table>

	17.1.	Tests	20 points
	17.2.	Seminar paper/project (presentation: oral and written)	10 points
	17.3.	Attendance and participation	7 points

18.	Grading system	to 50points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22. Literature

22.1. Required materials

Ordinal number	Author	Title	Publisher	Year
1.	James B. Summitt at all.	Fundamentals of operative dentistry: a contemporary approach.	Quintessence publishing co. ink	2006
2.	E.A.M. Kid, B.G.N. Smit, and T.F. Votson H.M. Picard	Picard's manual of operative dentistry	Oxford University Press	2003
3.	A.DamienWalmsley, at all.	Restorative dentistry	Elsevier limited	2007

22.2. Supplementary materials

Ordinal number	Author	Title	Publisher	Year
1.	Šutalo J.	Pathology and therapy of tooth structure	NakladaZadro	1993
2.	Ivona Kovacevska	Authorized lectures		
3.				

Course description - first, second and third cycle of study		
1.	Course title	Preventive dentistry
2.	Code	3MF120412

3.	Programme of study	Dental medicine				
4.	Organizer of the study programme (unit/ institute, department)	Faculty of Medical Sciences				
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	Third / second	7.	Number of ECTS credits	3	
8.	Instructor	Assoc. Prof. Zlatko Georgiev				
9.	Course prerequisites	Enrolled sixth semester				
10.	Course objectives Acquiring basic knowledge of the modern preventive dentistry.					
11.	Course content <u>Theoretical instruction</u> Preventive Dentistry - Introduction, Social significance of oral diseases, Contemporary understanding of the pathogenesis of dental caries. Dental plaque. Mechanical and chemical control of dental plaque. Fluoride caries prophylaxis. Fissure sealing and cavities. Caries activity. Indices of oral hygiene. Cariogenic potential food. Prevention of the emergence of parodontopathy. Interceptive dentistry - prevention of the emergence of dental-jaw anomalies. . Programme preventive dental care. School dental care. Promoting oral health - health education. <u>Practical instruction</u> Preventive Dentistry - Introduction, Social significance of oral diseases, Contemporary understanding of the pathogenesis of dental caries. Dental plaque. Mechanical and chemical control of dental plaque. Fluoride caries prophylaxis. Fissure sealing and cavities. Caries activity. Indices of oral hygiene. Cariogenic potential food. Prevention of the emergence of parodontopathy. Interceptive dentistry - prevention of the emergence of dental-jaw anomalies. . Programme preventive dental care. School dental care. Promoting oral health - health education.					
12.	Course methodology Interactive instruction (theoretical), work in small groups (exercises), and other forms provided by the common criteria of the ECTS					
13.	Total time available:	3EKTS X30 =90				
14.	Time allocation:	30+15+30+5+25=90				
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours		

		15.2.	Practice(laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	30 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	25 hours

17.	Assessment		
	17.1.	Tests	65 points
	17.2.	Seminar paper/project (presentation: oral and written)	20 points
	17.3.	Attendance and participation	15 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22. Literature:

22.1. Required materials

Ordinal number	Author	Title	Publisher	Year
1.	Carcev M	Preventive dentistry	NUB Skopje	2006.
2.	Vulović M at all	Preventive dentistry	Elit-Medica Beograd	2002
3.	Murray J, Nunn J, Steele J.	Prevention of oral disease.	Oxford University Press	2003

22.2. Supplementary materials

Ordinal number	Author	Title	Publisher	Year
1.	Z. Georgiev	Authorized lectures		

Course description - first, second and third cycle of study					
1.	Course title	Otorhinolaryngology			
2.	Code	3MF116912			
3.	Programme of study	Dental Medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Third/second	7.	Number of ECTS credits	3
8.	Instructor	Assoc. Prof. Marina Davceva Cakar			
9.	Course prerequisites				
10.	Course objectives To familiarize students with the basic elements of diagnosis, therapy and prophylaxis of Otorhinolaryngology.				
11.	Course content <u>Theoretical instruction</u> 1. Introduction, basic terms in ORL. 2. Physiology of hearing and hearing aid. 3. Disorders of the vestibular apparatus. 4. Congenital deafness. Presbiacuzy. 5. Paralysis of n. facialis. 6. Ear infections. 7. Paranazal sinus - symptoms, diagnosis and treatment of diseases. 8. Benign and malignant diseases of the salivary glands. 9. Carcinoma of the oral cavity and pharynx. 10. Diseases of the larynx and vocal cords. 11. Cancer of the larynx. 12. Injuries of the upper airway. <u>Practical instruction</u> 1. Review of patient with disease of the organ of hearing and balance. 2. Audiometry. 3. Presentation of case Menier syndrome. 4. Presentation of case with secondary infection of the ear. 5. Presentation of congenital deafness. 6. Review of patient with disease of the upper respiratory tract, oral cavity and larynx. 7. Presentation of case with chronic sinusitis. Ozena 8. Presentation of case with neoplasm of saliva glands. 9. Presentation of case with benign polyps of the vocal cords. 10. Presentation of case with cancer of the larynx. 11. Presentation of the patient with obstruction of the airway with foreign body. 12. Presentation of case with Bell's paralysis.				

12.	Course methodology Theoretical lectures, practical exercises, seminar papers, individual presentation;			
13.	Total time available:		3ECTS x 30 h = 90 hours	
14.	Time allocation:		30+15+15+5+25 = 90 hours	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	25 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: oral and written)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading System	to 50points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Kosanovic M.	Otorhinolaryngology	Thieme	2007
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study		
1.	Course title	Introduction to dentofacial orthopedics
2.	Code	3MF1500012
3.	Programme of study	Dental medicine

4.	Organizer of the study programme(unit/ institute, department)	Faculty of Medical Sciences				
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	Third/second	7.	Number of ECTS credits	4	
8.	Instructor	Assoc. Prof. Stipica Popovski				
9.	Course prerequisites					
10.	Course objectives Student to learn the content and gain knowledge in the field of orthodontics.					
11.	Course content <u>Theoretical instruction</u> 1. Spilling models 2. Socling models 3. Marking teeth 4. Introduction to orthodontic card 5. Determination of the amount of the dental arch and palate height 6. Determine the front and rear width 7. Analysis by Moyers and analysis by Bolton 8. Determine the over jet and over bite 9. Irregularities in the sagittal 10. Irregularities in the transversal 11. Irregularities in the vertical 12. Therapy <u>Practical instruction</u> 1. Spillng models 2. Sokling models 3. Marking Teeth 4. Introduction to orthodontic card 5. Determination of the amount of the dental arch and palate height 6. Determine the front and rear width 7. Analysis by Moyers and analysis by Bolton 8. Determine the over jet and over bite 9. Irregularities in the sagittal 10. Irregularities in the transversal 11. Irregularities in the vertical 12. Therapy					
12.	Course methodology					
13.	Total time available:	4 KTSx30 hours=120				
14.	Time allocation:	30+15+30+5+40=120				
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours		
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours		
16.	Other activities	16.1.	Projects	30 hours		

		16.2.	Individual assignments	5 hours
		16.3.	Independent study	40 hours

17.	Assessment		
	17.1.	Tests	20 points
	17.2.	Seminar paper / project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	7 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Markovic M. et all	Orthodontics	Medicinska knjiga, Beograd-Zagreb	1989
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	William R. Proffit, Raymond P. White, David M. Sarver	Contemporary Treatment of Dentofacial Deformity	Mosby, London	2003

FOURTH YEAR – FIRST SEMESTER

Course description - first, second and third cycle of study		
1.	Course title	Clinical mobile prosthodontics (complete denture)
2.	Code	3MF149212
3.	Programme of study	Dental medicine
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences Department of prosthodontics and dentofacial orthopaedics

5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Fourth/first semester	7.	Number of ECTS credits	6
8.	Instructor	ProF. Dr. Dragoljub Veleski			
9.	Course prerequisites	Enrolled third year			
10.	Course objectives Applied anatomy, histology and physiology in the orofacial region and the significance for treatment edentulous patients with total dentures. Preprosthetic preparing and making complete dentures.				
11.	Course content <u>Theoretical instruction</u> - Anatomy and physiology of orofacial system. - Dental anthropology. - Changes after complete loss of teeth. - Diagnosis, planning, preparing and treatment of the edentulous. - Impressions and interjaw relations. - Dental articulators and face bows. - Teeth selection and setting. - Occlusal schemes. - Fit of dentures and follow-up, instructions how to use them and maintenance. - Immediate dentures. - Single complete dentures. - Laboratory procedures and repairs. <u>Practical instruction</u> - Anatomy and physiology of orofacial system. - Dental anthropology. - Changes after total loss of teeth. - Diagnosis, planning, preparing and treatment of the edentulous. - Impressions and interjaw relations. - Dental articulators and facebows. - Teeth selection and setting. - Occlusal schemes. - Fit of dentures and follow-up, instructions how to use them and maintenance. - Immediate dentures. - Single complete dentures. - Laboratory procedures and repair				
12.	Course methodology Lectures, auditoria exercises, consultations.				
13.	Total time available:	6ECTS X 30h=180			
14.	Time allocation:	30+75+15+15+45=180			
15.	Instructional activities	15.1.	Lectures- theoretical classes	30hours	
		15.2.	Practice (laboratory, auditory) seminars, team work	75 hours	
16.	Other activities	16.1.	Projects	15 hours	

		16.2.	Individual assignments	15 hours
		16.3.	Independent study	45 hours

17.	Assessment		
	17.1.	Tests	(20+20+30)=70 points
	17.2.	Seminar paper / project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Ljuben N. Gugucevski , Krste Dejanovski, Dragoljub Velevski	Klinika na totalnoto proteziranje	Skopje	2004
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Petrovic A. et all.	Total Denture	Belgrad	1985
		2.	Suvin	Total Denture	Zagreb	1982
		3	Sokolovic	Total denture	Nis	1978

Course description - first, second and third cycle of study

1.	Course title	Clinical cariology 2
2.	Code	3MF160212
3.	Programme of study	Dental Medicine
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle

<table>
<tr><td>6.</td><td>Academic year / semester</td><td>Fourth/first semester</td><td>7.</td><td>Number of ECTS credits</td><td>6</td></tr>
<tr><td>8.</td><td>Instructor</td><td colspan="4">Assoc. Prof. Ivona Kovacevska</td></tr>
<tr><td>9.</td><td>Course prerequisites</td><td colspan="4">Enrolled fourth year of studies</td></tr>
<tr><td>10.</td><td colspan="5">Course objectives
Everyday clinical procedures in restorative dentistry to be studied theoretically and practically realized and overcame.</td></tr>
<tr><td>11.</td><td colspan="5">Course content
<u>Theoretical instruction</u>
1. Methods and materials for the preparation of inlays.
2. Restorations of endodontic treated teeth. Rehabilitation of destroyed dental surfaces.
3. Functional damages to the teeth - diagnosis and therapy.
4. Structural anomalies of dental tissues - diagnosis and therapy.
5. Non caries changes in dental tissues - diagnosis and therapy.
6. Diagnosis, therapeutic approach and rehabilitation for trauma and fractures in the crown of the teeth.
7. Deep caries lesions - etiologic, diagnosis and therapy.
8. Modern - minimally invasive techniques of teeth preparations.
9. Treatment of caries defects with GJC, composite resins - techniques (open and closed sandwich method)
10. Procedures of restoration with parapulpal coins.
11. Highly aesthetic restorations - cad-cam, laminates.
12. Modern techniques and technologies in restorative clinical practice. Bleaching of teeth.
<u>Practical instruction</u>
Direct and indirect method of making inlay fillings.
Application and cementing inlays
Indirect pulp cover.
Direct pulp cover.
Reconstruction of destroyed, cavities.
Therapy and rehabilitation of endodontic treated teeth.
Non caries defects- diagnosis and therapy.
Dental treatment of functional impairment.
Clinical treatment of structural abnormalities of the hard dental tissues.
Preparing of laminates and veneers.
Minimally-invasive preparations and their therapy.
Methods for bleaching teeth.</td></tr>
<tr><td>12.</td><td colspan="5">Course methodology</td></tr>
<tr><td>13.</td><td colspan="2">Total time available:</td><td colspan="3">6ECTSx 30h= 180</td></tr>
<tr><td>14.</td><td colspan="2">Time allocation:</td><td colspan="3">30+75+15+15+45=180</td></tr>
<tr><td>15.</td><td>Instructional activities</td><td>15.1.</td><td>Lectures- theoretical classes</td><td colspan="2">30</td></tr>
<tr><td></td><td></td><td>15.2.</td><td>Practice (laboratory, auditory) seminars, team work</td><td colspan="2">75</td></tr>
<tr><td>16.</td><td>Other activities</td><td>16.1.</td><td>Projects</td><td colspan="2">15 hours</td></tr>
<tr><td></td><td></td><td>16.2.</td><td>Individual assignments</td><td colspan="2">15 hours</td></tr>
</table>

		16.3.	Independent study	45 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper / project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22. Literature

22.1. Required materials

Ordinal number	Author	Title	Publisher	Year
1.	James B. Summitt et all.	Fundamentals of operative dentistry: a contemporary approach.	Quintessence publishing co. ink	2006
2.	E.A.M. Kid, B.G.N. Smit, and T.F. Votson H.M. Picard	Picard's manual of operative dentistry	Oxford University Press	2003
3.	Ivona Kovacevska	Authorized lectures		

22.2. Supplementary materials

Ordinal number	Author	Title	Publisher	Year
1.	A.Damien Walmsley, at all.	Restorative dentistry	Elsevier limited	2007
2.	Šutalo J.	Patologija i terapija tvrdih zubnih tkiva	Naklada Zadro	1993
3.	Botusanov	Kariesologija I oprerativno zabolecenie	Plovdiv	2000

Course description - first, second and third cycle of study		
1.	Course title	Oral medicine and pathology 1

2.	Code	3MF160712				
3.	Programme of study	Dental Medicine				
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences				
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	Fourth /first semester	7.	Number of ECTS credits	5	
8.	Instructor	Prof. Dr. Minovska Ana				
9.	Course prerequisites	Enrolled fourth year				
10.	Course objectives To familiarize students with the anatomo-histological and physiological characteristics of the oral tissues, oral micro flora, basic pathological developments and morphs on oral mucosa, as well as the most common diseases of the lips, tongue and salivary glands.					
11.	Course content <u>Theoretical instruction</u> • Anatomo-histological features of the tissues of the oral cavity • Physiology of the organs of the oral cavity • Oral micro flora • Basic pathological processes in the oral cavity • Morphs in the oral cavity • Diseases of lips • Diseases of the tongue • Salivary pathology <u>Practical instruction</u> • Anatomo-histological features of the tissues of the oral cavity • Physiology of the organs of the oral cavity • Oral micro flora • Basic pathological processes in the oral cavity • Morphas in the oral cavity • Anamnestic procedure • Clinical examination • Paraclinical examinations • Differential and final diagnosis • Therapy in oral pathology					
12.	Course methodology Lectures, clinical practice, theoretical exercises					
13.	Total time available:	5x30=150				
14.	Time allocation:	30+30+15+15+60=150				
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours		
		15.2.	Practice (laboratory, auditory) seminars, team work	30 hours		
16.	Other activities	16.1.	Projects	15hours		
		16.2.	Individual assignments	15hours		

		16.3.	Independent study	60hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper / project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Authorized lectures			
		2.	Belazelkovska Z.,Nakova M	Oralna Patologija	Stomatoloski fakultet Skopje	2003
		3.	Dimotrovski V.Popovska-Spasovska M.	Osnovi na oralnata propedeftika	Stomatoloski fakultet Skopje	2002
		4.	NakovaM.Popovska-Spasovska M	Dijagnostika na oralnite lezii – praktikum	Stomatoloski fakultet Skopje	2006
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Popovska – SpasovskaM. Dimotrovski V.Atanasovska Stojanovska A	Diferencijalna diojagnoza na pralnite lezii	Magnasken Skopje	2004
		2.	Dragoljub Đajić, Dragoslav Đukanović	Bolesti usta - oralna medicina - parodontologija	Elit - Medica	2008

Course description - first, second and third cycle of study		
1.	Course title	Preclinical oral surgery

2.	Code	3MF154512			
3.	Programme of study	Dental Medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences Department of oral and maxillofacial surgery and dental implantology			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	IV / I	7.	Number of ECTS credits	6
8.	Instructor	Assoc. Prof. Cena Dimova			
9.	Course prerequisites	Enrolled in fourth year of studies Listened and passed Preclinical endodontics and Clinical cariology 1.			
10.	Course objectives Applied anatomy in the orofacial region, local anesthesia, indications and contraindications of extractions, pathological conditions of the teeth and oral cavity.				
11.	Course content <u>Theoretical instruction</u> - Introduction to the subject oral surgery history. - Oral surgery propaedeutic (history and examination), preoperative evaluation of the patient (medical history). - Applied oral surgery anatomy (anatomy and morphological characteristics of the orofacial region: osteology, muscle, vasculature and innervation). - Principles of asepsis and antisepsis, disinfection and sterilization of instruments for exodontia. - Patient preparation for oral surgery intervention (premedication and painful procedure of acute and chronic systemic diseases). - Pain as oral surgical issue, - Dental and oral surgery instruments - Anesthesia and analgesia in dentistry and oral surgery, general anesthesia, anesthetics for general anesthesia, - Local anesthesia, anesthetics for local anesthesia, indications and contraindications, - Terminal infiltrative anesthesia in upper and lower jaw, - Conductive anesthesia in the upper jaw, - Conductive anesthesia in the lower jaw, - Complications in doing the local anesthetic, - Extraction, principles of exodontias, types of extractions (typical and atypical) - Indications and contraindications for tooth extraction - Instruments and techniques for extracting teeth in the upper jaw - Instruments and techniques for extracting teeth in the lower jaw - Instruments and techniques of extraction of deciduous teeth - Complications during extraction - Complications after extraction <u>Practical instruction</u> - Introduction to the subject oral surgery history - Anatomical and morphological features of orofacial region - Sterilization of instruments for exodontia - Instruments for the extraction of teeth and roots in the upper jaw				

	- Instruments for the extraction of teeth and roots in the lower jaw - Dental and oral surgery instruments - Terminal infiltrative anesthesia in upper and lower jaw, - Conductive anesthesia in the upper jaw, - Conductive anesthesia in the lower jaw, - Complications in doing the local anesthetic, - Extraction, principles of exodontias, types of extractions (typical and atypical) - Indications and contraindications for tooth extraction - Instruments and techniques for extracting teeth in the upper jaw - Instruments and techniques for extracting teeth in the lower jaw - Instruments and techniques of extraction of deciduous teeth - Complications during extraction - Complications after extraction			
12.	Course methodology Lectures, auditoria exercises, consultations.			
13.	Total time available:		6x30=180	
14.	Time allocation:		45+45+15+15+60=180	
15.	Instructional activities	15.1.	Lectures- theoretical classes	45hours
		15.2.	Practice (laboratory, auditory) seminars, team work	45 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	15 hours
		16.3.	Independent study	60 hours
17.	Assessment			
	17.1.	Tests		(20+20+30)=70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature	
	22.1.	Required materials

		Ordinal number	Author	Title	Publisher	Year
		1.	Markovic A.	Oral surgery	Nauka, Beograd	2004
		2.	Dabov T.	Oralnokirurški priručnik.	Medicinska naklada Zagreb	2009
		3.	Perovic, Jojic	Oral surgery	Naucna knjiga, Beograd	1997
		4.	Todorovic et al.	Oral surgery	Nauka, Beograd	2000
		5.	Mise I.	Oral surgery	Jumena, Zagreb	1998
		6.	Peterson	Principles of oral and maxillofacial surgery	Blackwell Science	2001
		7.	Peterson L.	Contemporary Oral and Maxillofacial Surgery, 3rd ed.,	Mosby	1998.
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Todorovic Lj.	Anesthesia in dentistry	Zavod za udzbenike, Zagreb	1990
		2.	Jovanovic, Lotric	Conduction anesthesia in the upper and lower jaw	Naucna knjiga, Beograd	1980
		3.	Perovic,	Haemostasis and its disorders in dental practice	Naucna knjiga, Beograd	1994

Course description - first, second and third cycle of study					
1.	Course title	Dentofacial orthopedics 1			
2.	Code	3MF150112			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study(first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	IV/first semestar	7.	Number of ECTS credits	5
8.	Instructor	Prof. Dr. Stipica Popovski			
9.	Course prerequisites				

10.	Course objectives To acquire basic knowledge of orthopedics of teeth and jaws.			
11.	Course content <u>Theoretical instruction</u> • Introduction to orthodontics • Definition for normal occlusion • Growth and development of craniofacial complex • Prenatal growth and development of craniofacial complex • Postnatal growth and development of craniofacial skeleton: neurocranium • Postnatal growth and development of craniofacial complex • Growth and development of normal occlusion • Anatomy , physiology and embryology of orofacial muscles and TMJ • Functions of the orofacial region • Orthodontic diagnosis, gnathometrical analysis, rtg and photography analysis • General etiological factors • Local etiological factors <u>Practical instruction</u> • Introduction to the plan and programme in practical teaching - Introduction to orthodontics • Sockling and forming of the study models • Gnathometric analysis of the study models • Classification of malocclusions • Fabrication of inclined plate • Fabrication of vestibular plate • Rtg diagnosis • Classification of malocclusions • Anomalies of dental arches • Examination and presentation of patient with anomalies in sagittal plane • Examination and presentation of patient with anomalies in transversal plane • Examination and presentation of patient with anomalies in vertical plane			
12.	Course methodology Lectures, preclinical laboratory exercises, consultations.			
13.	Total time available:		5x30=150	
14.	Time allocation:		30+30+15+15+60=150	
15.	Instructional activities	15.1.	Lectures – theoretical classes	30hours
		15.2.	Practice (laboratory, auditory) seminars, team work	30 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	15hours
		16.3.	Independent study	60hours
17.	Assessment			
	17.1.	Tests		40 points

	17.2.	Seminar paper/project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	10 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	William R. Proffit, Raymond P. White, David M. Sarver	Contemporary Treatment of DentofacialDeformity	Mosby, London	2003
		2.	Марковић М. et all	Orthodontics	Medical book, Beograd-Zagreb	1989
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

FOURTH YEAR – SECOND SEMESTER

Course description - first, second and third cycle of study					
1.	Course title	Preclinical periodontology			
2.	Code	3MF160912			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Fourth/ second	7.	Number of ECTS credits	3
8.	Instructor	Prof. Dr. Ana Minovska			
9.	Course prerequisites				
10.	Course objectives				

	Students to learn the basics of structure, histology and physiology of the supporting tissues of the tooth, to learn classification and epidemiology of the periodontal disease, as well about the aetiology of the periodontal diseases.			
11.	Course content <u>Theoretical instruction</u> • Introduction to periodontology • Gingiva • Cementum , periodontal ligament and alveolar bone • Classification of periodontal diseases • Epidemiology of periodontal diseases • Periodontal indices • Prevalence of periodontal diseases • Aetiology- dental plaque as a microbial biofilm • Aetiology-local participating factors • Aetiology-other predisposing factors • General factors connected with periodontal disease • Microorganisms connected with periodontal health and disease <u>Practical instruction</u> • Anatomy of periodontal tissues (the student is able to describe and schematic to show anatomical parts of periodontium) • Histology of periodontal tissues (the student is able to describe and identify in Atlas, histological features of periodontal tissues) • Etiology of periodontal disease (success in identification of dental plaque, the student has mastered the selection criteria for determining the index of dental plaque) • Classification of Peridontal disease • Periodontal examination - (gingival indices) • Diagnosis of periodontal disease: clinical test-probing • Instruments and techniques for processing of the hard wall on the periodontal pockets • Instruments and techniques for processing of the soft wall on the periodontal pocket • Medical history of patients with periodontal disease (first contact with patients, medical administration and connecting of the health data with periodontal health) • Dental history (individual working and connecting of the data with the periodontal disease) • Dental history 2 (individual working and connecting of the data with the periodontal disease) • Periodontal indices, X-ray diagnostics and work with patient			
12.	Course methodology Lectures, practice			
13.	Total time available:		3KTS x 30=90	
14.	Time allocation:		30+15+15+5+25=90	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	15 hours

		16.2.	Individual assignments	5 hours
		16.3.	Independent study	25hours

17.	Assessment		
	17.1.	Tests	40 points
	17.2.	Seminar paper / project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
		Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Minovska A.	Authorized lectures		
		2.	Newman MG, Takei HH, Carranza FA	Caranza's clinical periodontology	WB saunders Company , Philadelphia , New York; 9th edition	2001
		3.	Lindhe J, Karring T, Lang NP	Clinical periodontology and implantology	Globus, Zagreb	2004
		4.	Džajić, D., Đukanović, D.	Periodontology	Stomatološki fakultet Beograd	2006
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Minovska A.	Periodontopathia	Faculty of dentistry-Skopje	2008
		2.	Stavrevska Minovska Ana. Pandilova- Maja, Ivanovski Kiro	Oral Hygiene	Faculty of dentistry-Skopje	2005

Course description - first, second and third cycle of study					
1.	Course title	Clinical endodontics 1			
2.	Code	3MF160412			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Forurth/ second	7.	Number of ECTS credits	4
8.	Instructor	Assoc. Prof. Ivona Kovacevska			
9.	Course prerequisites	Enrolled IV year Listened to Clinical cariology 2 and Dental radiology			
10.	Course objectives To learn the theoretical and practical realizisation of: the diagnosis of pulp inflammatory diseases, mechanism, etiological moments and endodontic therapeutic procedure.				
11.	Course content <u>Theoretical instruction</u> Pulp and dentin complex. Classification of diseases. Ancillary diagnostic tools. Reversible pulp disorders - ethiology, pathogenesis, diagnosis, therapy. Serious acute inflammation of pulp - clinical symptoms, ethiology, pathogenesis, diagnosis. Purulent acute inflammation of pulp - clinical manifestations, ethiology, pathogenesis, diagnosis. Chronic inflammatory of pulp tissue - ethiology, pathogenesis and diagnosis. (Open) Chronic inflammatory of pulp tissue - ethiology, pathogenesis and diagnosis. (Closed) Endodontic therapy procedure of teeth with vital pulp - common tenets, methods and techniques. Morphology, topography, ergonomic access to the cavum pulpae. Manual techniques of root canal preparations. Medications and tools for root canal irrigation. Root canal obturation - materials and techniques. Techniques of gutta- percha obturation.Composite resin restorations, indications, techniques, clinical application <u>Practical instruction</u> Diagnosis and treatment of pulp hyperaemia. Diagnosis of acute inflammation of the pulp, providing first aid. Endodontic treatment - mortem method - application of medication indications and contraindications. Endodontic treatment - vital method - application of anaesthesia, indications and contraindications. Tooth morphology, topography, ergonomic access to the cavum pulpae. Removing of pulp tissue. Techniques for manual root canal preparations. Root canal irrigation.				

	Methods and techniques of endodontic obturation. Endodontic treatment of teeth with acute inflammation of the pulp (serous inflammation) Endodontic treatment of teeth with acute inflammation of the pulp (purulent inflammation) Endodontic treatment of teeth with chronically inflamed pulp.			
12.	Course methodology			
13.	Total time available:		4 KTS x 30=120	
14.	Time allocation:		15+60+15+5+25=120	
15.	Instructional activities	15.1.	Lectures- theoretical classes	15 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	60 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	5hours
		16.3.	Independent study	25 hours

17.	Assessment		
	17.1.	Tests	20 points
	17.2.	Seminar paper/project (presentation: oral and written)	10 points
	17.3.	Attendance and participation	7 points

18.	Grading system	to 50points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Ivona Kovacevska	Authorized lectures		
		2.	Odzaklievska	Clinical Endodontology	Skopje	2009
		3.	Bergenholtz G.	Textbook of Endodontology	Second Edition	2010
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Tronstad L.	Clinical endodontics	Danubius Dental - Belgrade	2005

		2.	Ботущанов	Endodontia	Plovdiv	2000
		3.	Ingle I. J.	Endodontics	Fifth edition on line	2002

Course description - first, second and third cycle of study						
1.	Course title	Oral medicine and pathology 2				
2.	Code	3MF160812				
3.	Programme of study	Dental medicine				
4.	Organizer of the study programme(unit/ institute, department)	Faculty of Medical Sciences				
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	Fourth/second	7.	Number of ECTS credits	4	
8.	Instructor	Prof. Dr. Minovska Ana				
9.	Course prerequisites	Passed Oral medicine and pathology 1				
10.	Course objectives To introduce students with the etiology, epidemiology, and clinical symptomatology, diagnosis and differentiation and treatment of most common diseases in the oral cavity.					
11.	Course content <u>Theoretical instruction</u> • Viral infections of the oral mucosa (Gingivostomatitis herpetica, Herpes simplex, Herpes zoster, Herpangina, Hand Foot Mouth disease) • HIV infection and oral changes • Nonspecific bacterial infection (Noma, Stomatitis ulceronecroticans, Stomatitis pseudomembranacea) • Specific bacterial infections (Tbc, Lues, Actinomycosis) • Skin diseases with oral changes (Erythema Exudativum Multiforme, Bechet's syndrome, Reiter syndrome, Steven Johnson syndrome) • Skin diseases with oral changes-vesivco-bulossus changes (PEMPHIGUS VULGARIS, PEMPHGOID, EPIDERMOLYSIS BULLOSA, LUPUS ERYTHEMATOSIS) • Light changes of the oral mucosa (Lichen planus, Candidomicosis oris, Soor) • Light changes of the oral mucosa (Leucoplacia, Papilloma, Verruca vulgaris) • Red-blue collored changes of the oral mucosa caused by allergic reactions (Plasma cell gingivitis , medical stomatitis, Contact stomatitis) • Changes on oral mucosa resulting from haematological disorders (anemias, coagulopathia, leucosis) • Extravascular changes of the oral mucosa as a consequence of heavy metal positioning (mercury, arsenic, bismuth, silver) • Oral changes caused by local trauma (mechanical, chemical, thermal) <u>Practical instruction</u> • Clinical observation of basic anatomical structures of the oral cavity and anamnestic procedure • Paraclinical diagnostic tests in oral pathology					

	• Introductory lecture: bright (white) changes of oral mucosa, Clinical practice: Processing of patient form history to the treatment plan • Introductory lecture: red and blue changed the oral mucosa; Clinical practice: processing of patient from history to the treatment plan • Introductory lecture: red and blue changed the oral mucosa; Clinical practice: processing of patient from history to treatment plan • Introductory lecture: pigmentation of the oral and periodontal tissues; Clinical practice: processing of patient from history to treatment plan • Introductory lecture: pigmentation of the oral and periodontal tissues ; Clinical practice: processing of patient from history to treatment plan • Introductory lecture: vesico-bullous diseases, Clinical practice: Processing of patient from history to treatment plan • Introductory lecture: vesico-bullous diseases Clinical practice: Processing of patient form history to treatment plan • Introductory lecture: ulcerative conditions; Clinical practice: Processing of patient from history to treatment plan • Introductory lecture: ulcerative conditions; Clinical practice : Processing of patient from history to treatment plan • Introductory lecture: Oral diseases associated with old age, clinical practice: Processing of patient from history to treatment plan			
12.	Course methodology Lectures, clinical practice, theoretical exercises			
13.	Total time available:		5 KTS x30=150	
14.	Time allocation:		30+30+15+15+60=150	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	30 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	15 hours
		16.3.	Independent study	60 hours
17.	Assessment			
	17.1.	Tests		40 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		10 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	

21.	Course evaluation	Self-evaluation

22.	Literature					
	22.1.	Required literature				
		Ordinal number	Author	Title	Publisher	Year
		1.	Minovska A.	Autorised lectures		
			Belazelkoska Z., nakova M.	Oral Pathology	Faculty of Dentistry, Skopje	2003
		2.	Dimitrovski V., Popovska-Spasovska M.	Fundamentals of oral propedevtics	Faculty of Dentistry, Skopje	2002
		3.	Nakova M., Popovska-Spasovska M.	Dijagnostics of orall lessions-practicum	Faculty of Dentistry, Skopje	2006
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Popovska-Spasovska M., Dimitrovski V., Atanasovska-Stojanovska A	Diferential diagnosis of oral lessions	Magnascen, Skopje	2004
		2.	Dragoljub Đajić, Dragoslav Đukanović	Oral Diseases -Oral medicine - Periodontology	Elit - Medica	2008

Course description - first, second and third cycle of study					
1.	Course title	Oral surgery 1			
2.	Code	3MF154612			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Fourth/ second	7.	Number of ECTS credits	5
8.	Instructor	Assoc. Prof. Cena Dimova			
9.	Course prerequisites	Enrolled in fourth year of studies Listened and passed Preclinical oral surgery.			
10.	Course objectives				

	Indications for extraction,diagnosis and differential diagnosis of diseases of the oral surgery, giving anesthesia in the oral cavity, to independently perform basic techniques of anesthesia in dentistry,tooth extractions, treatment of post-extraction complications, learning the basic methods of hemostasis, treatment of acute odontogenic infection, as well as an introduction to the therapeutic possibilities of modern dental surgery.			
11.	Course content <u>Theoretical instruction</u> - Introduction to the clinical part of oral surgery. Healing of wounds - Oralsurgery aspects in patients with risk - Bleeding, types, division and classification, diseases with hemorrhagic syndrome. - Hemostasis in oral surgery establish hemostasis in dentistry in healthy and sick people. - Application of radio graphical methods in oral surgery - Retain and impacted teeth, excessive teeth etiology and pathogenesis, classification, clinical features, treatment modalities, complications, difficult eruption of teeth. - Acute odontogenic infection, classification and causes - Complex odontogenic inflammation in the oral and facial region - Antibiotics in treating odontogenic infection - Chronic periodontitis - etiology and pathogenesis, classification, clinical outcome - Therapeutic procedures of chronic periodontalinflammations. <u>Practical instruction</u> - Admission, examination, diagnosis and treatment plan. - Internal diseases and oral surgery aspects - Conductive anesthesia in the upper jaw - demonstrating patient - Conductive anesthesia in the lower jaw - the patient demonstrating - Typical extraction of teeth in the upper and lower jaw in healthy patients, - Separation of roots in the upper and lower jaw, - Ambulatory treatment of oral – antral communications - Review and treatment of patients with normal hemostasis, vasculopathies, coagulopathies, thrombophilia and thrombosis, - Review patient with impacted teeth in the upper jaw and lower jaw - Review and treatment of patients with acute odontogenic infection. - Review and treatment of a patient with sub-acute odontogenic infection. - Review and treatment of patients with chronic odontogenic infection. - Incision of intraoral and extra oral abscess - Submucosal abscess, parulis, intramucosal anesthesia			
12.	Course methodology Lectures, auditoria exercises, consultations.			
13.	Total time available:		5x30=150	
14.	Time allocation:		30+45+15+15+45=150	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	45 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	15 hours
		16.3.	Independent study	45 hours
17.	Assessment			

	17.1.	Tests	40 points
	17.2.	Seminar paper/project (presentation: oral and written)	10 points
	17.3.	Attendance and participation	10 points
18.	Grading system	to 50points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Markovic A.	Oral surgery	Nauka, Beograd	2004
		2.	Dabov T.	Oralnokirurški priručnik.	Medicinska naklada Zagreb	2009
		3.	Perovic, Jojic	Oral surgery	Naucna knjiga, Beograd	1997
		4.	Todorovic et al.	Oral surgery	Nauka, Beograd	2000
		5.	Mise I.	Oral surgery	Jumena,Zagreb	1998
		6.	Peterson	Principles of oral and maxillofacial surgery	Blackwell Science	2001
		7.	Peterson L.	Contemporary Oral and Maxillofacial Surgery, 3rd ed.,	Mosby	1998.
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Todorovic Lj.	Anesthesia in dentistry	Zavod za udzbenike, Zagreb	1990

		2.	Jovanovic, Lotric	Conduction anesthesia in the upper and lower jaw	Naucna knjiga, Beograd	1980
		3.	Perovic,	Haemostasis and its disorders in dental practice	Naucna knjiga, Beograd	1994

Course description - first, second and third cycle of study					
1.	Course title	Dentofacial orthopedics 2			
2.	Code	3MF150212			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Fourth/ second	7.	Number of ECTS credits	5
8.	Instructor	Assoc. Prof. Stipica Popovski			
9.	Course prerequisites				
10.	Course objectives Basic knowledge of orthopedics of teeth and jaws and proper diagnosis and therapy.				
11.	Course content <u>Theoretical instruction</u> • Biological principles of orthodontic therapy and biomechanics • Planning of orthodontic therapy • Orthodontic preventive therapy • Interceptive orthodontic • Active removable orthodontic appliances • Therapy with functional orthodontic appliances • Therapy of malocclusion with fixed technics • Fixed appliances with labiolingval technics • Extraoral fixed appliances • Retention • Orthodontic therapy in miscellaneous and permanent dentition • Interdisciplinary orthodontic therapy <u>Practical instruction</u> • Presenting of orthodontic cardboard • Reseption of patient • Gnathometric diagnosis of study model with diagnosis and plan for therapy • Orthodontic preventive • Orthodontic interceptive • Orthodontic therapy • Handover of removable orthodontic appliances				

	• Placing of fixed orthodontic appliances • Reseption of patient with anomalies of particular teeth • Examination and presentation of patient with anomalies in sagittal plane • Examination and presentation of patient with anomalies in transversal plane • Examination and presentation of patient with anomalies in vertical plane			
12.	Course methodology			
13.	Total time available:		5KTS x 30=150	
14.	Time allocation:		30+30+15+15+60=150	
15.	Instructional activities	15.1.	Lectures – theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	30 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	15 hours
		16.3.	Independent study	60 hours

17.	Assessment		
	17.1.	Tests	20 points
	17.2.	Seminar paper/project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	7 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers).	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
		Required materials				
		Ordinal number	Author	Title	Publisher	Year
	22.1.	1.	William R. Proffit, Raymond P. White, David M. Sarver	Contemporary Treatment of DentofacialDeformity	Mosby, London	2003

		2.	Markovic et. all	Orthodontics	Medical book, Beograd-Zagreb	1989
	22.2.	Aditional literature				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study					
1.	Course title	Clinical mobile prosthodontics (partial denture)			
2.	Code	3MF149312			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ rinstitute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Fourth/ second	7.	Number of ECTS credits	5
8.	Instructor	Prof. Dr. Dragoljub Veleski			
9.	Course prerequisites	Enrolled in third year of studies			
10.	Course objectives Students to learn the theoretical basis and biological significance for treatment of patients with mobile dentures. Functional anatomy, histology and physiology of the stomatognatic system. Preprosthetic preparation of partial toothlessness and making dentures.				
11.	Course content <u>Theoretical instruction</u> 1. Biological substrate for partial toothlessness 2. Changes in stomatognatic system after partial loss of teeth 3. Classification of partial toothlessness and partial dentures 4. Parts of the partial denture, forms of the base of the upper and lower teeth 5. Clinical procedures for making a partial denture 6. Skeletal prosthesis 7. Part of partial dental prosthesis 8. Paralelometria and frezing 9. Modern means of retention of partial denture 10. Subtotal and roof prosthesis 11. Lecture and tutorial for using the partial denture 12. Repairs for partial dentures <u>Practical instruction</u> 1. Diagnosis, planning, preparation and treatment of partial toothlessness 2.Anatomy and physiology of orofacial system				

	3. Changes in partial loss of teeth 4. Casts (anatomical and functional) 5. Interoclusal relations 6. Selecting, setting teeth 7. Rehearsal of dentures with teeth set in wax 8. Instructions for use and maintenance 9. Skeletal prosthesis braces 10. Subtotal and roof prosthesis 11. Complications in partial prosthodontics and treatment of the effects 12. Correction and repairs of partial dentures			
12.	Course methodology Lectures, practical exercises and cosultations			
13.	Total time available:		5KTSx 30=150	
14.	Time allocation:		30+60+15+5+40=150	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	60 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	40 hours

17.	Assessment		
	17.1.	Tests	40 points
	17.2.	Seminar paper/project (presentation: oral and written)	10 points
	17.3.	Attendance and participation	10 points

18.	Grading system	to 50points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Dragoljub Veleski	Clinics and technics of partial prosthodontics	Faculty of Dentistry, Skopje	2010

				(plate partial prosthesis)		
		2.	Dragoljub Veleski	Clinics and technics of partial prosthodontics (Skeletal partial prosthesis)	Faculty of Dentistry, Skopje	2011
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Stamenkovic	Partial prosthodonitcs	Beograd	2005
		2.	Maric, Dimitrijevic	Partial prosthodontics	Beograd	1982

FIFTH YEAR – FIRST SEMESTER

Course description - first, second and third cycle of study					
1.	Course title	Parodontology 1			
2.	Code	3MF161012			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / I	7.	Number of ECTS credits	5
8.	Instructor	Prof. Dr. Minovska Ana			
9.	Course prerequisites	Enrolled fifth year			
10.	Course objectives Introducing the pathogenesis of periodontal disease, clinical signs and symptoms of periodontal disease, ocllusal impacts and work with patients in periodontology.				
11.	Course content <u>Theoretical instruction</u> • Pathogenesis of diseases of the dental-retaining apparatus • Histological changes and immune response in periodontal disease • Classification and clinical features of periodontal pocket • Changes of the soft and hard wall of periodontal pocket • Division of periodontal pockets regarding the bone • Periodontal defects on furcation • Chronic inflammatory periodontitis • Ulcero-necrotic periodontitis • Aggressive periodontitis • Complications of periodontitis • Systemic effects of periodontal disease • Occlusion and inflammatory periodontal disease <u>Practical instruction</u> • Diagnostic protocols				

	• Detection of periodontal disease • Clinical signs and differential diagnosis of periodontal disease • Auxiliary diagnostic methods • Therapy of periodontal diseases • Working with patients			
12.	Course methodology Lectures, learning from pictures , figures , models			
13.	Total time available:		5EKTSx30h=150hours	
14.	Time allocation:		30+30+15+10+65=150hours	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	30 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	10 hours
		16.3.	Independent study	65 hours
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature					
		Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Minovska A.	Authorized lectures		
		2.	Newman MG, Takei HH, Carranza FA	Caranza's clinical periodontology	WB saunders Company , Philadelphia , New York; 9th edition	2001

		3.	Lindhe J, Karring T, Lang NP	Clinical periodontology and implantology	Globus, Zagreb	2004
		4.	Džajić, D., Đukanović, D.	Periodontology	Stomatološki fakultet Beograd	2006
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Minovska	Periodontopathia	Faculty of dentistry-Skopje	2008
		2.	Stavrevska Minovska Ana. Pandilova-Maja, Ivanovski Kiro	Oral Hygiene	Faculty of dentistry-Skopje	2005

Course description - first, second and third cycle of study

1.	Course title	Pediatric dentistry 1			
2.	Code	3MF161312			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / I	7.	Number of ECTS credits	5
8.	Instructor	Assoc. Prof. Georgiev Zlatko			
9.	Course prerequisites	Enrolled ninth semester, passed Preventive dentistry, Clinical cariology 1, Pediatrics, Infectology, Psychiatry			
10.	Course objectives Acquisition of basic knowledge of pediatric dentistry				
11.	Course content -Introduction to Pediatric Dentistry -Dental work with children -Psychological types of children -Developing teeth and orofacial region -Characteristics of children's teeth and jaws -Chronology of appearance of milk and permanent teeth -Irregularities in tooth development -Structural anomalies -Decidous teeth caries -Circular cavities milk teeth -Treatment of caries of deciduous teeth -Materials for opturation of cavities in deciduous teeth				
12.	Course methodology Interactive teaching (theoretical) work in small groups (exercises) and other				
13.	Total time available:	5EKTSx30h=150hours			
14.	Time allocation:	30+30+15+10+65=150hours			

15.	Instructional activities		15.1.	Lectures- theoretical classes	30 hours
			15.2.	Practice (laboratory, auditory) seminars, team work	30 hours
16.	Other activities		16.1.	Projects	15 Hours
			16.2.	Individual assignments	10 hours
			16.3.	Independent study	65 hours
17.	Assessment				
	17.1.	Tests		65 points	
	17.2.	Seminar paper / project (presentation: written and oral)		20 points	
	17.3.	Attendance and participation		15 points	
18.	Grading system		to 50 points	5	
			from 51 to 60 points	6	
			from 61 to 70 points	7	
			from 71 to 80 points	8	
			from 81 to 90 points	9	
			from 91 to 100 points	10	
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)		
20.	Language of instruction		Macedonian		
21.	Course evaluation		Self-evaluation		

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Beloica D. et all	Child dentistry	Elit- Medica Beograd.	2000.
		2.	Ralph E. McDonald, David R. Avery	Dentistry for the Child and Adolescent	Mosby, 7th ed.	1999.
		3.	Bajraktarova B.- Bajraktarova Valjakova E., Bajraktarova Misevski-C	Anomalies of teeth	NUB, Skopje	2011.

	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Z. Georgiev	Authorized lectures		
		2.				
		3.				

Course description - first, second and third cycle of study					
1.	Course title	Clinical endodontics 2			
2.	Code	3MF160612			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / I sem.	7.	Number of ECTS credits	5
8.	Instructor	Assoc. Prof. Ivona Kovacevska			
9.	Course prerequisites	Enrolled fifth year of studies Listened to Clinical endodontics 1			
10.	Course objectives To study the endodontic procedures in the treatment of teeth with avital pulp. Apical periodontal opportunities after root canal therapy, rehabilitation of chronically apical lesions, errors in the endodontic treatment.				
11.	Course content <u>Theoretical instruction</u> Degenerative diseases of the pulp - ethiology, diagnosis, therapy. Gangrenous pulp tissue damages - symptoms, pathogenesis, diagnosis, clinical manifestation. Pathological apical periodontal disease - classification, ethiology, mechanism of pathogenesis. Acute apical periodontal lesion. Chronic apical periodontal lesion Endodontic treatment of teeth with a vital pulp. Techniques and methods of root canal preparations. Treatment of chronic apical periodontal lesion - frontal and lateral teeth Perforations and errors during endodontic treatment. Dental fractures - diagnosis, endodontic treatment approach. Apical periodontal repair.				

	Endodontic surgical treatment of apical and lateral periodontitis. Practical instruction Necrosis, pulp necro biosis diagnosis and therapy. Gangrene - symptoms, diagnosis, therapeutic approach. Instruments for mechanical and ultrasonic root canal treatment Types of techniques for machining the root system Acute peri apical lesion - therapy Chronic apical and lateral parodontitis- therapy. Intra canal medication - inter séance temporary medication. Techniques and systems for root canal obturation. Intra canal anchors - composite, metal peg. Endodontic treatment errors - diagnosis, assessment, remediation. Restoration of endodontic treated teeth. Teeth whitening Endodontic surgical treatment.			
12.	Course methodology			
13.	Total time available:		5EKTSx30h=150hours	
14.	Time allocation:		30+30+15+10+65=150hours	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	30 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	10 hours
		16.3.	Independent study	65 hours
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Ivona Kovacevska	Authorized lectures		
		2.	Odjaklievska S.	Klinicka endodoncija	Skopje	2009
		3.	Bergenholtz G.	Textbook of Endodontology	Second Edition	2010
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Tronstad L.	Clinical endodontics	Danubius Dental – Belgrade	2005
		2.	Botushanov	Endodontia	Plovdiv	2000
		3.	Ingle I. J.	Endodontics	Fifth edition on line	2002

Course description - first, second and third cycle of study					
1.	Course title	Maxillofacial surgery 1			
2.	Code	3MF155112			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme (unit/ institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / I	7.	Number of ECTS credits	4
8.	Instructor	Prof. Dr. Vladimir Popovski			
9.	Course prerequisites	Enrolled fifth year of studies			
10.	Course objectives Introduction to diseases in the maxillofacial area and neck, inflammation and injury to the head and neck.				
11.	Course content				

	Theoretical instruction - Introduction to the course Maxillofacial surgery, history - Inflammation of the face, head and neck - Acute inflammation with fast flow (abscesses and phlegmons) face and neck - Acute inflammation of the jaw, osteomyelitis - Acute sinusitis, chronic sinusitis - Pathology of the salivary glands, inflammatory syndromes. - Cysts of the head and neck - Classification of soft tissue cysts of the neck - Fractures of the upper jaw, Le Fort classification, skull base fractures, facial bone fractures and head - Treatment of fractures of the upper jaw and the bones of the face and head - Fractures of the lower jaw, classification, diagnostic methods - Treatment of fractures of the lower jaw. Practical instruction - Introduction to the course Maxillofacial surgery, history - Inflammation of the face, head and neck - Acute inflammation with fast flow (abscesses and flegmoni) face and neck - Acute inflammation of the jaw, osteomyelitis - Acute sinusitis, chronic sinusitis - Pathology of the salivary glands, inflammatory syndromes. - Cysts of the head and neck - Classification of soft tissue cysts of the neck - Fractures of the upper jaw, Le Fort classification, skull base fractures, facial bone fractures and head - Treatment of fractures of the upper jaw and the bones of the face and head - Fractures of the lower jaw, classification, diagnostic methods - Treatment of fractures of the lower jaw.			
12.	Course methodology Lectures, preclinical laboratory exercises, consultations.			
13.	Total time available:		4EKTSx30h=120hours	
14.	Time allocation:		30+15+15+10+50=120hours	
15.	Instructonal activities	15.1.	Lectures – theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	10 hours
		16.3.	Independent study	50 hours
17.	Assessment			
	17.1.	Tests		70 points

	17.2.	Seminar paper/project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)		
20.	Language of instruction	Macedonian		
21.	Course evaluation	Self-evaluation		

Course description - first, second and third cycle of study					
1.	Course title	Clinical fixed prosthodontics 1			
2.	Code	3MF149612			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / I semester	7.	Number of ECTS credits	5
8.	Instructor	Assoc. Prof. Nikola Gigovski			
9.	Course prerequisites	Enrolled in ninth semester			
10.	Course objectives Introduction to clinics of dental crowns, crown types , different preparation techniques and basic principles of clinical procedures for making different types of crowns.				
11.	Course content <u>Theoretical instruction</u> 1. Reception, examination, diagnostics and plan of therapy 2. Clinics of artificial crowns indication and contradictions				

22. Literature

22.1. Required materials

Ordinal number	Author	Title	Publisher	Year
1.	Markovic A.	Oral surgery	Nauka, Beograd	2004
2.	Dabov T.	Oralnokirurški priručnik.	Medicinska naklada Zagreb	2009
3.	Perovic, Jojic	Oral surgery	Naucna knjiga, Beograd	1997
4.	Todorovic et al.	Oral surgery	Nauka, Beograd	2000
5.	Mise I.	Oral surgery	Jumena, Zagreb	1998
6.	Peterson	Principles of oral and maxillofacial surgery	Blackwell Science	2001
7.	Peterson L.	Contemporary Oral and Maxillofacial Surgery, 3rd ed.,	Mosby	1998.

22.2. Supplementary materials

Ordinal number	Author	Title	Publisher	Year
1.	Todorovic Lj.	Anesthesia in dentistry	Zavod za udzbenike, Zagreb	1990
2.	Jovanovic, Lotric	Conduction anesthesia in the upper and lower jaw	Naucna knjiga, Beograd	1980
3.	Perovic,	Haemostasis and its disorders in dental practice	Naucna knjiga, Beograd	1994

3. Arrangement for preparation, contemporary methods of preparation
4. Dental abutments, forms - advantages and disadvantages
5. Demarcation line, types and localization
6. Impression taking and protection of the prepared teeth
7. Determination of intermaxillary relation
8. Fitting and methods of testing of fixed constructions.
9. Cementing of the constructions, temporary and definitive.
10. Clinic of full crowns
11. Clinic of alternative crowns

	12. Taking off old crowns and bridges <u>Practical instruction</u> 1. Reception, examination, diagnostics and plan of therapy 2. Clinics of artificial crowns indication and contradictions 3. Arrangement for preparation, contemporary methods of preparation 4. Dental abutments, forms - advantages and disadvantages 5. Demarcation line, types and localization 6. Impression taking and protection of the prepared teeth 7. Determination of intermaxillary relation 8. Fitting and methods of testing of fixed constructions. 9. Cementing of the constructions, temporary and definitive 10. Clinic of full crowns 11. Clinic of alternative crowns 12. Taking off old crowns and bridges			
12.	Course methodology Lecture, discussion, debate, cooperative learning techniques, individual assignments			
13.	Total time available:		5EKTSx30h=150hours	
14.	Time allocation:		15+60+15+10+50=150hours	
15.	Instructional activities	15.1.	Lectures- theoretical classes	15 h
		15.2.	Practice (laboratory, auditory) seminars, team work	60 h
16.	Other activities	16.1.	Projects	15h
		16.2.	Individual assignments	10h
		16.3.	Independent study	50h
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	

21.	Course evaluation	Self-evaluation

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Sabanov E.	Avtorizirani predavanja		
		2.	Mirčev E	Klinika na fiksnata stomatološka protetika	NIP ,,Studentski zbor,, Skopje	1996
		3.	Mirčev E.	Pretklinika na fiksnata stomatološka protetika,	NIP ,,Studentski zbor,, Skopje	1996
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Trifunovik D., Vujoševiќ L.	Stomatološka protetika-fiksni nadoknadi	Univerzitet vo Belgrad	1998

Course description - first, second and third cycle of study					
1.	Course title	Oral surgery 2			
2.	Code	3MF154812			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / I	7.	Number of ECTS credits	4
8.	Instructor	Assoc. Prof. Cena Dimova			
9.	Course prerequisites	Enrolled in fourth year of studies Listened and passed Oral surgery 1.			
10.	Course objectives Indications for extraction, diagnosis and differential diagnosis of diseases of the oral surgery, giving anesthesia in the oral cavity, to independently perform basic techniques of anesthesia in dentistry, tooth extractions, treatment of post-extraction complications, learning the basic methods of hemostasis, treatment of acute odontogenic infection, as well as an introduction to the therapeutic possibilities of modern dental surgery.				
11.	Course content <u>Theoretical instruction</u> - Odontogenic cysts of the jaws				

	- Non-odontogenic cysts - Diagnosis and surgical treatment of cysts in the jaws and soft tissues, - Prevention and care of oral surgical complications during oral surgical procedures - Orthodontic oral surgical interventions - Oral surgical interventions in childhood - Traumatic injuries to teeth - Dental grafts, replantation of teeth, tooth transplantation. - Basic preprosthetic surgery. Preprosthetic interventions of soft and bony tissues. Application of bone grafts in the oral and facial region. Application alloplastic materials in the oral and facial region. Implantology in the oral and facial region. Augmentation, sinus lift, transposition of n. Mentalis. - Prevention and treatment of emergency conditions - Tumors in the oral surgery <u>Practical instruction</u> - Admission of patient, review, diagnosis and treatment plan. - Conductive anesthesia in the upper jaw and lower jaw. - Typical extraction of teeth in the upper and lower jaw in healthy patients, - Separation of roots in the upper and lower jaw, - Review and treatment of patients with cysts of the teeth and jaws - Assisting in the operating room during oral surgery interventions (impacted teeth in the upper jaw and lower jaw, a patient with an acute, sub-acute and chronic dentogenic infection. (Incision abscess). - Assisting in the operating room during oral surgical interventions (Sinus plastic, orthodontic oral surgical interventions and interventions in pediatry).			
12.	Course methodology Lectures, auditoria exercises, consultations.			
13.	Total time available:		4EKTSx30h=120hours	
14.	Time allocation:		15+30+15+10+50=120hours	
15.	Instructional activities	15.1.	Lectures- theoretical classes	15 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	30 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	10 hours
		16.3.	Independent study	50 hours
17.	Assessment			
	17.1.	Tests		(20+20+30)=70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22. Literature

22.1. Required materials

Ordinal number	Author	Title	Publisher	Year
1.	Markovic A.	Oral surgery	Nauka, Beograd	2004
2.	Dabov T.	Oralnokirurški priručnik.	Medicinska naklada Zagreb	2009
3.	Perovic, Jojic	Oral surgery	Naucna knjiga, Beograd	1997
4.	Todorovic et al.	Oral surgery	Nauka, Beograd	2000
5.	Mise I.	Oral surgery	Jumena, Zagreb	1998
6.	Peterson	Principles of oral and maxillofacial surgery	Blackwell Science	2001
7.	Peterson L.	Contemporary Oral and Maxillofacial Surgery, 3rd ed.,	Mosby	1998.

22.2. Supplementary materials

Ordinal number	Author	Title	Publisher	Year
1.	Todorovic Lj.	Anesthesia in dentistry	Zavod za udzbenike, Zagreb	1990
2.	Jovanovic, Lotric	Conduction anesthesia in the upper and lower jaw	Naucna knjiga, Beograd	1980

		3.	Perovic,	Haemostasis and its disorders in dental practice	Naucna knjiga, Beograd	1994

FIFTH YEAR – SECOND SEMESTER

Course description - first, second and third cycle of study					
1.	Course title	Parodontology 2			
2.	Code	3MF161112			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / II	7.	Number of ECTS credits	3
8.	Instructor	Prof. Dr. Minosvka Ana			
9.	Course prerequisites	Enrolled in fifth year of studies			
10.	Course objectives Gingival diseases, emergency treatment of periodontal disease, basic periodontal surgery				
11.	Course content <u>Theoretical instruction</u> • Gingival disease • Gingival increases • Ulcero-necrotizing gingivitis • Chronic desquamative gingivitis • Emergency treatment of inflammatory periodontal diseases • Initial therapy of periodontis • Anti-infective (antimicrobial) therapy • Oclusal evaluation and therapy • Surgical corrective therapy • Therapy of furcation defects • Phase of maintenance of the achieved results <u>Practical instruction</u> • Conservative treatment of periodontal diseases • Diagnosis and prognosis periodontal diseases • Conservative treatment on patients • Identify the indications and contraindications for surgery periodontal surgery				
12.	Course methodology Lectures, learning from pictures , figures , models				
13.	Total time available:	75			
14.	Time allocation:	2+2+1			

15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	30hours
16.	Other activities	16.1.	Projects	5 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	5 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper / project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Authorized lectures			
		2.	Newman MG, Takei HH, Carranza FA	Caranza's clinical periodontology	WB saunders Company , Philadelphia , New York; 9th edition	2001
		3.	Lindhe J, Karring T, Lang NP	Klinička parodontologija i	Globus, Zagreb	2004

				dentalna implantologija 1. Hrvatsko izdanje		
		4.	Džajić, D., Đukanović, D.	Parodontologija	Stomatološki fakultet Beograd	2006
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Minovska A.	Parodontopatija	Faculty of Dentistry, Skopje	2008
		2.	Stavrevska Minovska Ana, Pandilova Maja, Ivanovski Kire	Oral hygiene	Faculty of Dentistry , Skopje	2005

Course description - first, second and third cycle of study					
1.	Course title	Pediatric dentistry 2			
2.	Code	3MF161412			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / II	7.	Number of ECTS credits	3
8.	Instructor	Assoc. Prof. Georgiev Zlatko			
9.	Course prerequisites	Enrolled in ninth semester			
10.	Course objectives Acquisition of basic knowledge of pediatric dentistry				
11.	Course content -Disease of the pulp of milk teeth -Periodontitis of deciduous teeth - Periodontal complications - acute infections -Oral-surgery in childhood -Diseases of the soft tissues in the mouth of children				

	-Disease of the periodontitis -Oral manifestations of systemic diseases -Dental traumatology -Young permanent teeth -Emergencies -Interceptive dentistry -Prosthetic rehabilitation and use of antibiotics in childhood			
12.	Course methodology Interactive teaching (theoretical) work in small groups (exercises) and other			
13.	Total time available:		120	
14.	Time allocation:		2+3+1 / per week	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	75 hours
16.	Other activities	16.1.	Projects	15hours
		16.2.	Individual assignments	hours
		16.3.	Independent study	hours
17.	Assessment			
	17.1.	Tests		65 points
	17.2.	Seminar paper / project (presentation: written and oral)		20 points
	17.3.	Attendance and participation		15 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year

		1.	Beloica D. et all	Detska stomatologija	Elit-Medica Beograd,	2000.
		2.	McDonald R, Avery D	Dentistry for the Child and Adolescent	Mosby, 7 ed	1999.
		3.	Bajraktarova B.	Dental tarumatology	NUB Skopje	2006.
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Z. Georgiev	Authorized lectures		
		2.				
		3.				

Course description - first, second and third cycle of study

1.	Course title	Maxillofacial surgery 2			
2.	Code	3MF155212			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme (unit/ institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / II	7.	Number of ECTS credits	3
8.	Instructor	Prof. Dr. Vladimir Popovski			
9.	Course prerequisites	Enrolled fifth year			
10.	Course objectives Diseases with different diagnosis in maxillofacial region and neck deformities, ruptures, neoplasms, neuralgia				
11.	Course content <u>Theoretical instruction</u> - Tumors in the maxillofacial region - Tumors of the upper and lower jaw, sinuses, epipharynx, nose, mouth - Soft tissue tumors (tumors of the lips, tongue, mucous membrane, neck skin) - Malignant neoplasms in maxillofacial region and neck - Congenital anomalies of the maxillofacial region and neck - Treatment of congenital anomalies in maxillofacial area and neck. - Ruptures -clinical picture and therapy. - Neurological disorders in maxillofacial region - Pathology of the salivary glands				

	- Pathology of rare diseases - Pathology articulatio temporo-mandibularis - Preprosthetic surgery <u>Practical instruction</u> - Work in operating rooms, instruments, organization of work and asepsis - Bandages, binding up, types of materials, immobilization - Infections in the maxillofacial region - Fractures in maxillofacial region - Treatment of patients with neoplasms - Treatment of patients with indicated ortognatic surgery - Treatment of patients with ruptures - Treatment of patients with neurological diseases in the maxillofacial region - Treatment of patients with diseases of the salivary glands (syndromes, inflammatory, calculosis, neoplasms) - Treatment of patients with rare diseases in the maxillofacial region - Treatment of patients with TMJ disorders - Treatment of patients with preprosthetic surgery			
12.	Course methodology Lectures, preclinical laboratory exercises, consultations.			
13.	Total time available:		75	
14.	Time allocation:		2+2+1	
15.	Instructional activities	15.1.	Lectures – theoretical classes	30hours
		15.2.	Practice (laboratory, auditory) seminars, team work	30 hours
16.	Other activities	16.1.	Projects	5hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	5 hours
17.	Assessment			
	17.1.	Tests		40 points
	17.2.	Seminar paper/project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		10 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8

		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22. Literature

22.1. Required materials

Ordinal number	Author	Title	Publisher	Year
1.	Markovik	Practical of oral surgery	Belgrade	2005
2.	Jojik, Petrovik	Oral surgery		
3.	Todorovik	Oral surgery	Belgrade	2000
4.	Mishe	Oral surgery		
5.	Peterson	Principles of oral and maxillofacial surgery		

22.2. Supplementary materials

Ordinal number	Author	Title	Publisher	Year
1.	Todorovic l.	Anaesthesia in Dentistry		
2.	Petroviћ, M. Gavriћ	Emergency condicion in dental practices	Draganic Belgrade	2001.
3.	Gavriћ.	IK Maxillofacial Surgery	Draganic Belgrade	2005
4.	Lotrik	Conduction anesthesia in upper and lower jaw		
5.	Petrovik	Haemostasis and its disorders in dental practice		

Course description - first, second and third cycle of study

1.	Course title	Dental implantology			
2.	Code	3MF154912			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme (unit/ institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / II	7.	Number of ECTS credits	3
8.	Instructor	Assoc. Prof. Cena Dimova			
9.	Course prerequisites	Enrolled fifth year			
10.	Course objectives - Modern systems of dental implants - Techniques for insertion of dental implants, features - Making substructure of dental implants				
11.	Course content <u>Theoretical instruction</u> - Historical aspects of oral implantology and its future - Use of biomaterial and the importance of biomechanics in oral implantology. - Basic physiological processes of bone, its recovery, maturation and meaning of funcionality. - Surgical anatomy of facial bones their classification. - Muscles, nerves and arteries in the orofacial region and their importance for insertion of implants. - Primary retention and stabilization of the implants. - Scheduling patient for implantology (patient selection, their introduction, history). - Planning cuts, choice of implants and transmucosal upgrades. Implantologic systems. - Installation of dental implants for compensation in post extraction wound. Transdental implants. - Transplantation of soft and hard tissues. Embed allogeneic materials, artificial bone - Complications during implantation, mucositis and perimplantitis. Augumentation. - Sinus lift and transposition of n. mentalis. Prosthetic rehabilitation implants <u>Practical instruction</u> - History of oral implantology and its future - Use the biomaterial and the importance of biomechanics in oral implantology. - Basic physiological processes of bone, its recovery, growth and importance for function. - Surgical anatomy of maxillary and mandibular bone and their clasification - Muscles, nerves and arteries in the orofacial region and their significance for installation of implants. - Retention and stabilization of primary implants.				

	- Planning for implantology patient (patient selection, their introduction, history). - Planning of cuts, selection of implants and transmucosal upgrades. Implantologic systems. - Installation of implants in charge of toothed post extraction wound. - Transplantation of soft and hard tissues. - Local and systemic complications in implantology. - Planning for future upgrades of prosthetic implants.			
12.	Course methodology Lectures, preclinical laboratory exercises, consultations.			
13.	Total time available:		60	
14.	Time allocation:		2+1+1	
15.	Instructional activities	15.1.	Lectures – theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	5 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	5hours
17.	Assessment			
	17.1.	Tests		40 points
	17.2.	Seminar paper/project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		10 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Vankovski Vlado	Dental structures of implants		2005
		2.	Carl E.Misch	“Contemporary Implant Dentistry”,3rd ed	. Mosby,	2007.
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Peterson L.	“Contemporary Oral and Maxillofacial Surgery”, 3rd ed.,	Mosby	1998.

Course description - first, second and third cycle of study					
1.	Course title	Laser therapy in dentistry			
2.	Code	3MF155412			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / II	7.	Number of ECTS credits	2
8.	Instructor	Prof. Dr. Ana Minovska			
9.	Course prerequisites	Enrolled in IV academic year			
10.	Course objectives Study of modern laser technology and inplementacion in dental disciplines and therapeutic procedures.				
11.	Course content <u>Theoretical instruction</u> • Introductory lecture on laser light. • Quantum nature of light. • Mechanism of getting the laser light. • Parameters and properties of laser light. • Active Media - stimulators of laser light. • Effect of laser light on tissue. • Techniques and methods of transmission of laser light to the tissue. • Using laser restorative dentistry. • Application of laser therapy in endodontic therapy. • Oral - surgical therapeutic procedures with laser light. • Use of laser parodontology and soft tissue damage.				

	• Application of laser in orthodontics and pediatric dentistry. <u>Practical instruction</u> • Introduction to laser light. • Basic physical parameters of the laser beam. • Generation and application of laser light. • Types of lasers and application opportunities. • Active Media. • Interaction of laser with tissues. • Preparations of teeth with laser. • Canal disinfection with laser. • Whitening, tooth hypersensitivity, treatment of soft tissue changes. • Oral - surgical intervention with laser: frenulectomy • Treatment parodontal and soft tissue changes with laser light. • Laser biostimulation; treating herpes labijalis			
12.	Course methodology			
13.	Total time available:		60	
14.	Time allocation:		1+1+1	
15.	Instructional activities	15.1.	Lectures- theoretical classes	15 h
		15.2.	Practice (laboratory, auditory) seminars, team work	15 h
16.	Other activities	16.1.	Projects	5 hours
		16.2.	Individual assignments	5hours
		16.3.	Independent study	5 hours
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	

21.	Course evaluation	Self-evaluation

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Kovacevska I.	Authorized lectures	Herkli komerc Bitola Skopje	
		2.	Trojacanec Z.	Application of biostimulacion lasers in dentistry	Evropa 92 Kocani Skopje	2002
		3.	Trojacanec Z.	Biostimulacion lasers in medicine		1995
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study

1.	Course title	Clinical fixed prosthodontics 2			
2.	Code	3MF149712			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / II	7.	Number of ECTS credits	4
8.	Instructor	Prof.Dr. Erol Sabanov			
9.	Course prerequisites				
10.	Course objectives Introduction in clinic of dental bridges, their parts and statics, production and correction				
11.	Course content <u>Theoretical instruction</u> 1. Orofacial system and components 2. Biological basics of dental bridges. 3. Abutment teeth of dental bridges, selection and valuation 4. Dental bridge pontics , analysis and necessity for production 5. Changes in mucous under the dental bridge pontics, parameters for evaluation. 6. Statics of dental bridges in strait line and in ark.				

	7. Biological rules for resistance and stress of the dental bridges and planning of bridge constructions. 8. Specifics in preparation of teeth for dental bridges and protection of prepared teeth with chemical agents and production of temporary bridges. 9. Fitting of the metal constriction of the dental bridge 10. Alternative dental bridges, Maryland Bridges. 11. Cementing of the dental bridges temporarily and definitively. 12. Complication in cementation of the dental bridges. <u>Practical instruction</u> 1. Reception, diagnosis and plan for therapy 2. Clinics of the dental brides construction- indication and contradictions 3. Preparing for preparation, contemporary methods of preparation. 4. Preparation for bridges in strait line. 5. Preparation for dental bridges in arc (circular) 6. Protection of prepared teeth, taking impressions. 7. Determination of intermediary relation 8. Fitting of the construction and testing of it. 9. Cementing of the dental bridges temporary and definitive. 10. Preparing temporary bridges 11. Repairing of dental bridges 12. Taking off old bridges and crowns			
12.	Course methodology Lecture, discussion, debate, cooperative learning techniques, individual assignments			
13.	Total time available:		80	
14.	Time allocation:		1+4+1 / per week	
15.	Instructional activities	15.1.	Lectures- theoretical classes	15 classes
		15.2.	Practice (laboratory, auditory) seminars, team work	60 classes
16.	Other activities	16.1.	Projects	5classes
		16.2.	Individual assignments	5classes
		16.3.	Independent study	5classes
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7

		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Sabanov E.	Authorized lectures		
		2.	Mirčev E	Clinic of fixed prosthodontics	NIP ,,Studentski zbor,, Skopje	1996
		3.	Mirčev E.	Preclinical of fixed prosthodontics	NIP ,,Studentski zbor,, Skopje	1996
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Trifunovik D., Vujoševiќ L.	Fixed prosthodontics	Belgrade	1998

SECOND YEAR - FIRST SEMESTER (Elective course from List No. 1)

Course description - first, second and third cycle of study					
1.	Course title	Roentgenology			
2.	Code				
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme (unit/ institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Second/first	7.	Number of ECTS credits	2
8.	Instructor	Prof. Dr. Tane Markoski			
9.	Course prerequisites				
10.	Course objectives				

	Indications and contraindications for X-ray filming. Roentgenological anatomy of maxillo-facial region. Pathological conditions.			
11.	Course content 1.Introduction to the course 2. General radiology 3. Production of a X ray 4. Using of the X ray characteristics in diagnostic procedures 5. Digital radiology 6. Imaging diagnostic methods / US, CT and MRI/ 7. Radiology diagnosis of the cardiovascular system 8 Radiology diagnosis of the respiratory tract 9 Radiology diagnosis of the GIT tract. 10 Radiology diagnosis of the urinary tract. 11. Radiology diagnosis of the musculoskeltal system 12 Neuro radiology			
12.	Course methodology Lectures, preclinical laboratory exercises, consultations.			
13.	Total time available:		2 KTSx 30 hours=60	
14.	Time allocation:		15+15+15+15=60	
15.	Instructional activities	15.1.	Lectures – theoretical classes	15 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	15hours
		16.2.	Individual assignments	15 hours
		16.3.	Independent study	15 hours
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper/project (presentation: written and oral)		20 points
	17.3.	Attendance and participation		10 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Tane Markoski	Authorized lectures		
		2.	Peterson	Principles of oral and maxillofacial surgery		
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study					
1.	Course title	Oral biochemistry			
2.	Code				
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Second / first	7.	Number of ECTS credits	2
8.	Instructor	Assoc. Prof. Danijela Janicevic Ivanovska			
9.	Course prerequisites	Enrolled in third semester			
10.	Course objectives Mastering the basic theoretical knowledge through twelve methodological units, students will gain knowledge of basic biochemical characteristics of saliva as an oral medium and its protective role of oral tissues, and the metabolism of calcium and phosphorus that are entering the composition of human solid tissues (bone, cartilage, enamel, dentine and cement), necessary for further education of the students.				
11.	Course content <u>Theoretical instruction</u> 1. Oral homeostasis 2. Role and importance of saliva 3. Biochemical composition of enamel, enamel prisms, izoionic and heteroionic change 4. Biochemical composition of dentin, primary, secondary and tertiary				

	5. Biochemical properties of mature and immature dental plaque 6. Biochemical composition of cement, primary and secondary cementum 7. Mechanism of occurrence and significance of tooth 8. Organization of dental pulp 9. Immune protection of the organism 10. Calcium metabolism 11. Phosphorus metabolism 12. Use of fluoride in prevention of dental caries <u>Practical instruction</u> 1. Endocrine and neural regulation of secretion of saliva 2. Biochemical analysis of stimulated saliva 3. Salivary amylase - hydrolysis of starch 4. Determination of pH of saliva 5. Solubility of sialomucin 6. Influence of electrolytes on enamel 7. Extracellular polysaccharides 8. Biochemical processes in dental plaque 9. Inorganic part of the enamel - calcium phosphate 10. Importance of fluorine from preventative - therapeutic aspect			
12.	Course methodology Theoretical instruction, practice, seminar paper, individual work			
13.	Total time available:		2x30=60	
14.	Time allocation:		15+15+15+5+10=60	
15.	Instructional activities	15.1.	Lectures- theoretical classes	2 hours per week
		15.2.	Practice (laboratory, auditory) seminars, team work	
16.	Other activities	16.1.	Projects	1 hour per week
		16.2.	Individual assignments	hours
		16.3.	Independent study	hours
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9

		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian language	
21.	Course evaluation	Self-evaluation	

22.	Literature					
		Required materials				
		Ordinal number	Author	Title	Publisher	Year
	22.1.	1.	Danijela Janikevik Ivanovska	Authorized lectures		2013
		2.	Sloboda A. Djekova- Stojkova	Selected chapters from Oral biochemistry	Faculty of Medical Sciences - Skopje	2001
		3.	Jovan Andjik	Oral homeostatis	“Nauka” Belgrade	2000
		Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
	22.2.	1.	Kiro Ivanovski et all	Oral biochemistry	Faculty of Dentistry	2012
		2.	Jovan Vojinik	Biologija zuba	Naucna Knjiga	1990
		3.				

Course description - first, second and third cycle of study					
1.	Course title	Communication skills			
2.	Code	MDOM1313			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme (unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	II / II	7.	Number of ECTS credits	2
8.	Instructor	Assoc. Prof. Gordana Panova			
9.	Course prerequisites	Enrolled in second year			
10.	Course objectives				

	Knowledge and understanding of basic communication rules and the individual needs to communicate with other people - Organizing an active and independent learning communication skills and preparing students for effective learning of the basic communication skills - Training for establishing effective communication between staff health workers, patients and their relatives and friends, as well as the formation of feedback information for successful communication, with special emphasis on health communication. - Communication advantages, cooperation and teamwork of the University and in health care facilities			
11.	Course content Communication (definition, verbal and nonverbal communication styles) Importance of non-verbal communication, body language (posture, eye contact, height, and pitch, adequate mimics, personal space ...) Ability to hear, barriers for good communication, negotiation, communication between healthcare professionals (code of conduct, speech, dress, etc.), Communication patient –doctor, patient-nurse, healthcare worker (problematic reactions, adequate reactions), techniques for problem solving and relaxation echniques, Burnout (definition, cause, way of learning), aggressive communication style, Passive communication style. Communicationbetween the healthcare workers in all healthcare institutions, outpatient clinics, hospitals, clinics, sanatoriums.			
12.	Course methodology Lecture, exercises, consultations			
13.	Total time available:	2 ECTS x 30 h = 60 hours		
14.	Time allocation:	30+0+15+5+10 = 60 hours		
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	/
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	10 hours
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper/project (presentation: oral and written)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading System	to 50points		5
		from 51 to 60 points		6
		from 61 to 70 points		7
		from 71 to 80 points		8
		from 81 to 90 points		9
		from 91 to 100 points		10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)		
20.	Language of instruction	Macedonian		
21.	Course evaluation	Self-evaluation		

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	G. Panova	Communication skills	UGD	
		2.	K.R.Seturman	Communication skills in clinical practice	Tabernakul	2010
		3.	Hilde and Tom Eide,	Communication nurse-patient	UB-Sr	2006
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Marcia Lewis Carroll	Tamparo Medical Law, Ethics and Bioethics Academic Press,	Tabernakul-Skopje	2010
		2.	Marich John Medical	Communication skills in clinical practice	Faculty of Medicine, Belgrade,	2005
		3.	R.C.Petterson	Based Learning problems	BiokontoIgalo	2008

Course description - first, second and third cycle of study					
1.	Course title	Bistatistics and computer science			
2.	Code	3MF120012			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Second / first	7.	Number of ECTS credits	4
8.	Instructor	Prof. Dr. Milka Zdravkovska			
9.	Course prerequisites	Enrolled in second year of studies			
10.	Course objectives Acquiring knowledge about the basics of medical biostatistics - ways of collecting data, grouping the data series and their statistical table and graph. Learning basic parametric and nonparametric tests, demographic and vital statistics.				
11.	Course content <u>Theoretical instruction</u>				

	1. Concept and development of bistatistics ; Statistical table , sample units, types and properties of statistics , statistical series (atributive, numerical, spatial, temporal) 2. Methods of data collection : census, registration and preparation of reports, method of questionnaire - a survey . 3.Tabular and graphical presentation of statistical series. Analysis of the structure of the series atributive tokens (i.e., proportions , rates and indices) . 4. Analysis of the structure of the series with numerical characteristics (mean, median , mode) . 5. Measures of variability : mean deviation , variance and standard deviation , coefficient of variation . 6. Hypotheses / testing of hypotheses , analysis of statistical relationships in series with atributive marks (χ^2 test and contingency coefficient) . 7. Analysis of relationships in series with numerical characters (Pearson- correlation coefficient t , Spearman- t rank correlation coefficient and multiple correlation) . 8. Method of sampling , estimation of parameters of the sample (parameter π and the parameter μ) 9. Testing the significance of differences between the two environments and arithmetic between two proportions (Student- t t- test for independent and dependent samples) . 10. Examination of the dynamics of phenomena (trend , seasonal index) 11. Vital Statistics , Concepts and sources in demographic statistics. 12. Application of comuter science technology in medicine . <u>Practical instruction</u> 1. Plan for stastistic research. 2. Indices of dynamics with constant and variable basis. 3. Calculating the arithmetic mean in nongroup data, grouped in the interval group and the group without grouped interval. 4. Calculating the median and the mode nongrouped and grouped data. 5. Standard deviation in nongrouped and grouped data; Coefficient of variation. 6. Calculating the expected frequencies and χ^2 test. 7. Pearson-correlation coefficient of t in nongroup data. 8. Estimation of parameters of the sample (π parameter and the parameter μ) 9. Student-t t-test for two independent large samples and in two proportions. 10. Linear trend of time series (for odd and even number of years) Seasonal index. 11. Calculating birth rates, fertility, mortality, morbidity, natural population growth. 12. Presentation of the statistical program.			
12.	Course methodology Small group work, homework, practical work, project assignments, discussion			
13.	Total time available:		4 ECTS x 30 h = 120 hours	
14.	Time allocation:		30+30+15+15 +30 = 120 hours	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 h
		15.2.	Practice (laboratory, auditory) seminars, team work	30 h
16.	Other activities	16.1.	Projects	15 h

		16.2.	Individual assignments	15 hours
		16.3.	Independent study	30 h

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: oral and written)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	English	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Jamie F.Dzhekel, David L.. Katz, Joan J. Elmore, Dorothea MJ Wilde	Epidemiology, Biostatistics and Preventive Medicine	Springer	2010
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

SECOND YEAR – SECOND SEMESTER (Elective course from List No. 2)

Course description - first, second and third cycle of study		
1.	Course title	Social Medicine

<table>
<tr><td>2.</td><td>Code</td><td colspan="4">3MF122912</td></tr>
<tr><td>3.</td><td>Programme of study</td><td colspan="4">Dental medicine</td></tr>
<tr><td>4.</td><td>Organiser of the study programme(unit/institute, department)</td><td colspan="4">Faculty of Medical Sciences
Department of Public Health and Health Protection</td></tr>
<tr><td>5.</td><td>Level of study (first, second, third cycle)</td><td colspan="4">Integrated studies of first and second cycle</td></tr>
<tr><td>6.</td><td>Academic year / Semester</td><td>II / II</td><td>7.</td><td>Number of ECTS credits</td><td>2</td></tr>
<tr><td>8.</td><td>Instructor</td><td colspan="4">Prof. Dr. Gorgi Shumanov</td></tr>
<tr><td>9.</td><td>Course prerequisites</td><td colspan="4"></td></tr>
<tr><td>10.</td><td colspan="5">Course objectives
The purpose of the course is to acquaint students with basic knowledge of the social and medical aspects of the most important diseases and damage to the health of the population.</td></tr>
<tr><td>11.</td><td colspan="5">Course content
<u>Theoretical instruction</u>
1. Development of social medicine and health care
2. Factors affecting the public health
3. Methodology for studying the health status of the population
4. Access methods for observation of the appearances and data collection
5. Organization of health care and healthcare service
6. Health and social protection of certain groups of the population
7. Features of acute infectious diseases with social and medical significance
8. Characteristics of chronic mass non-infectious diseases – I part
9. Characteristics of chronic mass non-infectious diseases – II part
10. Characteristics of the diseases of addiction and juvenile delinquency
11. Principles and action areas of health education
12. Methods and tools in medical training and work
<u>Practical instruction</u>
1. Health care systems
2. Methods and indicators for assessing the health status of the population
3. Types of statistical forms
4. International Statistical Classification of Diseases
5. Health organizations
6. Health workers and health assistants
7. Health care
8. Social medical significance of acute infectious diseases
9. Social medical significance of chronic non-infectious diseases
10. Health education
11. Health promotion
12. Methods of health education</td></tr>
<tr><td>12.</td><td colspan="5">Course methodology
Lectures, exercises, group discussions methods, individual assignments, seminar papers</td></tr>
<tr><td>13.</td><td colspan="2">Total time available:</td><td colspan="3">45</td></tr>
<tr><td>14.</td><td colspan="2">Time allocation:</td><td colspan="3">2+0+1 per week</td></tr>
</table>

15.	Instructional activities	15.1.	Lectures- theoretical classes	30 lecture per week
		15.2.	Practice (laboratory, auditory) seminars, team work	0
16.	Other activities	16.1.	Projects	5 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	5 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Cvetanov Vladimir	Social medicine-Health promotion	“Tabernakul” Skopje	1995
		3.	Shumanov Gorgi Danilova Marina	Social medicine		2010
	22.2	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Doncho Donev, Gordana Pavlekovic, Lijana Zaletel Kragelj, , Skopje	Health promotion and disease prevention		2007

Course description - first, second and third cycle of study

1.	Course title	Medical psychology			
2.	Code	3MF103312			
3.	Programme of study	Dental Medicine			
4.	Organizer of the study programme (unit/ institute, department)	Faculty of Medical Sciences, Goce Delcev University, Stip			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	second / second	7.	Number of ECTS	2
8.	Instructor	Prof. Dr. Lence MIloseva			
9.	Course prerequisites				
10.	Course objectives • To gain knowledge and understanding of the concepts, structure, psychological processes and personality changes through different developmental periods; knowledge and understanding of human behavior in dental medical settings, the person's reactions to illness. • To become familiar with basic concepts of stress; dental fear, phobia and anxiety and with methods and techniques for overcoming. • To become familiar with aesthetic significance of the mouth, teeth and smile for psychological development. • To gain knowledge about psychological aspects of pain and psychological methods of coping with pain in dental medical practice. • To become familiar with biopsychosocial model of health, psychological aspects of somatic diseases, and some of the most common mental disorders. • To become familiar with the dentist and patient personality profiles and to develop communication skills (dentist/patient). Learn about doctor-patient communication and its importance in improving adherence to recommended health behaviors.				
11.	Course content *General part* • Introduction to Medical Psychology. Medical Psychology and Dental Medicine. • Human development –implication for dental practice. Child psychology. Child as a patient. Psychology of adulthood and aging. Adult as a patient. Geriatric patient. • Aesthetic significance of the mouth, teeth and smile for psychological development. • Psychological aspects of pain and psychological methods of coping with pain in dental practice. • Dentist personality profiles. Patient personality profiles. Communication dentist/ patient. *Special part* • Overview of mental disorders and clinical -DSM- IV-TR (APA, 2000) & MKB - 10/ICD-10 (WHO,1997) diagnostic classification. Treatment of patients with mental disorders. • Stress: prevention and treatment. • Dental fear, dental phobia and anxiety in dental practice. Treatment and techniques for overcoming. • Psychological-psychopathological aspects of functional disorders (TMJ).				

	• Aesthetic and cosmetic dentistry-the role of psychological factors. Plastic, reconstructive surgery, maxillofacial surgery, self-perception and psychological experience of the body. • Anaesthesia and patient reaction. *Seminars* -Biomedical vs. biopsychosocial model of health. -Communication: verbal and non-verbal elements. Importance of concordance between verbal and non-verbal behavior. Specific of communication between doctor and patient: interaction to doctor's presumed roles, various kinds of anamnesis and their utility. Difficult patients. Identification of problematic behavior. Description of main personality disorders and their attitude towards doctors and medical institutions. Communication with difficult patients (workshops). - Patients with mental disorders. Abused and neglected children and adolescents. Approach and treatment in medical settings -Psychological preparation for medical investigation and surgery interventions. - Child as a patient; Adult as a patient; Geriatric patient (workshops) . - Quality of life. - Oral health promotion across life-span cycle. - Presentation of case study			
	Course methodology Interactive method: group work, reports, homework, seminar papers, discussion, debate, cooperative studying techniques, individual assignments			
13.	Total time available:			
14.	Time allocation:		1+1+1	
15.	Instuctional activities	15.1.	Lectures- theoretical classes	15 Interactive lectures
		15.2.	Practice(laboratory, auditory) seminars, team work	15 Seminars, visits
16.	Other activities	16.1.	Projects	5
		16.2.	Individual assignments	5
		16.3.	Independent study	5
17.	Assessment			
	17.1.	Tests		
	17.2.	Seminar paper/project (presentation: oral and written)		
	17.3.	Attendance and participation		
	17.4.	Oral exam		
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70points	7
			from 71to 80 points	8
			from 81to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	

20.	Language of instruction	Macedonian
21.	Course evaluation	Self-evaluation

22.	Literature:					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Zarevski, P., Škrinjarić,I, & Vranić, A.	Psihology for Dental medicine	Jastrerbarsko: Naklada Slap	2005
		2.	Nietzel, M.T., Bernstein, D.A. & Milich, R.	Introduction in clinical psihology	Jastrerbarsko: Naklada Slap	2002
		3.	Miloseva L.	developmental Psychology	Stip Ugd	2013

Course description - first, second and third cycle of study					
1.	Course title	Introduction to scientific research			
2.	Code	3MF122112			
3.	Programme of study	Dental medicine			
4.	Organiser of the study programme(unit/institute, department)	Faculty of Medical Sciences Department of Public Health and Health Protection			
5.	Level of study(first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / Semester	Second / second	7.	Number of ECTS	2
8.	Instructor	Prof. Dr. Milka Zdravkovska			
9.	Course prerequisites	None			
10.	Course objectives Acquiring knowledge for the basic methods and methodology of scientific research; Using biomedical databases and practicing evidence based medicine; Acquiring skills for doing researches; Implementation of a research project; Rules for preparation of a manuscript for publication of results of a scientific research; Rules and preparation for a successful presentation of a scientific labour in the form of oral or poster presentation.				
11.	Course content <u>Theoretical instruction</u> 1. Basic terms of science and scientific method 2. Ethics and responsible behavior in the scientific research 3. Epidemiological methods in the scientific research				

	4. Types of researches – Design of studies 5. Using biomedical databases and practicing evidence based medicine 6. Strategies for searching literature 7. Planning and implementation of scientific research 8. Scientific labour – classification of the papers 9. Parts of scientific labour 10. Preparing for manuscript and publication 11. Quoting references 12. Writing style and presentation of the scientific labour <u>Practical instruction</u> 1. Ethics in the scientific research: case reports and discussion 2. Internet research – using biomedical databases 3. Strategies for searching literature 4. Critical analyses of a paper (example from published papers) 5. Planning a research 6. Ways of collecting information - constructing a questionnaire 7. Project assignment for a scientific research project for a given hypothesis - small groups work 8. Presentation of the project assignments – critical analysis 9. Presentation of the project assignments – critical analysis 10. Independently making an abstract from published papers (in extenso) 11. Presentation of abstracts – critical analysis 12. Oral/Poster presentation of the scientific labour			
12.	Course methodology Lectures, exercises, methods of group discussions, individual assignments, seminar papers, presentation of scientific papers;			
13.	Total time available:		45	
14.	Time allocation:		2 + 0 + 1	
15.	Instructional activities	15.1.	Lectures- theoretical classes	15
		15.2.	Practice (laboratory, auditory) seminars, team work	
16.	Other activities	16.1.	Projects	5
		16.2.	Individual assignments	5 lecture per week
		16.3.	Independent study	5
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper/project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Zdravkovska Milka	Authorized lectures		
		2.	Marusik et all	Introduction in health work in medicine	Zagreb	2004
		3.	Mirko Spiroski	Scientific paper - to write and publish	Skopje	2002
	22.2	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study

1.	Course title	Health ecology and hygiene
2.	Code	3MF120912
3.	Programme of study	Dental Medicine
4.	Organizer of the study programme (unit/institute, department)	University “Goce Delcev” - Stip Faculty of Medical Sciences Department of fundamental medical science

5.	Level of study (first, second and third cycle)	First cycle			
6.	Academic year / semester	2013/2014 fourth semester	4.	Number of ECTS credits	2
8.	Instructor	Assoc. Prof. Nevenka Velickova			
9.	Course prerequisites	Enrolled in second year of studies			
10.	Course objectives The purpose of this course is for the students to gain basic knowledge from the area of medical ecology, the protection of the environment and hygiene.				
11.	Course content • Introduction to ecology • Public health aspect of environment risks • Air pollution and public health aspect of air pollution • Water hygiene and public health aspect of water supply and sanitation • Public health aspect of surface water and swimming and recreation water • Public health aspect of waist; public health aspect of soil • Public health aspect of school hygiene • Public health aspect of ionizing and nonionizing radiation • Health-ecological aspects of noise • Hygiene in public and communal facilities • Education facilities hygiene • Health facilities hygiene				
12.	Course methodology Lectures,exercises,seminar paper and practical activities				
13.	Total time available:	45hours			
14.	Time allocation:	1+1+1 / per week			

15.	Instructional activities	15.1.	Lectures- theoretical classes	15 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	0 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	15 hours
		16.3.	Independent study	0 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper / project (presentation: written and oral)	10 points
	17.3.	Activity and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature	
	22.1.	Required materials

		Ordinal number	Author	Title	Publisher	Year
		1.	Michail Kocubovski	Hygiene with medical ecology	University of Goce Delcev - Stip	2011
		2.	R. Čosic	Udzbenik Higiene		1983
		3.	Milto Mulev	Protection of the environment		1997
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Kocijancic Radojka	Hygiene	Zavod za udzbenike I nastavna sredstva, Beograd	2002

TIRTH YEAR - FIRST SEMESTER (Elective course from List No. 3)

Course description - first, second and third cycle of study					
1.	Course title	Ergonomics			
2.	Code	3MF161612			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences Department of dental and oral diseases, parodontology and pediatric dentistry			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Third / first	7.	Number of ECTS credits	2
8.	Instructor	Prof. Dr. Lidija Popovska			
9.	Course prerequisites				
10.	Course objectives The students should learn how to use the good working ergonomics in their future professional occupation, how to chose equipment for dental office, avoid static and/or awkward postures, reduce the chances for overexertion injury, increase workers' skills / knowledge of their jobs to re-design work to increase their satisfaction, comfort and fulfillment.				
11.	Course content <u>Theoretical instruction</u> 1. Introduction to ergonomics 2. Ergonomic concepts and methods				

	3. Ergonomics in the dental practice 4. Ergonomics design in dental office, workspace and instruments 5. Posture and movements in the work of the dentist and dental team and the application of ergonomics at work 6. Four-hand dentistry 7. Organization of work according to ergonomic criteria (time, breaks, administration, rate of work) 8. Hygiene, disinfection and sterilization according to ergonomic criteria 9. Risk factors in dental practice, methods for prevention 10. Occupational diseases 11. Musculoskeletal disorder among dental staff-neck and spine 12. Musculoskeletal disorder among dental staff –hand, arm, wrist <u>Practical instruction</u> 1.Recognition of ergonomics in everyday life-interactive teaching 2. Practical examples of the development of ergonomic concepts and methods 3. Demonstration of different types of units and instruments according to ergonomic concepts, tips for choice when equipping dental office 4. Exercises for taking proper posture by sitting and standing at work 5. Stretching exercises in the workplace 6. Contact of dentist and dental team with patients (fear, confidence, aggression) 7.Examples of the organization of work in a dental office with one or more working places 8. Demonstration and practicing four-hand dentistry (competence of the dentist and dental assistant) 9. Methods to prevent the risk factors in the workplace 10.Practical approach to the maintenance of hygiene, disinfection and sterilization in dentistry, methods of receiving, sterilizing and storing instruments 11. Practical tips and tricks to avoid musculoskeletal disorders 12. Exercises to strengthen the most vulnerable groups of muscles			
12.	Course methodology Lecture, discussion, debate, cooperative learning techniques, individual assignments, independent study			
13.	Total time available:		36	
14.	Time allocation:		1+1+1 (per week)	
15.	Instructional activities	15.1.	Lectures- theoretical classes	12 classes
		15.2.	Practice (laboratory, auditory) seminars, team work	12 classes
16.	Other activities	16.1.	Projects	4 classes
		16.2.	Individual assignments	4 classes
		16.3.	Independent study	4 classes
17.	Assessment			
	17.1	Tests		70 (40+30) classes

	17.2	Seminar paper / project (presentation: written and oral)	20 classes
	17.3.	Attendance and participation	10 classes
18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Popovska Lidija	Authorized lectures in ergonomics	UGD 2013 (e-learning)	2011/12
		2.	Occupational Health Safety Council of Ontario (OHSCO)	ERGONOMICS AND DENTAL WORK	Part 1:MSD Prevention Guideline for Ontario.	1998
		3.	Anton D, Rosecrance J, Merlino L, Cook T.	Prevalence of musculoskeletal symptoms and carpal tunnel syndrome among dental hygienists	American Journal of Industrial Medicine. Sep; 42(3):248-57.	2004
		4.	Belenky MM. Human-Centered Ergonomics:	Proprioceptive pathway to occupational health and peak performance in dental practice. in: Ergonomics and the Dental care worker.	Denise Murphy Ed. American Public Health Society. Washington,	1998.
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Branislav Dashtevski	Voved vo stomatologija	Stomatoloski fakultet-Skopje	2002

Course description - first, second and third cycle of study						
1.	Course title	Oral hygiene				
2.	Code	3MF161712				
3.	Programme of study	Dental medicine				
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences				
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	Third / first	7.	Number of ECTS credits	2	
8.	Instructor	Prof. Dr. Minovska Ana				
9.	Course prerequisites	Enroled in third year of studies				
10.	Course objectives To familiarize students with the methods of assessment, home and ambulatory maintainance and improvement of oral hygiene					
11.	Course content • Introduction to the course and process of patient care • Anamnestic data related to oral hygiene and dental plaque detection • Indices of dental plaque • Indices of tartar • Plaque control • Maintaining oral hygiene at home • Techniques of brushing teeth • Caring for interdental spaces • Pharmacological agents in the maintenance of oral hygiene • Pigmentation of the teeth and their removal • Outpatient removal of dental plaque • Pigmentation of the teeth and their removal • Maintenance of oral hygiene in orthodontic, prosthetic implants and patients with • Maintenance of oral hygiene for patients with special needs • Motivation, re-motivation of pacients, maintenance and evaluation of results					
12.	Course methodology Lectures, clinical practice,theoretical exercises					
13.	Total time available:					
14.	Time allocation:	1+1+1				
15.	Instructional activities	15.1.	Lectures- theoretical classes	12 hours		
		15.2.	Practice (laboratory, auditory) seminars, team work	24 hours		
16.	Other activities	16.1.	Projects	hours		

		16.2.	Individual assignments	hours
		16.3.	Independent study	hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper / project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Minovska A et all	Oral hygienic	Faculty of Dentistry Skopje	2004
		2.	Murray JJ, Nunn JH, Steele JG.	The Prevention of Oral Disease	Fourth Edition, Oxford University Press Inc., New York	2003
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Dimova Cena	Prophylaxis of oral diseases	UGD, FMN	2013
		2.	Ivanovski K, Pandilova M.	Oral health	Faculty of Dentistry Skopje	2008
		3.	Carcev M.	Preventive dentistry	Faculty of Dentistry Skopje	2006

Course description - first, second and third cycle of study						
1.	Course title	Sociology of health and illness				
2.	Code					
3.	Programme of study	Dental medicine				
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev				
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	III / I	7.	Number of ECTS credits	2	
8.	Instructor	Prof. Dr. Vlado Petrovski				
9.	Course prerequisites					
10.	Course objectives Curriculum contributes mainly to the development of the following general and specific competences: Teaching units contribute mainly to the development of the following general and specific competences -To provide students with knowledge of basic features of the sociology of medicine; -Be familiar with health and disease as the subject of the Sociology of medicine; -To gain knowledge about mental health and mental illness; -Students to learn the relationship between the patient-doctor; -To gain knowledge of alternative medicine.					
11.	Course content Sociology of medicine, and development goals The ratio of the Sociology of health and illness and related sciences; Origin and development of the Sociology of health and illness; Basic content and categories of Sociology of health and illness; Concepts of disease; Mental health and mental illness; Doctor-patient relationship; Professions and professionalization of medical practice; Alternative Medicine;					
12.	Course methodology Lectures, exercises, debates, discussions, essays, consultation, individual and group work, seminar papers and presentations					
13.	Total time available:	152				
14.	Time allocation:	2+2+1				
15.	Instructional activities	15.1.	Lectures- theoretical classes	2hours		

		15.2.	Practice (laboratory, auditory) seminars, team work	2hours
16.	Other activities	16.1.	Projects	hours
		16.2.	Individual assignments	1 hour
		16.3.	Independent study	hours

17.	Assessment		
	17.1.	Tests	40 points
	17.2.	Seminar paper / project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	.Kostovski, B.Sarkanjac	Sociology of medicine	Skopje:	1999
		2.	M.Tasheva	Sociology	Faculty of Philosophy - Skopje	2003
		3.	V.Petrovski	Sociology	Faculty of Education - Stip	2006
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	D.Markovikj	General Sociology	Nis	2011

THIRTH YEAR – SECOND SEMESTER (Elective course from List No. 4)

Course description - first, second and third cycle of study						
1.	Course title	Anesthesiology				
2.	Code					
3.	Programme of study	Dental Medicine				
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences				
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	third / second	7.	Number of ECTS credits	2	
8.	Instructor	Prof. Dr. Ordan Nojkov				
9.	Course prerequisites	Enrolled in fourth year of studies				
10.	Course objectives Students are introduced to basic and modern methods in anesthesiology practice and the basic principles and procedures of resuscitation.					
11.	Course content <u>Theoretical instruction</u> 1. Introduction . Types of anesthesia 2. Drugs used in anesthesia and their influence on the organism 3. Anesthesiological examination and preparation for anesthesia 4. Perioperative monitoring and management of patients in anesthesia 5.Postanesthisology recovery and complications 6. Regional anesthesia 7. Escort and local anesthesia 8. Resuscitation, basic life support 9. Resuscitation, advanced life support 10. Intensive treatment of comatose ill 11. Intensive treatment of sick with respiratory failure 12. Intensive treatment of sick with electrolyte imbalance and shock					
12.	Course methodology Lectures, interactive teaching: lectures in large groups, discussions and engaging students. Multimedia presentation. E-learning. Individual consultations with students and consultation groups, practical instruction					
13.	Total time available:	2 ECTS x 30 h = 60 hours				
14.	Time allocation:	30+0+15+5+10 = 90 hours Lectures 30 hours, Project work 15 hours Independent study 10 hours				
15.	Instructional activities	15.1.	Lectures - theoretical classes	30 hours		
		15.2.	Practice (laboratory, auditory) seminars, team work			
16.	Other activities	16.1.	Projects	15 hours		
		16.2.	Individual assignments	5 hours		
		16.3.	Independent study	20 hours		
17.	Assessment					

	17.1.	Attendance	maximum10 points
	17.2	Exercises and activities	maximum 10 points
	17.3	Exams	maximum 2 x 20 point
	17.4.	Seminar paper / project (presentation: written and oral) optional	maximum 10 points
	17.5	Practical exams	maximum 10 points
	17.6	Final exam	maximum 30 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Lalevic	Anestesiologija	Zavod za udzbenike, Beograd	1999
		2.	D. Vucovic	Intenzivna terapija	Zavod za udžbenike I nastavna sredstva	1998
	22.2.	Supplementary materials				
		Ordinal number.	Author	Title	Publisher	Year
		1.	Robert K. Stoelting Ronald D. Miller	Basics of Anesthesia: with Evolve Website, 5e	Churcil Livingstone Elsevier	2007

Course description - first, second and third cycle of study		
1.	Course title	Community dentistry
2.	Code	3MF160512
3.	Programme of study	Dental medicine

4.	Organizer of the study programme (unit/ institute, department)	Faculty of Medical Sciences				
5.	Level od study (first, second, third cycle)	Integrated studies of first and second cycle				
6.	Academic year / semester	Third / second	7.	Number of ECTS credits	3	
8.	Instructor	Assoc. prof. Stipica Popovski				
9.	Course prerequisites	Enrolled third year				
10.	Course objectives The course objective is for students to acquire basic knowledge of the organization of dental health community service.					
11.	Course content <u>Theoretical instruction</u> - Organization of a dental healthcare service, law of health protection . - Registration and formation of health care organizations. - Organization of dental services by age groups. - Medical administration. - Index for registration of findings of caries, changes of the soft parts of the oral cavity. - Organization of systematic dental care. - Planning the extent of the service (as preventive and therapeutic purposes). - Regulations for records and statistics in the field of school children. - Content of dental enlightenment - purpose tasks. - Content of dental enlightenment by age groups. - Difficulties in conducting dental enlightenment. - Applying knowledge of the dental service organization. <u>Practical instruction</u> - Organization of dental healthcare service, law of health protection. - Registration and formation of health care organizations. - Organization of dental services by age groups. - Medical administration. - Index for registration of findings of caries, changes of the soft parts of the oral cavity. - Organization of systematic dental care. - Planning the extent of the service (as preventive and therapeutic purposes). - Regulations for records and statistics in the field of school children. - Content of dental enlightenment - purpose tasks. - Content of dental enlightenment by age groups. - Difficulties in conducting dental enlightenment. - Applying knowledge of the dental service organization					
12.	Course methodology Lectures, auditorial exercises, consultations.					
13.	Total time available:	3x30				
14.	Time allocation:	30+15+15+5+25=90				
15.	Instructional activities	15.1.	Lectures – theoretical classes	30 hours		

		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	25 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: written and oral)	10 points
	17.3.	Attendance and participation	10 points

18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.		Communitiy dentistry		
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study		
1.	Course title	Medical ethics
2.	Code	3MF121712
3.	Programme of study	Dental medicine
4.	Organizer of the study programme(unit/ institute, department)	Faculty of Medical Sciences

5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Third / second	7.	Number of ECTS credits	3
8.	Instructor	Assoc. Prof..Gordana Panova			
9.	Course prerequisites	Enrolled in second year			
10.	Course objectives Adoption of basic ethical and sociological knowledge of medicine and work in medicine, training future professional nurses / technicians for observation and treatment and care of the patient as a complex bio unit.				
11.	Course content Conceptual frame of medicine, historical overview of medicine as a science and practice. Clinical Medicine and ethical problems of clinical work. History of medical ethics: Hippocratic Oath and its historical implications, Geneva revision of the Hippocratic Oath and ethical codes. Medical ethics in practice: specificities of medical ethics, deontology, medical secret, shared secret, iatrogenesis, euthanasia, ethical and legal responsibility of the physician, the ethics of medical research, medical law: basic issues and aspects.				
12.	Course methodology Lecture, exercises, consultations				
13.	Total time available:	3 ECTS x 30 h = 90 hours			
14.	Time allocation:	30+15+15+5+25 = 90 hours			
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours	
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours	
16.	Other activities	16.1.	Projects	15 hours	
		16.2.	Individual assignments	5 hours	
		16.3.	Independent study	25 hours	
17.	Assessment				
	17.1.	Tests	2x20=40 points		
	17.2.	Seminar paper/project (presentation: oral and written)	1- 10 points		
	17.3.	Attendance and participation	5 points		
18.	Grading System	up 50points	5		
		from 51 to 60 points	6		
		from 61 to 70 points	7		
		from 71 to 80 points	8		
		from 81 to 90 points	9		
		from 91 to 100 points	10		
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)			
20.	Language of instruction	Macedonian			
21.	Course evaluation	Self-evaluation			

22.	Literature				
	22.1.	Required materials			
		Ordinal number	Author	Title	Publisher	Year
		1.	Panova	Medical ethics and deodontology	UGD-Stip	2010
		2.	K.R.Seturman	Communication skills in clinical practice	Tabernakul	2010
	22.2.	Supplementary materials			
		Ordinal number	Author	Title	Publisher	Year
		1.	Marcia Lewis Carroll	Tamparo Medical Law, Ethics and Bioethics Academic Press,	Tabernakul-Skopje	2010
		2.	Marich John Medical	Ethics,	Faculty of Medical Sciences, Belgrade,	2005

Course description - first, second and third cycle of study					
1.	Course title	First medical aid			
2.	Code	3MF111112			
3.	Programme of study	Dental Medicine			
4.	Organizer of the study programme(unit/ institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Third / second	7.	Number of ECTS credits	3
8.	Instructor	Assoc. Prof. Velo Markovski			
9.	Course prerequisites				
10.	Course objectives Learning the skills to save the life of wounded, and prevent form further injury and complications, perform triage and provide first aid in mass disasters, learning the skills for heart,lung and brain resuscitation				
11.	Course content 1. Introduction to cardiac pulmonary resuscitation 2. Acute respiratory failure 3.Acute Cardiac Arrest (CA) 4. Basiclife support 5. Advanced life support				

	6. Prolonged life support 7. First aid in poly-trauma and fracture 8. First aid in bleeding 9. First aid in burns; 10.First aid for frost bite, drowning 11.First aid for damage from acid 12.First aid and triage in mass disasters			
12.	Course methodology Theoretical and practical lectures			
13.	Total time available:		3 EKTS x 30 h = 90 hours	
14.	Time allocation:		30+15+15+5+25=90	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	25 hours

17.	Assessment		
	17.1.	Tests	70 points
	17.2.	Seminar paper/project (presentation: oral and written)	10 points
	17.3.	Attendance and participation	20 points

18.	Grading System	to 50points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Velo Markoski	Authorised lectures	UGD	2011

		2.	Sosolceva	Cardiac pulmonary and Cerebral resuscitation	Departement of anesthesiology, Faculty of Medical Sciences, Skopje	2003
		3.				
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.				

FOURTH YEAR – FIRST SEMESTER (Elective course from List No. 5)

Course description - first, second and third cycle of study					
1.	Course title	Pediatrics- selected topics			
2.	Code	3MF110712			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences Dental medicine			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	IV / first semester	7.	Number of ECTS credits	2
8.	Instructor	Prof. Dr. Elizabeta Zisovska			
9.	Course prerequisites	finished sixth and enrolled seventh semester			
10.	Course objectives Introduction to Pediatrics- selected topics regarding the specifics of the child as a patient,its growth, and the diseases of the particular systems in the pediatric age, diagnosis and therapy.				
11.	Course content <u>Theoretical instruction</u> -Patogenetic mechanisms of the diseases, -Approach to the pediatric patient in dentistry, -The most frequent diseases in the children's age -Diseases of the respiratory system in children - Diseases of the cardiovascular system in children -Diseases of the gastrointestinal system in children - Diseases of the oral cavity and the mouth				

	-Endocrine diseases of the childhood -Growth and development delays -Detection of disabled children -Methods of therapy. -Rational use of medicines in children <u>Practical instruction</u> -Specifics within the pediatric history -Physical examination, special attention to the diseases of the oral cavity -Integrative approach to the pediatric patient in dentistry -Diagnostic methods in childhood -Case scenarios, detecttion of the growth disturbances, use of the growth curves -Patients and case scenarios of the respiratory and cardiovascular pathology -Patients and case scenarios of the pathology in GIT and UGT in childhood - Diseases of the endocrine and locomotor system -Diseeases of the oral cavity in children of different ages 'chromosomopathies, inherited diseases and their impact on the oral diseases -Growth and development delays, detection of the disabled children -Methods of therapy, rational use of medicines in children			
12.	Course methodology -lectures, -practical units at the Department of Pediatrics -problem based learning, -computer learning, -detailed work out of a particular topic and writing a paper on that, consultation			
13.	Total time available:		2x30=60	
14.	Time allocation:		30+0+15+5+10=60	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	0 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	5hours
		16.3.	Independent study	10 (individual) hours
17.	Assessment			
	17.1.	Tests		40 points
	17.2.	Seminar paper / project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		20 points
	17.4	Oral examination		30 points
18.	Grading system		to 50 points	5

		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Zitelli B.G and Davis H. V	Atlas for pediatric physical diagnostics	Tabernacul	2011
		2.	Mardesic D and all.	Pedijatrija, 6-th Ed.	Skolska knjiga, Zagreb	2003
		3.	Stojimirovik E at all	Pedijatrija	Savremena administracija Belgrade	1993
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Korak D. et all.	Pedijatrija	Savremena administracija Belgrade	1983
		2.	Zergollern L, Votava-Raic A, et all	Pedijatrija 1-2	Lijevak-Naprijed, Zagreb	1993
		3.	Internet based resources	www.who.int www.unicef.org		

Course description - first, second and third cycle of study		
1.	Course title	Introduction to ophthalmology
2.	Code	3MF130512
3.	Programme of study	Dental Medicine
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle

6.	Academic year / semester	Fourth / first	7.	Number of ECTS credits	2
8.	Instructor	Prof. Dr. Milica Ivanovska			
9.	Course prerequisites	Enrolled in fourth year of studies			
10.	Course objectives Introduction to the basic procedures for diagnosing eyes diseases and their treatment				
11.	Course content - Inflamations of the anterior segment of the eye - Degenerations and tumors of the anterior segment of the eye - Diseases of the orbit - Glaucoma - Cataract - Vascular diseases of the retina - Diabetic rethinopathy - Degenerations of the posterior segment of the eye - Retinal detachment - Tumors of the eye - Optic nerve diseases - Eye trauma - Refractive disorders				
12.	Course methodology Theoretically interactive lectures, making individual project assignments (papers), research.				
13.	Total time available:	2 ECTS x 30 h = 60 hours			
14.	Time allocation:	30+0+15+5+10 = 90 hours Lectures 30 hours, Project work 15 hours Independent study 10 hours			
15.	Instructional activities	15.1.	Lectures - theoretical classes	30 hours	
		15.2.	Practice (laboratory, auditory) seminars, team work		
16.	Other activities	16.1.	Projects	15 hours	
		16.2.	Individual assignments	5 hours	
		16.3.	Independent study	20 hours	
17.	Assessment				
	17.1.	Attendance	maximum10 points		
	17.2	Exercises and activities	maximum 10 points		
	17.3	Tests	maximum 2 x 20 point		
	17.4.	Seminar paper / project (presentation: written and oral) optional	maximum 10 points		
	17.5	Practical tests	maximum 10 points		
	17.6	Final exam	maximum 30 points		
18.	Grading system	to 50 points	5		
		from 51 to 60 points	6		
		from 61 to 70 points	7		

		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	J.K. Kanski	Clinical ophthalmology	Elsevier	2012
		2.	S. Bratford	Basic concepts in ophthalmology		2010
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Spalton	Ophthalmological atlas		2010

FOURTH YEAR – SECOND SEMESTER (Elective course from List No. 6)

Course description - first, second and third cycle of study					
1.	Course title	Aesthetic dentistry			
2.	Code	3MF150312			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme (unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Fourth / second	7.	Number of ECTS credits	3
8.	Instructor	Assoc. Prof. Stipica Popovski			
9.	Course prerequisites	Enrolled in fourth year of studies			
10.	Course objectives				

	The objectives of the course are the principles of aesthetics, facial, dental and gingival elements, lines of lips, smile lines.			
11.	Course content <u>Theoretical instruction</u> - Aesthetics as a function of the masticatory system . - Principles of Aesthetics - Elements of a dento - facial aesthetics - Analysis of the dynamics of facial features - Dental elements and morphology - Gingival elements. Physical elements - Dentofacial relations - Aesthetics of teeth and tooth rows - Aesthetics in total and partial prosthesis - Aesthetics in crowns - Aesthetics in bridge constructions - Preparations and prints the aesthetic aspect <u>Practical instruction</u> - Aesthetics as a function of the masticatory system . - Principles of Aesthetics - Elements of a dento- facial aesthetics - Analysis of the dynamics of facial features - Dental elements and morphology - Gingival elements. Physical elements - Dentofacial relations - Aesthetics of teeth and tooth rows - Aesthetics in total and partial prosthesis - Aesthetics in crowns - Aesthetics in Bridge constructions - Preparations and prints from aesthetic aspect			
12.	Course methodology Lectures, auditorial exercises, consultations.			
13.	Total time available:		3EKTSx30hours=90hours	
14.	Time allocation:		30+15+15+5+25=90hours	
15.	Instructional activities	15.1.	Lectures – theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	25 hours
17.	Assessment			
	17.1.	Tests		70 points
	17.2.	Seminar paper/project (presentation: written and oral)		10 points

	17.3.	Attendance and participation	10 points
18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.		Authorized lectures		2008
		2.	Mercev E.	Preclinical fixed prosthodonics	Faculty of dentistry, Skopje	2001
		3.	Trifuovic D, Vujosevic	Dental prosthodontics-fixed upgrades	European centre for piece and development Beograd	1998
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Radulovic-Pantelic	Dental prosthodontics-fixed upgrades second part	Zavod za graficku tehniku, Tehnolosko-Metalurskog fakulteta , Beograd	1998
		2.				

Course description - first, second and third cycle of study

1.	Course title	Management in dentistry			
2.	Code	3MF155512			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme (unit/ institute, department)	Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Fourth / second	7.	Number of ECTS credits	3
8.	Instructor	Prof. Dr. Minovska Ana			
9.	Course prerequisites	Enrolled in fourth year of studies			
10.	Course objectives Understanding of the role of management in the activities and development of health care subjects.				
11.	Course content <u>Theoretical instruction</u> - The content and methodology of the subject area - Recognition of the role of management in activities and development health subjects - Promoting and developing a sense of active involvement in the area - Ability for communication, collaboration and teamwork - Flexible use of knowledge in the scientific and practical activities - Creating principle of autonomy (self-) critical (self-) assessment - Developing feelings for clear and open communication - Improving the quality of all activities - Raise awareness of cooperation and concern for others - Develop a sense of creative thinking - Solving problems - Proficiency with content and methodology of the subject area <u>Practical instruction</u> - The content and methodology of the subject area - Recognition of the role of management in activities and development health subjects - Promoting and developing a sense of active involvement in the area - Ability for communication, collaboration and teamwork - Flexible use of knowledge in the scientific and practical activities - Creating principle of autonomy (self-) critical (self-) assessment - Developing feelings for clear and open communication - Improving the quality of all activities - Raise awareness of cooperation and concern for others - Develop a sense of creative thinking - Solving problems - Proficiency with content and methodology of the subject area				

12.	Course methodology Lectures, preclinical laboratory exercises, consultations.			
13.	Total time available:		3x30=90	
14.	Time allocation:		30+15+15+5+25=90	
15.	Instructional activities	15.1.	Lectures – theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	25 hours
17.	Assessment			
	17.1.	Tests		40 points
	17.2.	Seminar papare/project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		10 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Petkovski, Simonovska	Healthcare management		2008
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study					
1.	Course title	Emergency situations in dentistry			
2.	Code	3MF155012			
3.	Programme of study	Dental medicine			
4.	Organizer of the study program (unit/institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Fourth / second	7.	Number of ECTS credits	3
8.	Instructor	Assoc. Prof. Cena Dimova			
9.	Course prerequisites	Enrolled in fifth year of studies			
10.	Course objectives Emergency situations in medicine and dentistry, their timely diagnosis, differential diagnosis and therapy, concepts in emergencies in the dentistry. Introduce students to diagnose emergency conditions related to dental practice, differential diagnosis and treatment of the same procedure in the diagnosis and treatment of painful conditions in the area of the face and jaw, with special emphasis on diagnosis and treatment of pain associated with odontalgia. One of the goals of this course is to introduce students to the procedures for bleeding of face and neck, and the basics of diagnosis of injuries in the area of the face, jaw and neck. Part of the course includes introduction to emergency situations that may occur during dental practice, their diagnosis, and the procedures that are expected of a dentist in these situations.				
11.	Course content <u>Theoretical instruction</u> - Introduction, definition of emergency situations in medicine and dentistry, - Painful conditions. Bleeding types, division, treatment. - Complications and incidents during the general anesthesia - Common complications and incidents during of local anesthesia - Local complications and incidents during of local anesthesia - Allergic reaction in carrying local anesthesia. Allergic shock. Toxic reactions to local anesthesia - Syncope, collapse,epileptic seizure, hysterical attack - Emergency cardiovascular respiratory conditions(cardiac arrest, respiratory arrest) - Emergency situations during dental therapy. Acute dental infection				

	- Injuries to the soft tissues of the oral cavity - Injuries of the teeth - Periodontal tissue injuries of the teeth, jaw injuries - Treatment of HIV +and hepatitis (HCV+, HBV+) patients			
12.	Course methodology Lectures, auditoria exercises, consultations.			
13.	Total time available:		3EKTSx30hours=90hours	
14.	Time allocation:		30+15+15+5+25=90hours	
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	25 hours
17.	Assessment			
	17.1.	Tests		(20+20+30)=70 points
	17.2.	Seminar paper/project (presentation: oral and written)		10 points
	17.3.	Attendance and participation		20 points
18.	Grading system		to 50points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature

	22.1.	Required materials				
		Ordinal number.	Author	Title	Publisher	Year
		1.	Dimova Cena	Emergencies in the dentistry practice	UGD	2013
		2.	Petrovic M, Gavric	Emergencies in the dental practice	IK Draganic, Beograd	2001.
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Todorovic et all	Oral surgery	Nauka, Beograd	2002
		2.	Peterson L.	"Contemporary Oral and Maxillofacial Surgery", 3rd ed.,	Mosby	1998.

FIFTH YEAR – FIRST SEMESTER (Elective course from List No. 7)

Course description - first, second and third cycle of study					
1.	Course title	Occupational medicne			
2.	Code	3MF121612			
3.	Programme of study	Dental Medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	Fifth / first	7.	Number of ECTS credits	2
8.	Instructor	Assoc. Prof. Jovana Karadzinska-Bislimovska			
9.	Course prerequisites	Enrolled fifth year			
10.	Course objectives Acquiring theoretical and practical knowledge from the area of occupational medicine				
11.	Course content <u>Theoretical instruction</u> 1. Physiological and psychological aspects of occupation 2. Ergonomic principles of work place. Occupational risks 3. Analyses and health assessment of working environment and risk assessment 4. Ecological and biological monitoring. Readiness of workers for response in danger situations 5. Assessment of work ability. Health and security in work 6. Occupational diseases, diseases in work, injuries at work 7. Chemical factors of work environment – occupational toxicology				

	8. Physical factors of work environment – noise, non-ionizing radiation, ionizing radiation and vibrations 9. Occupational intoxications: gases, organic dissolvent, cadmium, manganese, chrome, nickel, beryllium 10. Occupational intoxications: led and compounds, mercury and compounds and pesticides 11. Occupational malignant diseases 12. Allergic alveolitis. Occupational dermatoses.			
12.	Course methodology Lectures, interactive teaching: lectures in large groups, discussions and engaging students. Multimedia presentation. E-learning. Practical exercises, Individual consultations with students and consultation in groups, practical instruction			
13.	Total time available:		2 ECTS x 30 h = 60 hours	
14.	Time allocation:		15+15+15+5+10 = 90 hours Lectures 30 hours, Practical exercises, Project work 15 hours Independent study 10 hours	
15.	Instructional activities	15.1.	Lectures - theoretical classes	15 hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	15 hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	20 hours
17.	Assessment			
	17.1.	Attendance		maximum10 points
	17.2	Exercises and activities		maximum 10 points
	17.3	Exams		maximum 2 x 20 point
	17.4.	Seminar paper / project (presentation: written and oral) optional		maximum 10 points
	17.5	Practical exams		maximum 10 points
	17.6	Final exam		maximum 30 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature

	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	J. Karadzinska-Bislimovska, J. Minov, S. Risteska-Kuc, D. Mijakoski, S. Stoleski	Occupational medicine	Medical Faculty Skopje	2011
		2.				
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study					
1.	Course title	Patients at risk for dental interventions			
2.	Code	3MF154712			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme (unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / I	7.	Number of ECTS credits	2
8.	Instructor	Prof. Dr. Ana Minovska			
9.	Course prerequisites	Enrolled fourth year			
10.	Course objectives Diagnosis and differential diagnosis in patients at risk for dental interventions.				
11.	Course content <u>Theoretical instruction</u> - Neurological conditions with an urgent nature - Dizziness, headache, acute cerebral vascular stroke, coma, brain death. - EPI - Status - Internal conditions with urgent character - Infectious conditions with urgent character - Neuro-surgical conditions with urgent character - Dental painful conditions - sinusitis, besvesni episodes - Psychogenic reactions, trauma, neoplasm, neuralgia. - Emergency dentalhaemoraghia - Diagnostics of emergencies associated with dental practices				

	- Differential diagnosis and therapy procedures in the diagnosis and therapy - Procedures in the diagnosis and treatment of conditions related to odontology			
12.	Course methodology Lectures, preclinical laboratory exercises, consultations.			
13.	Total time available:		2EKTSx30h=60hours	
14.	Time allocation:		15+15+15+5+15=60hours	
15.	Instructional activities	15.1.	Lectures – theoretical classes	15hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15hours
16.	Other activities	16.1.	Projects	15hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	15 hours
17.	Assessment			
	17.1.	Tests		40 points
	17.2.	Seminar paper/project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		10 points
18.	Grading system		to 50 points	5
			from 51 to 60 points	6
			from 61 to 70 points	7
			from 71 to 80 points	8
			from 81 to 90 points	9
			from 91 to 100 points	10
19.	Signature and final exam prerequisites		Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction		Macedonian	
21.	Course evaluation		Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	V. Petrovic, M. Gavric	Emergencies in dental practice	IK Draganic, Beograd	2001

	22.2.	Aditional literature				
		Ordinal number	Author	Title	Publisher	Year
		1.	Peterson L.	"Contemporary Oral and Maxillofacial Surgery",	3rd ed. Mosby,	1998

FIFTH YEAR –SECOND SEMESTER (Elective course from List No. 8)

Course description - first, second and third cycle of study					
1.	Course title	Forensic dentistry			
2.	Code	3MF155312			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme (unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V/ II	7.	Number of ECTS credits	2
8.	Instructor	Prof. Dr. Aleksej Duma			
9.	Course prerequisites	Enrolled fifth year of studies			
10.	Course objectives Knowledge of dental identification of human remains, DNA analysis of dental tissue injury, qualification and criminal liability.				
11.	Course content <u>Theoretical instruction</u> - Historical development and organization of forensic medicine in the Republic of Macedonia. Forensic dentistry. - Forensic medical expertise in dental documentation. - Forensic medical expertise in mechanical injury-hard and sharp objects, weapons and explosives. - Court - medical expertise in traffic violations. - Fundamentals of thanatology (definition and types of death; signs of death, post-mortem changes, exhumation)				

	- Mechanical asphyxia - strangulation. - Forensic medical expertise of living persons; injuries of stomatognatic system. - Dental identification - thus preparing instruments. Comparison of dental features pre and post mortem. - DNA expertise dental tissue and identification of human remains. - Forensic toxicology. Application for the purposes of forensic dentistry. - Expert. Expertise in forensic dentistry. - Criminal liability of dentist. <u>Practical instruction</u> - Court - medical autopsy. Determining time and manner of death. Post mortem signs - Court - medical autopsy in specific and nonspecific mechanical damage. - Court - medical expertise of nonviolent sudden death. - Court - medical examination of a live person - bodily injury. - Court - medical examination of a live person-body injuries, part 2. - Court - medical expertise in documents. - Isolation and analysis of DNA from dental tissue. - Determination of sex and race on the basis of dental and craniofacial characteristics. - Inherited and acquired dental changes in the identification of human remains. - Analysis of bite marks on the human body and identify triggers. - Analysis of bodily injury with emphasis stomatognatic system. - Analysis of examples of criminal responsibility dentist.			
12.	Course methodology Lectures, preclinical laboratory exercises, consultations.			
13.	Total time available:		2EKTSx30hours=60hours	
14.	Time allocation:		30+15+5+10=60hours	
15.	Instructional activities	15.1.	Lectures – theoretical classes	30hours
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours
16.	Other activities	16.1.	Projects	5hours
		16.2.	Individual assignments	5 hours
		16.3.	Independent study	5hours
17.	Assessment			
	17.1.	Tests		40 points
	17.2.	Seminar paper/project (presentation: written and oral)		10 points
	17.3.	Attendance and participation		10 points
18.	Grading system		to 50 points	5

		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22. Literature

22.1. Required materials

Ordinal number	Author	Title	Publisher	Year
1.	Milovan Milovanovik	Forensic medicine		
2.	Brkić H. i sur.	Forensic dentistry	Zagreb	2000
3.	Jerolimov V, Brkić H.	Vještačenje u stomatologiji.	Zagreb	2005
4.	Markovik A	Prakticed of oral surgery	Belgrade	2005
5.	Peterson	Principles of oral and maxillofacial surgery		

22.2. Supplementary materials

Ordinal number	Author	Title	Publisher	Year
1.	V.Petrovic M.Gavric	Emergency situacion in dental practise	Belgrade	2001
2.				

Course description - first, second and third cycle of study		
1.	Course title	Dental traumatology
2.	Code	3MF161512
3.	Programme of study	Dental medicine

4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / II	7.	Number of ECTS credits	2
8.	Instructor	Prof. Dr. Georgiev Zlatko			
9.	Course prerequisites	Verified IX semester and passed Pediatric dentistry 1			
10.	Course objectives Acquire basic knowledge of Dental traumatology				
11.	Course content • Course content • Epidemiological characteristics and classification • Diagnosis and treatment plan • Fractures first class • Fractures second class • Fractures third class • Fractures fourth class • Dental injuries-retaining apparatus-lucsations • Avulsions • Aesthetic reconstruction • Traumatic injuries deciual teeth • Complications of traumatic lesions of milk teeth • Forensic medical aspects of traumatic dental injuries				
12.	Course methodology Interactive teaching (theoretical) work in small groups (exercises) and other				
13.	Total time available:	2EKTSx30hours=60hours			
14.	Time allocation:	30+15+5+10=60hours			
15.	Instructional activities	15.1.	Lectures- theoretical classes	30 hours	
		15.2.	Practice (laboratory, auditory) seminars, team work	15 hours	
16.	Other activities	16.1.	Projects	5 hours	
		16.2.	Individual assignments	10 hours	
		16.3.	Independent study	0 hours	
17.	Assessment				
	17.1.	Tests	65 points		
	17.2.	Seminar paper / project (presentation: written and oral)	20 points		

	17.3.	Attendance and participation	15 points
18.	Grading system	to 50 points	5
		from 51 to 60 points	6
		from 61 to 70 points	7
		from 71 to 80 points	8
		from 81 to 90 points	9
		from 91 to 100 points	10
19.	Signature and final exam prerequisites	Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)	
20.	Language of instruction	Macedonian	
21.	Course evaluation	Self-evaluation	

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Bona Bajraktarova	Dental traumatology	Skenpoint	2006
	22.2.	Aditional literature				
		Ordinal number	Author	Title	Publisher	Year

Course description - first, second and third cycle of study					
1.	Course title	Focal infections			
2.	Code	3MF161812			
3.	Programme of study	Dental medicine			
4.	Organizer of the study programme(unit/ institute, department)	University Goce Delcev Faculty of Medical Sciences			
5.	Level of study (first, second, third cycle)	Integrated studies of first and second cycle			
6.	Academic year / semester	V / II	7.	Number of ECTS credits	2
8.	Instructor	Prof. Dr. Minovska Ana			
9.	Course prerequisites	Enroled fifth year			
10.	Course objectives To familiarize students with the importance and the complications that can provide focal infections, their manifestetion and therapy				

<table>
<tr><td>11.</td><td colspan="4">Course content
<u>Theoretical instruction</u>
• Theory of focal infection
• Oral hotspots, consecutive disorders
• Pathogenesis of focal infection
• Diagnosis of oral spots through the application of specific tests
• Treatment of focal infections
• Measures for prevention of focal infection
<u>Practical instruction</u>
• Diagnosis of oral spots through the application of specific tests
• Treatment of focal infections
• Measures for prevention of focal infection</td></tr>
<tr><td>12.</td><td colspan="4">Course methodology
Lectures, clinical practice, theoretical exercises</td></tr>
<tr><td>13.</td><td colspan="2">Total time available:</td><td colspan="2">2EKTSx30hours=60hours</td></tr>
<tr><td>14.</td><td colspan="2">Time allocation:</td><td colspan="2">30+15+5+10=60hours</td></tr>
<tr><td rowspan="2">15.</td><td rowspan="2">Instructional activities</td><td>15.1.</td><td>Lectures- theoretical classes</td><td>30 hours</td></tr>
<tr><td>15.2.</td><td>Practice (laboratory, auditory) seminars, team work</td><td>15 hours</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Other activities</td><td>16.1.</td><td>Projects</td><td>5 hours</td></tr>
<tr><td>16.2.</td><td>Individual assignments</td><td>10hours</td></tr>
<tr><td>16.3.</td><td>Independent study</td><td>0 hours</td></tr>
<tr><td rowspan="4">17.</td><td colspan="4">Assessment</td></tr>
<tr><td>17.1.</td><td colspan="2">Tests</td><td>70 points</td></tr>
<tr><td>17.2.</td><td colspan="2">Seminar paper / project (presentation: written and oral)</td><td>10 points</td></tr>
<tr><td>17.3.</td><td colspan="2">Attendance and participation</td><td>20 points</td></tr>
<tr><td rowspan="6">18.</td><td colspan="2" rowspan="6">Grading system</td><td>to 50 points</td><td>5</td></tr>
<tr><td>from 51 to 60 points</td><td>6</td></tr>
<tr><td>from 61 to 70 points</td><td>7</td></tr>
<tr><td>from 71 to 80 points</td><td>8</td></tr>
<tr><td>from 81 to 90 points</td><td>9</td></tr>
<tr><td>from 91 to 100 points</td><td>10</td></tr>
<tr><td>19.</td><td colspan="2">Signature and final exam prerequisites</td><td colspan="2">Cumulative score of 60% of all required activities (midterm tests, attendance and seminar papers)</td></tr>
<tr><td>20.</td><td colspan="2">Language of instruction</td><td colspan="2">Macedonian</td></tr>
<tr><td>21.</td><td colspan="2">Course evaluation</td><td colspan="2">Self-evaluation</td></tr>
</table>

22.	Literature					
	22.1.	Required materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Authorised lectures			
			Belazelkovska Z, Georgieva S.	Focal Infection: fokalozis	Stomatoloski fakultet, Skopje	2008
		2.	Dimitrovski V. Popovska-Spasovska M.	Basics of oral propaedeutics		2002
		3.	Dragoljub Đajić	Parodontologija i tzv. "fokalna infekcija“	Draslar partner	2006
	22.2.	Supplementary materials				
		Ordinal number	Author	Title	Publisher	Year
		1.	Dragoljub Đajić, Dragoslav Đukanović	Oral Diseases - Oral Medicine - Periodontics	Elit - Medica	2008
		2.	Nakova M., Popovska-Spasovska M.	Diagnosis of oral lesions-practicum	Stomatoloski fakultet, Skopje	2006