UNIVERSITY OF SARAJEVO

FACULTY OF DENTISTRY WITH

DENTAL CLINICAL CENTER

CURRICULUM OF INTEGRATED STUDY PROGRAM

I – XII SEMESTER

Sarajevo, 2024.

First year

Subject code	Compulsory courses I semester	L	P	L	P	Classes total	T	P r	ECTS
SFSOM0101E	Chemistry	30	15			45	45		4
SFSOM0204E	Physics	30	15			45			5
SFSOM0104E	Human genetics and cell biology	45	0			45			5
SFSOM1011E	Human anatomy 1	30	30			60			6
SFSOM1012E	Histology and embryology 1	30	30			60			5
SFSOS1015E	Dental morphology with dental anthropology 1	30	15			45	4	1	5
	Compulsory courses I semester								
SFSOM0103E	Medicinal biochemistry			30	30	60			7
SFSOM1021E	Human anatomy 2			45	45	90			7
SFSOM1022E	Histology and embryology 2			30	30	60			5
SFSIM0202E	Hygiene			15	30	45			5
SFSOS1023E	Dental morphology with dental anthropology 2			15	15	30			3
	Elective courses II semester								
	Elective course 2.1					30 (45)			3
	Total number of classes and ECTS credits					**615(630)**			**60**

Subject code	Elective courses II semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIS0106E	Introduction to dentistry with history of dentistry			30	0	30			3
SFSIO0203E	Health informatics			30	15	45			3
SFSIM0107E	Introduction to experiment and laboratory			30	15	45			3
SFSIS1024E	Biology of human teeth			30	15	45			3
SFSIS1025E	General and social dental medicine			15	15	30			3
SFSIS1026E	Basic principles of scientific research work			15	15	30			3

Second year

Subject code	Compulsory courses III semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSOM2031E	Human physiology 1	60	30			90			7
SFSOM0303E	Microbiology and immunology	60	30			90			6
SFSOS0302E	Public oral health	30	30			60			7
SFSOS0304E	Dental materials and equipment	45	0			45			5
SFSOS2032E	Cariesology	15	0			15			2
	Elective courses III semester								
	Elective course 3.1					(30) 45			3
	Compulsory courses IV semester								
SFSOM2041E	Human physiology 2			30	30	60			3
SFSOM0401E	Pathology			60	30	90			8
SFSOM0402E	Pathophysiology			60	30	90			8
SFSOS0403E	Gnathology			15	30	45	5	1	6
SFSOS1016E	Etichs in dental medicine			30	0	30	2	0	2
	Elective courses IV semester								
	Elective course 4.1					45			3
	Total number of classes and ECTS credits					**675(705)**			**60**

Subject code	Elective courses III semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIS2033E	Dental propaedeutics and diagnostic protocol	30	15			45			3
SFSIS2034E	Occupational Hazards in Dentistry	15	15			30			3
SFSIS0404E	Legal aspects of dental practice	30	15			45			3

Subject code	Elective courses IV semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIS0406E	Management in dentistry			30	15	45			3
SFSIO0405E	Data processing in dentistry			30	15	45			3
SFSIO0407E	Biomedical foundations of Dental practice			15	15	30			3

Third year

Subject code	Compulsory courses V semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSOM0505E	Pharmacology	45	30			75			4
SFSOS3051E	Preclinical and laboratory removable prosthodontics	30	60			90			5
SFSOM0503E	Internal medicine	45	60			105			8
SFSOM0504E	Basics of radiology	45	30			75			4
SFSOM0506E	Anesthesiology and resuscitation	15	15			30			3
SFSOS3052E	Preclinical restorative dentistry 1	15	30			45			4
	Elective courses V semester								
	Elective course 5.1					30 (45)			2
	Compulsory courses VI semester								
SFSOS3061E	Preclinical and laboratory fixed prosthodontics			30	60	90			4
SFSOS3062E	Preclinical restorative dentistry 2			15	30	45			4
SFSOM0601E	Surgery			45	45	90			9
SFSIS2045E	Psychology			15	15	30			3
SFSOS0506E	Dental anesthesiology			30	15	45	4	1	5
SFSOM3063E	Dermatovenerology			15	15	30			3
	Elective courses VI semester								
	Elective course 6.1					30(45)			2
	Total number of classes and ECTS credits					**735**			**60**

Subject code	Elective courses V semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIM3053E	Neurology	15	30			45			2
SFSIS0603E	Public health	30	15			45			2
SFSIS3054E	Oral hygiene	15	30			45			2
SFSIS3055E	Infection control in restorative dentistry and endodontics	15	15			30			2

Subject code	Elective courses VI semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIS3064E	Complex restorations			15	30	45			2
SFSIS3065	Psychoactive substances and oral health			15	15	30			2
SFSIM0604E	Infectious diseases			30	15	45			2
SFSIM0602E	Ophthalmology			30	15	45			2

Fouth year

Subject code	Compulsory courses VII and VIII semester	L	P	S	L	P	Classes total	T	Pr	ECTS
SFSOS0701E	Oral surgery	30	45		30	45	150	8	2	10
SFSOS0702E	Restorative dental medicine	15	45		15	90	165	7	2	9
SFSOS0703E	Removable prosthodontics	30	60		30	60	180	12	2	14
SFSOS0704E	Oral medicine – pathology I	15	14	1	30	30	90	7	2	9
SFSIS0707E	Dental radiology	30	15				45			5
SFSOM0708E	Pediatrics	15	15				30			2
SFSOM0709E	Physiotherapy	15	10	5			30			2
SFSOS0705E	Preclinical endodontics (VIII semester)				15	30	45	4	1	5
	Elective courses VII semester									
	Elective course 7.1						30			2
	Elective courses VIII semester									
	Elective course 8.1						30			2
	Total number of classes and ECTS credits						**820**			**60**

Subject code	Elective courses VII semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIS0801E	Prophylaxis of oral diseases	15	15			30			2
SFSIS0706E	Orofacial pain	15	15			30			2
SFSIS4071E	Oral health care in pregnancy	15	15			30			2

Subject code	Elective courses VIII semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIS4081E	Modern techniques in endodontics			15	15	30			2
SFSIS4082E	Pharmacological protocols in oral medicine and periodontology			15	15	30			2

Fifth year

Subject code	Compulsory courses IX and X semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSOS0901E	Prventive dentistry	30	30	30	30	120	6	2	8
SFSOS0903E	Fixed prosthodontics	30	60	30	60	180	10	2	12
SFSOS0904E	Basics of periodontology	15	30	15	30	90	6	2	8
SFSOS0905E	Endodontics	15	45	15	45	120	6	2	8
SFSOS5091E	Preclinical orthodontics (IX semester)	30	30			60	3	1	4
SFSOS5102E	Gerontostomatology (IX semester)	15	15			30			2
SFSOS5103E	Oral medicine – pathology II (IX semester)	15	30			45			2
SFSOM1102E	Otorhinolaryngology (IX semester)	15	15			30			4
SFSOM1103E	Onkology			15	10	30			2
SFSOS5101E	Clinical orthodontics (X semester)			30	30	60	3	1	4
	Elective courses IX semester								
	Elective course 9.1					30 (45)			2
	Elective course 9.2					30 (45)			2
	Elective courses X semester								
	Elective course 10.1					30 (45)			2
	Total number of classes and ECTS credits					**840(885)**			**60**

Subject code	Elective courses IX semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIS5091E	Radiology in restorative dentistry and endodontics	15	15			30			2
SFSIS0906E	Dental care of persons with disabilities	15	30			45			2
SFSIS0907E	Epidemiology of diseases of the periodontium	15	15			30			2
SFSIS0908E	Clinical gnathology	15	30			45			2

Subject code	Elective courses X semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIS5103E	Interceptive orthodontics			30	15	45			4
SFSIS1001E	Traumatic dental injuries in children and adolescents			15	15	30			2
SFSIS5104E	Temporomandibular disorder			15	15	30			2

Sixth year

Subject code	Compulsory courses XI and XII semester	L	P	S	L	P	S	Classes total	T	Pr	ECTS
SFSOS1101E	Maxillofacial surgery	45	30					75	5	2	7
SFSOS1105E	Dental Implantology	30	30		30	30		120	6	2	8
SFSOS6111E	Contemporary Orthodontic Therapy (XI semester)	30	15					45			4
SFSOS1104E	Clinical periodontology (XI semester)	15	30					45	4	1	5
SFSOS6112E	Pedodontics 1 (XI semester)	15	30					45			4
SFSOS1103E	Forensic medicine and dentistry (XI semester)	30	15					45	4	1	5
SFSOS1206E	Digital dental technologies	15	5	5				25			3
SFSOS1205E	Clinical practice (XII semester)				0	180	1	181		9	9
SFSOS1202E	Pedodontics 2 (XII semester)				30	45		75	4	1	5
SFSOS1203E	Graduate Thesis (XII semester)										5
SFSOS1204E	Esthetic dentistry				30	15		45			3
	Elective courses XI semester										
	Elective course 11.1							30(45)			2
	Total number of classes and ECTS credits							**645(660)**			**60**

Subject code	Elective courses XI semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIS1106E	Reconstruction of endodontically treated teeth	15	30			45			2
SFSIS1107E	Emergencies in dentistry	15	15			30			2
SFSIS6113E	Dental principles of treatment by systems	15	15			30			2
SFSIS1002E	Presurgical orthodontic treatment	30	15			45			4
SFSIS6114E	Endodontic management of teeth with complex morphology	15	15			30			2
SFSIS1108E	Fixed orthodontics	30	15			45			4
SFSIS1109E	Ambulantal oral and maxillofacial surgery	15	30			45			2

L – lessons, P – practice, T – theory, Pr – practical lessons, S- seminar

FIRST YEAR OF STUDY

Item code: SFSOM0101E	**Course Title: CHEMISTRY**		
Cycle: integrated	**Year: I**	**Semester: I**	**Number of ECTS credits: 4**
Status: obligatory		Total number of hours: 45 Lectures: 30 Excersises: 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs/subject** [do not enter names in this section. Leave the wording as indicated in this section]		
Prerequisite for enrollment:	All students enrolled in the 1 year of study		
Aim (objectives) of the course:	- educate students to apply basic knowledge about chemical structure, physico-chemical processes, which are necessary for understanding biochemical and physiological processes - achieve the student's understanding of the basic principles and mechanisms of reactions of simple and complex organic/biological molecules - educate students to apply classical and instrumental methods of chemical analysis		
Thematic units: *(if necessary, the performance plan is determined by taking into account the specifics of organizational units)*	Thematic units are formed with the aim of the student obtaining an idea of: - Molecular basis of living systems, Origin of life - chemical evolution, Characteristics of living organisms, Elemental composition of living organisms, Main bioelements, Chemical bonds represented in biomolecules: Polarized covalent bonds, Coordinative - covalent bond; Biologically significant chelate complexes, Metal bond - Basics of thermodynamic changes during chemical reactions in biological systems: Energy changes during chemical reactions; Enthalpy (H), Hess's law; Energy value of some substances (carbohydrates, proteins); Entropy; Spontaneous and non-spontaneous processes; The influence of enthalpy and entropy (S) on the spontaneity of chemical processes, Gibbs free energy (G) and spontaneity of chemical processes; Exergone and endergone reactions; Chemical potential, Combined reactions and their importance for life support, ATP as the main intermediate in energy transport in living organisms - Kinetics of biochemical reactions, Reaction speed, Influence of certain factors on reaction speed, Catalysis - reaction mechanism, kinetics of catalyzed and uncatalyzed reactions, Biological catalysis, General aspects of enzymatic catalysis, Mechanism and kinetics of enzymatic catalysis, Energy profile of chemical and biochemical reactions, Inhibition of enzymatic activity - Water as a dispersed environment of the organism; Physical and chemical properties of water depending on its structure, Dispersed systems in relation to the organism: Ionic - molecular dispersed systems, Colloidal and coarsely dispersed systems, Electrolyte solutions: acids, bases, ampholytes, salts - Balances in dispersed systems: Ionization of water, pH value, Salt hydrolysis, Buffer systems - mechanism of action of biologically significant buffers - Oxido-reductive processes: Electrochemical elements, Electrolysis, Change of free energy in oxido-reductive processes		

	- Properties and biological significance of PSE elements and application of their compounds in dental practice, Properties of metals, Alloys - Properties of the carbon atom; Functional groups; Biochemically significant reactions, Isomerism, Alcohols and ethers - Aldehydes and ketones, Carboxylic acids: mono and dicarboxylic acids - Substituted carboxylic acids, Oxycarboxylic acids, Amino acids - Peptides and proteins: Peptide bond properties; Protein structure; Conformation and dynamics of protein structure - Aromatic compounds: phenols; aromatic amines (local anesthetics); aromatic acids - Carbohydrates: monosaccharides; disaccharides, Polysaccharides – starch, glycogen - Lipids: triglycerols; sterols - cholesterol; Phospholipids; Bile acids
Learning outcomes:	The student will be able to: Explain the theory of chemical bonds and intermolecular forces in biological molecules, properties of aqueous solutions, inorganic substances in the oral cavity, electrolytes, non-electrolytes. Analyze chemical processes according to the concepts of physical laws of chemical thermodynamics, electrochemical processes, kinetics and equilibrium Apply theoretical knowledge in solving calculation tasks Classify and describe organic molecules important for the construction of biological macromolecules Connect the properties of molecules (based on chemical structure) and the mechanisms of chemical changes in bioorganic molecules Apply physico-chemical quantities, units and methods used in biomedical sciences. Display and independently calculate the results of chemical analysis
Teaching methods:	Classes are conducted in the form of: - lectures - exercises - seminars Teaching methods: Interactive, theoretical and practical teaching
Assessment methods with assessment structure:	The student's knowledge will be tested continuously throughout semester and at the final exam. All parts of the exam will be covered by the evaluation. Continuous evaluation of knowledge includes a partial exam I and II in the 7th and 15th week of classes, and a successfully presented seminar paper (minimum 2 out of 5). It is considered that the student has passed the partial exam if he has achieved the minimum number of points for passing (55 points out of 100 points). Unpassed parts of the exam will be evaluated on the final exam. A student who passes partial I and II is required to take the final exam if he has not successfully presented at least 2 seminar papers. Attendance and activity in class 5 points, partial exam I - 40 points, partial exam II - 40 points, seminar work 3 points (maximum 15 points). The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points. 8 (C) - average, with noticeable errors, carries 75-84 points. 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.

Literature:	Required: Meliha Lekić, Fehim Korać: Fizikalno – hemijski procesi u biološkim sistemima i Specifična neorganska hemija; Medicinski fakultet, Sarajevo 2005. Meliha Lekić: Struktura i hemijska svojstva organskih biomolekula; Medicinski fakultet, Sarajevo 2007. Additional: Steven Zumdahl: Chemistry; Third edition, D.C. Heath and Company P. W. Atkins/ M. J. Clugston: Načela fizikalne hemije; Školska knjiga Zagreb. 1989. J. I. Kroschwitz and M. Winkour: Chemistry; Second edition; Mc Graw – Hill, Inc., 1990.

Course syllabus Chemistry

Week	Teaching and learning methods	Course load
Week 1.	Module 1: Physicochemical processes in biological systems Lecture: Molecular basis of living systems, Origin of life - chemical evolution, Characteristics of living organisms, Elemental composition of living organisms, Main bioelements, Chemical bonds represented in biomolecules: Polarized covalent bonds, Coordinative - covalent bond; Biologically significant chelate complexes, Metal bond	2
Week 2.	Lecture: Basics of thermodynamic changes during chemical reactions in biological systems: Energy changes during chemical reactions; Enthalpy (H), Hess's law; Energy value of some substances (carbohydrates, proteins), Entropy; Spontaneous and non-spontaneous processes; The influence of enthalpy and entropy (S) on the spontaneity of chemical processes, Gibbs free energy (G) and spontaneity of chemical processes; Exergone and endergone reactions; Chemical potential, Combined reactions and their importance for life support, ATP as the main intermediate in energy transport in living organisms	2
Week 3.	Lecture: Kinetics of biochemical reactions, Reaction speed, Influence of certain factors on reaction speed, Catalysis - reaction mechanism, kinetics of catalyzed and uncatalyzed reactions, Biological catalysis, General aspects of enzymatic catalysis, Mechanism and kinetics of enzymatic catalysis, Energy profile of chemical and biochemical reactions, Inhibition of enzymatic activity Exercise 1. Laboratory work and calculations in chemistry Introduction and instructions in laboratory work: precautions and first aid; Solutions and processes related to dissolution and dilution; Different ways of expressing the quantitative ratio of solution components; SI (system of units); Stoichiometric calculations	2 3
Week 4.	Lecture: Water as a dispersed environment of the organism; Physical and chemical properties of water depending on its structure, Dispersed systems in relation to the organism: Ionic - molecular dispersed systems, Colloidal and coarsely dispersed systems, Electrolyte solutions: acids, bases, ampholytes, salts Exercise 2. Kinetics of chemical processes, Principles of kinetic determinations: experimental monitoring of the kinetics of chemical reactions and factors that influence the speed of a chemical reaction	2 3
Week 5.	Lecture: Balances in dispersed systems: Ionization of water, pH value, Salt hydrolysis, Buffer systems - mechanism of action of biologically significant buffers	2
Week 6.	Lecture: Oxido-reductive processes: Electrochemical elements, Electrolysis, Change of free energy in oxido-reductive processes Exercise 3. Principles of potentiometric determination: determining the pH value of the capacity of buffer systems	2 3
Week 7.	Module 2. Specific inorganic chemistry	2

	Lecture: Properties and biological significance of PSE elements and application of their compounds in dental practice, Properties of metals, Alloys	
Week 8.	Lecture: Properties and biological significance of PSE elements and application of their compounds in dental practice Exercise 4. Principles of physical-chemical methods: spectrophotomeric UV/VIS determination of Fe3+ ions	2 3
Week 9.	Module 3. Structure and properties of organic biomolecules Lecture: Properties of the carbon atom; Functional groups; Biochemically significant reactions, Isomerism, Alcohols and ethers	2
Week 10.	Lecture: Aldehydes and ketones, Carboxylic acids: mono and dicarboxylic acids	2
Week 11.	Lecture: Substituted carboxylic acids, Oxycarboxylic acids, Amino acids	2
Week 12.	Lecture: Peptides and proteins: Peptide bond properties; Protein structure; Conformation and dynamics of protein structure	2
Week 13.	Lecture: Aromatic compounds: phenols; aromatic amines (local anesthetics); aromatic acids	2
Week14.	Lecture: Carbohydrates: monosaccharides; disaccharides, Polysaccharides – starch, glycogen Exercise 5. Qualitative demonstration of functional groups of biologically significant compounds: lactic acid, phenol, alcohol, acetone, glucose, protein	2 3
Week 15.	Lecture: Lipids: triglycerides; sterols - cholesterol; Phospholipids; Bile acids	2

Item code: SFSOM0204E	**Course Title: Physics**		
Cycle: integrated	**Year: I**	**Semester: I**	**Number of ECTS credits:** 5
Status: obligatory		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:			
Aim (objectives) of the course:	- Introduce students to new knowledge about mechanics of materials, elastic properties of biomaterials, hardness of bones, elements of the locomotor system and levers in the human locomotor system.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Introduction to physics and biomechanics. Subject, methods and tasks of biomechanics. History of biomechanics. Importance of biomechanics in dentistry. Fundamentals of mechanics: kinematics, dynamics (laws of mechanics, forces, moments of forces, moments of inertia, density of biomaterials, energy, work, power). Biostatics. The Center of gravity and balance. Stability and balance of the human body and its parts. The center of gravity of the human body and body parts. The distribution of the masses of the human body. Analysis of human body movements by segments. Lever in the human locomotor system. Types of levers. Lower jaw like a lever. Bite force calculation. Locomotive system lever models. Bridge in dental prosthetics. Joints as elements of the locomotor system. Types of		

	joints, division of joints according to the axis of movement, models. Friction forces in biomechanics and their role in dentistry. Seminar I: basics of geometric optics, eye, eye model, lasers, lasers in dentistry. Deformation properties of solids. Types and forms of deformations. Hooke's law. Linear and nonlinear elastic deformations, plastic deformations. Structure and mechanical properties of dental materials, alloys in dentistry. Brittleness. Creep in materials, stress relaxation, fatigue, hardness, thermal stress of materials, mechanical properties of polymers. Hydrostatics and hydrodynamics of fluids, viscosity, surface tension, surface properties and adhesion. Viscoelastic properties of body fluids. Surface tension of bodily secretions. Seminar II: Electromagnetic radiation spectrum, (Non) ionizing radiation, radioactivity, X-radiation, interaction of radiation with substances, radiation doses, radiation effects on humans, ALARA principle, radiodiagnostics in dentistry.
Learning outcomes:	Student knowledge: Understand the basics of biomechanics and properties of materials that are used in dentistry.
Teaching methods:	Lectures Exercises
Assessment methods with assessment structure:	Partial exam I (On this exam the student can score a maximum of 50 points, and the exam is passed with minimally scoring of 27.5 points). Partial exam II (On this exam student can also score a maximum of 50 points, and the exam is passed with minimally scoring of 27.5 points). Final exam (If the student did not satisfy the partial exam(s), he/she has to retake it within the final exam.) Knowledge assessment will be continuously processed in the forms of seminars and partial exams. Final grade is formed as follows: 10 (A) - 95-100 points; 9 (B) - 85-94 points; 8 (C) - 75-84 points; 7 (D) - 65-74 points; 6 (E) - 55-64 points; 5 (F, FX) - under 55 points.
Literature:	Required: 1. Lecture notes Additional: • M. Busuladžić, A. Čerkić, A. Gazibegović-Busuladžić, E. Hasović, J. Stahov, FIZIKA I sa primjenama u biologiji i medicini, Prirodno-matematički fakultet Sarajevo, 2015. • A. Čerkić, A. Gazibegović-Busuladžić, M. Busuladžić, E. Škaljo, FIZIKA II sa primjenama u biologiji i medicini, Prirodno-matematički fakultet Sarajevo, 2018. • M. Busuladžić, H. Osmanović, A. Čerkić, A. Gazibegović-Busuladžić, ZBIRKA ZADATAKA IZ FIZIKE sa primjenama u biologiji i medicini, Prirodno-matematički fakultet Sarajevo, 2019. • J. Brnjas Kraljević, D. Krilov, Fizika za studente stomatologije, Medicinska naklada – Zagreb, 2007.

Teaching plan - Biomechanics in dentistry

Week	Course form and content	Number of hours
Week 1.	Introduction to physics and biomechanics. Subject, methods and tasks of biomechanics. History of biomechanics. Importance of biomechanics in dentistry. Exercises	2 1
Week 2.	Fundamentals of mechanics: kinematics, dynamics (laws of mechanics, forces, moments of forces, moments of inertia, density of biomaterials, energy, work, power). Exercises	2 1
Week 3.	Biostatics. The Center of gravity and balance. Stability and balance of the human body and its parts Exercises	2 1
Week 4.	The center of gravity of the human body and body parts. The distribution of the masses of the human body. Analysis of human body movements by segments. Exercises	2 1
Week 5.	Lever in the human locomotor system. Types of levers. Lower jaw like a lever. Bite force calculation. Joints as elements of the locomotor system. Types of joints, division of joints according to the axis of movement, models. Friction forces in biomechanics and their role in dentistry. Exercises	2 1
Week 6.	Locomotive system lever models. Bridge in dental prosthetics. Exercises	2 1
Week 7.	Types of joints, division of joints according to the axis of movement, models. Friction forces in biomechanics and their role in dentistry. Exercises	2 1
Week 8.	Seminar I: basics of geometric optics, eye, eye model, lasers, lasers in dentistry. Exercises	2 1
Week 9.	Partial exam I	3
Week 10.	Deformation properties of solids. Types and forms of deformations. Hooke's law. Linear and nonlinear elastic deformations, plastic deformations. Exercises	2 1
Week 11.	Structure and mechanical properties of dental materials, alloys in dentistry. Brittleness. Creep in materials, stress relaxation, fatigue, hardness, thermal stress of materials, mechanical properties of polymers. Exercises	2 1
Week 12.	Hydrostatics and hydrodynamics of fluids, viscosity, surface tension, surface properties and adhesion. Exercises	2 1
Week 13.	Viscoelastic properties of body fluids. Surface tension of bodily secretions. Exercises	2 1
Week 14.	Seminar II: Electromagnetic radiation spectrum, (Non) ionizing radiation, radioactivity, X-radiation, interaction of radiation with substances, radiation doses, radiation effects on humans, ALARA principle, radiodiagnostics in dentistry. Exercises	2 1
Week 15.	Partial exam II	3
	Final exam	

Code: SFSOM0104E	COURSE TITLE: HUMAN GENETICS AND CELL BIOLOGY		
Cycle: integrated	**Year: I**	**Semester: I**	**ECTS credits: 5**
Course status: obligatory		**Total classes: 45** Lectures 45	
Teaching participants	**Teachers and associates selected in the field to which the subject belongs / subject** [do not enter names in this section. Leave the wording as indicated in this section		
Prerequisite for enrollment:	According to the Study Regulations		
Objective (s) of the course:	The main aim of the course is to empower the students to master the basic concepts in biological sciences, the achievements in science that improved understanding, diagnosis and therapy of the dental patient. Get acquainted with the basics of cell biology, molecular and developmental biology, human genetics with special emphasis on important molecular mechanisms that are interlinking with the overall knowledge and work of dentists. Develop a critical opinion on scientific research results in the field of molecular medicine and dentistry, and the factors of their applicability in practice;		
Thematic units: (*If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units*)	General knowledge: knowledge of theoretical bases of cell / cell structure and structure and genome; molecular-biological processes underlying cell division, biological inheritance (traits) and genome evolution. Causes and origin of mutations and their effect on the phenotype; Genetic testing and counseling; Stem cell-based gene therapy, molecular and regenerative medicine; Skills: Recognition of types of inheritance, detection of hereditary disorders, syndromic and non-syndromic disorders of craniofacial structures; Competences: Identification of sources and molecular-biological basis of inheritance of traits, origins of diseases and specifics of therapeutic approach.		
Learning methods	Teaching is performed weekly, through an interactive relationship with the audience, and it seeks to develop logical reasoning and connecting teaching units, and the synthesis of existing knowledge in the field of biomedicine. • lectures - where current topics are presented and a discussion opens as an opportunity to evaluate student activity; • practical work - demonstration and implementation of practical tasks. Analytical approach and problems solving / cases in a group and independently. • seminar / workshop - connecting theoretical and practical aspects of human genetics. Theoretical translation of knowledge in biology to		

	examples in practice (genetics, medicine, etc). Inclass, independent and home work.
Methods of student knowledge assessment:	Final mark is cumulative sum of the marks from respective criteria: - attendancy_5% of total mark - student proactivity_10% of total mark - homework_15% of total mark - lab work_15% of total mark - partial exams I and II or integral exam_55% of total mark. Each of the components, student should be scored with at least 55% for positive overall mark. If any of the components are scored below 55% by the date of final exam, this is marked with F (5). Overall mark is the sum of partial marks in percantages and is cathegorized as in table below: Final grade is formed as follows: 10 (A) - 95-100 points, 9 (B) - 85-94 points, 8 (C) - 75-84 points, 7 (D) - 65 - 74 points, 6 (E) - 55-64 points, 5 (F, FX) - below 55 points. <u>Partial exams</u> Partial (midterm) exam: students who pass the midterm exam with >55% score) optionally can choose to make second partial exam instead of integral exam. Otherwise, student will make an integral exam first and any following attempt. No coorection exam for partial exams. Final exam Is integral exam except for students who passed the partial (midterm) exam. Exam questions are corresponding to the theoretical topics in the course weekly teaching plan in the first semester. The test is objectivized using multiple choice questioning (80%) and problem solving questions or theoretical assay (20%)
Recommended literature:	1. Alberts B. et all. Essential Cell Biology, Second edition, USA: Garaland Sciences; 2004. 2. Lewine B, Genes VIII, USA: PEARSON; 2004. 3. Lewis Ricki, Human Genetics Concepts and aplications. New York: Mc Graw Hill; 2005. (Literature in local language, accessible online) Diklić V. et al.(2001): Biologija sa humanom genetikom. Medicinska knjiga, Beograd. (odabrana poglavlja) Pojskic, L. (Ed) (2014): Uvod u genetičko inženjerstvo i biotehnologiju. INGEB, Sarajevo. (odabrana poglavlja) Facultative sources: - Berberović LJ., Hadžiselimović R.(1986): Rječnik Genetike. Svjetlost, Sarajevo. - Cooper M. i sar.(2010): Stanica – molekularni pristup. Medicinska naklada, Zagreb. - Emery Alan E. H. (2009): Osnovi medicinske genetike. Data Status. Beograd.

	- Genomes.Sixth Edition-John and Bartlett Publishers,INC.USA - Hartl D.L., Jones W.E. (2005): Genetics.Analysis of Genes and - Kičić M. , Krajinčanić B. (1989): Medicinska genetika. Zavod za udžbenike i nastavna sredstva – Beograd. - Redžić A.(2001): Hromosomi i ćelijski ciklus – uvod u citogenetiku. Univerzitet u Sarajevu, Sarajevo. - Smajilagić A., Redžić A., Gavrankapetanović I. (2008): Molekularno- biološki aspekti tkivnog inženjerstva kosti. Institut Za NIRR KCU Sarajevo, Sarajevo. - ostala recenzirana literatura iz pripadajuće oblasti.

Implementation plan: Course - Human genetics and cell biology

Weeks	Forms of teaching and practical education	No. hours
Week 1.	Lectures: Cell. Biology today, Molecular biology of cells. Evolution of prokaryotic and eukaryotic cells. Cell as an experimental model. The general plan of the cell structure, chemical cell structure. The role of enzymes as biological catalysts. Cell membrane: ultrastructure, universal organization and function. Cytoskeleton – microfilaments. Intermediate filaments, microtubules. Nucleus, transport to / from the nucleus, nuclear membrane, chromatin, nucleolus (structure and function). Endoplasmic reticle, Golgi apparatus, lysosomes, mitochondria, ribosomes.	3
Week 2.	Lectures: Cellular and molecular basis of inheritance. DNA hereditary material. Types of DNA sequences. Genetic code. Chromosomes. Morphological, chemical and molecular structure. Chromosome analysis methods. Nomenclature of chromosomes. The human genome. Gene and genetic information: structure (introns, exons, promoter, terminator) and function.	3
Week 3.	Lectures: Introduction to molecular biology: DNA replication (characteristics, enzymes, importance). Cell cycle: cell cycle of the eukaryotic cell, control points, regulation of the cell cycle. The nucleus in mitosis, the nucleolus, the mitosis stages.	3
Week 4.	Lectures: Meiosis, gametogenesis: genetic significance of meiosis, gametogenesis (spermatogenesis and oogenesis). Genetic recombination and other sources of intraspecies DNA variability; homologous recombination, synapses, chiasmas, crossing-over, non-homologous recombination (insertion sequences / transposons). Fertilization; Determination and differentiation of half of human (role of sex chromosomes). Lab 1 (1 hour) – analysis of mitosis and meiosis images; recognizing markers of critical points in cell division;	3
Week 5.	Lectures: Principles of medical genetics: Consequences of meiosis: the origin and causes of non-segregation of autosomes and sex chromosomes in meiosis I and meiosis II.	3

	Chromosomal aberrations: numerical and structural, with examples. Chromosomal diseases (general characteristics, causes, diagnostics, guidance in prevention). Lab 2 (2 hours)	
Week 6.	Lectures: History and influence of genetics on medicine; Karyotype and a human karyogram (Denver classification and nomenclature). Syndromes and pathological conditions as a consequence of chromosomal aberrations (ethiology, incidence, characteristics, consequences and risk of their expression / repetition). Clinical genetics, molecular diagnostics methods- case examples – case study;	3
Week 7.	**Partial exam I**	3
Week 8.	Lectures: Biosynthesis of cellular constituents. Synthesis and finishing of RNA - transcription: Molecular basis and principles of genetic information flow. Transcription - synthesis of RNA (from DNA to RNA): enzyme RNA polymerase (structure, types, function) the stages of the transcription process, transcription of structural genes - (DNA → mRNA; code → codon; characteristics), the iRNA structure of pro- and eukaryotes, □ processing of the primary transcript – pre-mRNK, □ RNA splicing.	3
Week 9.	Lectures: Synthesis and protein folding: Translating genetic information (from RNA to protein), genetic code. Activation of amino acids. Initiation, elongation and termination of translation. - the mRNA, tRNA, rRNA function in the translation process, - characteristic enzymes and protein factors. Regulation of protein synthesis in pro- and eukaryotes. Lab 3 (2 hours) – Case example – in silico analysis of DNA to RNA transcription; mRNA to protein translation;	3
Week 10.	Lectures: Mutations: molecular biology in medicine and reparation system:; Mutations and their significance in evolution vs. consequences in medicine; types of gene mutations and clinical (health) consequences (dental medicine examples), mutagenic agents (ecotoxicology, genotoxicology, cell biological basis for xenobiotic effects on genes) DNA repair	3
Week 11.	Lectures: Principles of medical genetics. Hereditary factors and their functioning. Gregor Mendel and the laws of inheritance. Mono-hybrid inheritance. Basic rules, principles and types of biological inheritance: the chromosome inheritance theory (genetic loci, alleles, genotype, phenotype, distribution and gene traits, expressiveness and penetrability of the gene), allelic gene interaction - monogenic inheritance: (dominant, recessive, intermediate, pseudoautosomal, co-dominant - examples). Epigenetics.	3
Week 12.	Workshop 1: Models of inheritance: Interaction of non-allelic genes - polygenic inheritance (additive and complementary polygenia; epistasis). Inheritance related to sex chromosomes (complete and incomplete sex related inheritance; sex-limited and sexconditioned inheritance). Mitochondrial inheritance.	3

	Free combination of genes, genetic maps.	
Week 13.	Lectures: Cancer: developing genes and cancer. Positional effects and developing genes. Genetics of tumors: development and causes of origin. Proto-oncogenes, oncogenes, tumor suppressor genes. Tumors – cell cycle, apoptosis, role of telomeres in tumors. Molecular biology in the prevention and treatment of cancer. Gene therapy, potentials and application in human genetics.	3
Week 14.	Lectures: DNA technology (genetic engineering) and its application: Principles of genetic engineering. Cloning forms. Banks of genes. Vectors. Ethic principles. Recombined DNA technology. Advantages and disadvantages of using recombinant DNA technology.	3
Week 15.	Workshop/seminar: Joint discussion on preselected topics of the course and evaluation for students proactivity and engagement	3
Week 17-18.	Exam preprations; Consultations	
Week 19-20.	Final exam/retake	

Item code: SFSOM1011E	**Course Title: Human Anatomy 1**		
Cycle: integrated	**Year: I**	**Semester: I**	**Number of ECTS credits:** 6
Status: obligatory		**Total number of hours: 60** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 2 (30)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 1 year of study		
Aim (objectives) of the course:	Anatomy studies the normal structure of the human body. The aim of the course is adopting its content, through systemic and topographical anatomy, needed for further training within theoretical and clinical subjects of dentistry studies. Particular attention is paid to knowledge of topographic relationships of individual regions and organs, with the aim of training students for future operational interventions and other clinical needs in dental practice. During a compulsory curriculum, dentistry student has to prevail course content from osteology, joint and muscular system, as well as the organs of the head and neck with their nerves supply, vascularization and lymphatic drainage, relevant for diagnostic and therapeutic purposes. It is mandatory to master the capital nerves with a special emphasis to its connection with central nervous system and sensory organs. The student should also be familiar		

	with the topography of the human body related to individual organs and organic systems.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Introduction to anatomy, division of anatomy, anatomical nomenclature, orientation planes of the human body. General and special osteology. General and special syndesmology. General myology. Systema vasorum et lymphaticum - general part. Cor and mediastinum, morphology, position and division. Respiratory system, morphology, position and division. Digestive system, morphology, position and division. Systema uropoeticum, morphology, position and division. Systemata genitalia masculina et feminina, morphology position and division. Endocrine system and skin, morphology, position and division.
Learning outcomes:	Through the course of Human Anatomy1 the student will acquire the following knowledge: Module 1. Locomotor system. Introduction to anatomy, division of anatomy, anatomical nomenclature, orientation planes of the human body. General and special osteology. General and special syndesmology. General myology. Module 2. Sphlanchnology. Systema vasorum et lymphaticum - general part. Cor and mediastinum, morphology, position and division. Respiratory system, morphology, position and division. Digestive system, morphology, position and division. Systema uropoeticum, morphology, position and division. Systemata genitalia masculina et feminina, morphology position and division. Endocrine system and skin, morphology, position and division. Through the course of Human Anatomy1 the student will master the following skills: -Understanding the anatomical nomenclature of Latin terminology -Orientation of the head bones with special reference to the knowledge of the topographic spaces of the skull -Mechanics of movement in the joints of the head and neck individually, connections between the articular bodies. -Recognition of the macroscopic structure of the heart, respiratory, digestive, urogenital, endocrine system and skin Skills that the student should be able to practically perform after attending classes: -Orientation on preparations. Organ recognition individually. -Recognition of anatomical structures and their mutual relations.
Teaching methods:	Interactive lectures Practical exercises for groups of no more than 10 students. Exercises - supervised learning on human preparations, exercise on isolated parts of the skeleton, organs and joints. During the course, the student will be able to learn independently on isolated parts of the skeleton of joints and organs.
Assessment methods with assessment structure:	Acquired knowledge is assessed through partial assessment and final exam. Evaluation of student knowledge in module 1 (first partial exam) is done by oral exam with identification of anatomical structures on anatomical preparations. Passed material from module 1 is recognized at the final exam. Evaluation of knowledge in module 2 (second partial exam) is done by MCQ test of 40 questions. Passed material from module 2 is recognized at

	the final exam. The maximum number of points on the second partial exam is 50, the minimum is 25. Students who did not pass the partial knowledge tests take the final exam. The final exam consists of a practical and an oral part (identification of structures and elements on a human preparation). The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Assigned reading: 1. Richard L. Drake, A. Wayne Vogl, Adam W.M. Mitchell: Gray's Anatomy, third edition, 2014. 2. Kieth L. Moore: Clinically Oriented Anatomy, seventh edition, 2013. 3. Atlas of Anatomy (Sobotta or Gilroy) Optional / additional reading: 1. Thieme: Color atlas of human anatomy: Vol. 1 (Platzer, 2014), Vol. 2 (Fritsch, 2014), and Vol. 3. (Kalhe. 2015). 2. Friedrich Paulsen, Tobias M. Böckers, Jens Waschke: Sobotta Anatomy Textbook, 1st Edition, 2018.

Course syllabus Human Anatomy 1

Week	Teaching and learning methods	Course load
Week 1.	Lecture: Introduction to anatomy. Historical development. Division of anatomy. Anatomical position and orientation levels. Anatomical terminology. Division of systematic anatomy. Skull as a whole, division and composition, frontal bone, parietal bone	2
	Practicals: Skull as a whole, division and composition, frontal bone, parietal bone	2
Week 2.	Lecture: occipital bone, sphenoid bone	2
	Practicals: occipital bone, sphenoid bone	2
Week 3.	Lecture: temporal bone, canals in temporal bone, tympanic cavity	2
	Practicals: temporal bone, canals in temporal bone, tympanic cavity	2
Week 4.	Lecture: ethmoid bone, cranial cavity (division, cranial base, anterior, middle and posterior cranial fossa, calvaria), fontanelle	2
	Practicals: ethmoid bone, cranial cavity (division, cranial base, anterior, middle and posterior cranial fossa, calvaria), fontanelle	2
Week 5.	Lecture: maxilla, palatine bone, zygomatic bone, nasal bone, vomer, inferior nasal concha, lacrimal bone	2
	Practicals: maxilla, palatine bone, zygomatic bone,nasal bone, vomer, inferior nasal concha, lacrimal bone.	2
Week 6.	Lecture: Mandible, hyoid bone, craniofacial cavities 2 (nasal and orbital cavity, temporal fossa, infratemporal fossa, pterygopalatine fossa)	2
	Practicals: Mandible, hyoid bone, craniofacial cavities 2 (nasal and orbital cavity, temporal fossa, infratemporal fossa, pterygopalatine fossa)	2

Week 7.	Lecture: general syndesmology (division of joints between bones, division and characteristics of immovable connections, joints, joints elements, division of joints). General miology (types of muscular tissue, characteristics of striated muscular tissue, attachment and outside look of skeletal muscle, accessory structures, muscular function). Practicals: Division of connections between bones, joints, joints elements, division of joints)	2 2
Week 8.	Lecture: Connective and cartilaginous junctions between head bones, temporomandibular joint, atlantooccipital joint, atlantoaxial joint. Vertebral junctions. Practicals: Connective and cartilaginous junctions between head bones, temporomandibular joint, atlantooccipital joint, atlantoaxial joint. Vertebral junctions.	2 2
Week 9.	First partial exam	
Week 10.	Lecture: Systematic anatomy. Division and significance. Head and neck organs. Respiratory system, basic anatomical characteristics, function. Upper part of the respiratory system-external and internal nose parts, paranasal sinuses, larynx, trachea (overview). Digestive system, basic anatomical characteristics, function. Oral cavity, division, borders, walls. Lips, cheeks, gums, teeth. Proper oral cavity (hard palate and soft palate, tongue), large and small salivary glands, pharynx (overview). Practicals: Upper part of the respiratory system-external 2 and internal nose parts, paranasal sinuses, larynx, trachea. Digestive system, basic anatomical characteristics, function. Oral cavity, division, borders, walls. Lips, cheeks, gums, teeth. Proper oral cavity (hardpalate and soft palate, tongue), large and small salivary glands, pharynx.	2 2
Week 11.	Lectures: Chest and chest cavity (examination of muscular and dermal elements) General angiology,basics of the blood and lymphatic system composition, large and small circulation. Heart, morphology, position, composition, vascularization, lymphatic drainage. Bronchi and lungs (morphology, structure, vascularization, lymphatic drainage), pulmonary pleura. Rear mediastinum (esophagus, thoracic duct, right lymphatic duct, aorta, inferior vena cava). Practicals: Heart (morphology, position, composition, vascularization, lymphatic drainage), bronchi and lungs, pulmonary pleura.	2 2
Week 12.	Lectures: abdominal and pelvic cavity (division and basic anatomical characteristics). Esophagus, stomach, small intestine, (duodenum, jejunum, ileum), large intestine, liver, bile ducts, pancreas, spleen (morphology, composition, vascularization, innervation, lymphatic drainage) Practials: Esophagus, stomach, small intenstine (duodenum, jejunum, ileum), large intestine, liver, bile ducts, pancreas, spleen (morphology, composition, vascularization, innervation, lymphatic drainage).	2 2
Week 13.	Lecture: Urinary system-examination, kidneys, macroscopic anatomy, composition, ureter, urinary bladder, female urethra. Reproductive organs of the man (morphology, structure, vascularization, innervation, lymphatic drainage). Practicals: Kidney, ureter, urinary bladder, female urethra, testicle, sperm extraction channels, male reproductive accessory glands	2 2
Week 14.	Lecture: Female reproductive organs. Endocrine system 2 (morphology, structure, vascularization, innervation, lymphatic drainage) Practicals: Ovary, Fallopian tube, uterus, external 2 female genital organs, pituitary gland, epiphysis,thyroid gland, parathyroid glands, adrenal gland	2 2
Week 15.	Second partial exam	
Week 17.	Final exam, Corrective exam period.	

Item code: SFSOM1012E	**Course Title: Histology and Embryology 1**		
Cycle: integrated	**Year: I**	**Semester: I**	**Number of ECTS credits:** 5
Status: Obligatory		**Total number of hours: 60** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Practical work 2** (30)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	All students enrolled in the first year of study		
Aim (objectives) of the course:	The aim of this module is to gain knowledge about the morpho-functional characteristics of cells and tissues of the human organism for whose light and electron microscopic observation is necessary, in addition to the basic knowledge in histotechnology. To acquire knowledge about the normal structure of the body as an integration of diverse cell populations, as well as the structural elements of the intercellular matrix and fibers.		
Thematic units:	Introductory lecture, plasmalemma, endosomes, lysosomes and peroxisomes, endoplasmic reticulum and ribosomes, Golgi apparatus and mitochondria, cytosol and its components, nucleus and cellular connections, epithelial tissue, connective tissue, cartilage and bone tissue, skin, blood and lymph tissue and nerve tissue.		
Learning outcomes:	The theoretical knowledge of human histology and embryology is provided through lectures and interactive learning, while practical work enables the mastering of the light microscopy technique, observation and analysis of the histological slides of adult and fetal organs/tissues and the analysis of electron micrographs. Through the teaching of this course the student will acquire the following knowledge about functional cytology and tissue histology: - normal microscopic and submicroscopic structure of human cells from the aspect of their morphological and functional diversity. - the importance of the connection between changes in the structural elements of cells and carefully selected clinically manifest disorders, based on different histotechnological approaches, as well as the distribution within the organs or organ systems. Skills that the student should be able to perform practically (knows how to do it): observe and analyze cytological and histological preparations. Skills that the student should know (knows how): histotechnological procedures for making preparations for the level of available histological techniques and basic methods. After attending classes, the student should adopt the following attitudes: proper observation of cytological and histological specimens is a prerequisite for good analysis.		
Teaching methods:	- lectures - practical work		
Assessment methods with assessment structure:	Knowledge and skills in practical work are evaluated continuously. Through the course two partial exams and one practical exam are performed. First partial exam is in a form of a written essay (cytology part) with oral interpretation of written text. Second partial exam is composed of the theoretical part (tissues) in a form of a written essay with oral interpretation of		

	written text. Practical part of the exam includes all topics (cytology and tissues) and consists of analyzing two histological slides and one electron micrograph. Both, second partial exam and practical part are done in the same term. To pass the exam student must score at least a minimum of both theoretical and practical part. The student who did not gain enough points for single or all parts of the exam can attend the final and re-sit exam. The final and re-sit exam meet the predefined criteria of the partial and practical exams. The final grade is formed by adding up all points gained through the practical work evaluations, both partial and practical exam. 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Mescher AL. Junqeira's Basic Histology (text & atlas), 13th edition, McGraw-Hill; 2013. 2. Alicelebic S. et al. Histology 1 – A practical guide for students. Sarajevo: Faculty of Medicine; 2017. Additional: 1. Cooper MG, Hausman ER. The Cell: A Molecular Approach, 6th edition, Sinauer Associates; 2013. 2. Alberts B, Johnson A, Lewis J, et al. Molecular Biology of the Cell, 6th edition, Garland Science; 2014.

Teaching plan – Histology and Embryology 1

Week	Course form and content	Number of hours
Week 1.	Lecture: Introduction - History, staff and organization of the Department. Introduction to the subject. Hierarchical model of the morpho-functional organization of the human body. Basic principles of histological techniques and methods. Practical work : Histological laboratory - laboratory equipment and demonstration of the stages of making a routine histological preparation, microscopy technique and artifact analysis.	2 2
Week 2.	Lecture: Plasmalemma. Indirect and direct evidence of the existence of the cell membrane and its appearance on an electronic microscope. Molecular organization of the cell membrane and its chemical composition. Cell membrane matrix and its functions. Integral and peripheral proteins. Plasmalemma. Functional characteristics of the cell membrane – aqueous and ion channels. Ionophores. Protein carriers: uniport, symport and antiport. Carbohydrates of biological membranes and their functional role. Exocytosis: constitutive and regulated. Endocytosis. Pinocytosis: fluidphase and receptor-mediated phase. Clathrin-coated and non-clathrincoated vesicles. Phagocytosis. Transcellular transport of small molecules and transcytosis. Practical work: Cell shape - spherical cell shape (light microscopy = LM), pyramidal cell shape (LM), Plasmalemma - cell membrane (TEM = transmission electron microscopy), microvilli (TEM)	2 2
Week 3.	Lecture: Endosomes: visualization, types, structure and function. The role of endosome in the distribution of material internalized by the pinocytotic process. Lysosomes: membrane, pH and matrix enzymes. Method of identification. Typization, lysosomal function and disorders: inclusion of cell disease. Peroxisomes. Practical work: Membrane bounded organelles - lysosome (TEM), endosome (TEM), peroxisome (TEM)	2 2

Week 4.	Lecture: Endoplasmic reticulum and ribosomes. Rough and smooth ER (LM, TEM and other techniques that allow differentiation). Ribosomes and protein synthesis. Other rough ER functions: protein glycosylation, oligosaccharide synthesis, modeling and remodeling of peptide molecules and synthesis of phospholipids. Functions of the smooth ER. Practical work: Membrane bounded organelles - rough and smooth endoplasmic reticulum (TEM), rough endoplasmic reticulum (LM – indirectly), smooth endoplasmic reticulum (LM – indirectly)	2 2
Week 5.	Lecture: Golgi apparatus: Photomicroscopic features. Ultrastructure, cis, media and trans zone. Functional role of each zone. Secretory vesicles. Mitochondria: microscopic differentiation. Ultrastructure, structure and function of Mitochondrial reproduction. The origin of mitochondria (theory). Mitochondrial diseases. Practical work: Membrane bounded organelles - Golgi apparatus (TEM), glandular cell (thyroid gland – LM and TEM), mitochondria (TEM)	2 2
Week 6.	Lecture: Cytosol and its components. General characteristics and composition of cytosol. Cytoskeleton. Actin filaments: structure, distribution, function with emphasis on the cellular cortex and microvilli. Microtubules. Centrosome. Centriole and cilia: ultrastructure and function. Intermediate filaments: types and clinical significance. Cell inclusions: glycogen, lipid droplets and pigments. Practical work: Cytosol, cell inclusions and cytoskeleton - lipid droplets (LM), pigment in the cytosol (LM), actin filaments (TEM), microtubules (TEM), cilia (LM, TEM)	2 2
Week 7.	Lecture: Nucleus and cell junctions. Microscopic features and ultrastructure of the nucleus. Cell – cell and cell – matrix junctions Practical exercises: Nucleus and cell junctions - nucleus (LM, TEM), cell junctions (scheme, TEM)	2 2
Week 8.	First partial exam (theoretical part – cytology) + Repetitorium of practicals	2 2
Week 9.	Lecture: Epithelial tissue. Definition and classification. Covering epithelia: simple squamous, simple cuboidal, simple columnar, stratified squamous epithelium, transitional epithelium and pseudo-stratified epithelium. Glandular epithelia: morpho-functional characteristics of glandular epithelial cells. A glandular cycle and the classification of glands. Practical work: Covering and glandular epithelia - basement membrane (TEM), simple squamous epithelium (LM), simple columnar epithelium (LM), pseudo-stratified epithelium (LM), stratified squamous epithelium (LM), transitional epithelium (LM), exocrine glands – tubular, alveolar glands (LM)	2 2
Week 10.	Lecture: Connective tissue. The function and classification. Mesenchyme. Loose connective tissue: morphological, functional and ultrastructural features. Chemical composition and types of connective tissue fibers. Connective tissue cells. Morphological, functional and chemical properties of the intercellular substance, its mechanical and physicochemical properties. Reticular, dense, elastic and mucous connective tissue. Adipose tissue: white and brown. Practical work: Connective tissue proper and specialized connective tissue - mesenchyme (LM), reticular connective tissue (LM), dense irregular connective tissue (LM), dense regular connective tissue (LM), white adipose tissue (LM), fibroblasts (TEM)	2 2
Week 11.	Lecture: Supportive connective tissue. Cartilage: hyaline, elastic and fibrous. Ultrastructural, chemical and functional characteristics of the chondrocytes, intercellular ground substance and fibers. Physical properties and distribution of cartilaginous tissue. Bone tissue: Bone cells and extracellular matrix. Periosteum: structure and function. Trabecular and lamellar bone. Compact and spongy bone. Architecture of tubular and flat-bones. Osteogenesis: intramembranous and endochondral ossification. Mechanical and metabolic role of bone tissue. Practical work: Supportive connective tissue - hyaline cartilage (LM), elastic cartilage (LM), compact bone (LM), endochondral ossification (LM), osteocyte (TEM)	2 2

Week 12.	Lecture: Blood, lymph, bone marrow. Blood: blood plasma and blood cells/formed elements. Red blood cells: shape, size, structure, chemical composition and function. Leukocytes: granulocytes – neutrophil, eosinophil, basophil; agranulocytes – lymphocytes and monocytes. Blood platelets: origin and structure. Tinctorial and ultrastructural properties of formed blood elements. Lymph: lymph plasma, cells and origin. Bone marrow: age-dependent localization and distribution. Histological structure of the red bone marrow. Development of formed blood elements. Practical work: Blood and bone marrow - peripheral blood smear (LM), lymphocyte (TEM), neutrophil (TEM), eosinophil (TEM), thrombocyte (TEM), bone marrow smear (LM)	2 2
Week 13.	Lecture: Muscle tissue. Definition and classification of muscle tissue. Skeletal muscle tissue: The development, shape and size of the striated muscle fibers. Sarcolemma, sarcoplasm, nuclei and myofibrils: light-microscopic and electronmicroscopic properties. Chemical composition and molecular organization of myofibrils. Mechanism of contraction. Cardiac muscle: Cardiac muscle cells: morphological and ultrastructural properties. Specific intercellular junctions. Myofibrils: Comparison to the skeletal muscle tissue. Myocardial conduction and endocrine cells. Smooth muscle tissue: shape, size and structure of the smooth muscle cell. Structural specificities and mechanism of smooth muscle tissue contraction. Practical work: Muscle tissue - smooth muscle tissue (LM), skeletal muscle tissue (LM, TEM), cardiac muscle tissue (LM, TEM), conduction cardiomyocytes (LM), endocrine cardiomyocytes (TEM)	2 2
Week 14.	Lecture: Nervous tissue. Neuron: classification and distribution. Perikaryon – shape, size, composition. Dendrites and axons – appearance, composition and function. Ultrastructural, histochemical properties and the histophysiology of neurons. Nerve fiber structure. Synapses. Glial cells: morphology and distribution. Morphology, ultrastructure and function. Mechanism and significance of the nerve fiber degeneration and regeneration. Neuroglandular cells. Practical work: Nervous tissue - multipolar neuron (LM), pseudounipolar neuron and satellite cells (LM), astrocytes (TEM), oligodendroglia (TEM), microglia (TEM), nerve fibers (LM, TEM)	2 2
Week 15.	Second partial exam (theoretical part – tissues + practical part)	2+2
Week 17.	Final exam	
Week 19.	Re-sit exam	

Item code: SFSOS1015E	**Course Title: Dental morphology with dental anthropology 1**		
Cycle: integrated	**Year: I**	**Semester: I**	**Number of ECTS credits:** 5
Status: obligatory		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	All students enrolled in the 1st year of study		
Aim (objectives) of the course:	The aim of the course is to introduce students with all characteristics of permanent and decidual human dentition.		
Thematic units (If necessary, the performance plan is determined by taking	Thematic units were formed with the aim that the student learns the basics of recognizing the characteristics of deciduous and permanent		

into account the specifics of organizational units):	teeth, the arrangement of dental arches, and the basics of dental anthropology. The teaching plan is given by the week in the attachment.
Learning outcomes:	Knowledge: have knowledge of the anatomy of the teeth of deciduous and permanent dentition, the arrangement of dental arches and the relationship between teeth Skills: Master the nomenclature and terminology of macroscopic structure of teeth, and be able to recognize deciduous and permanent teeth Competences: Be able to understand and follow future clinical courses that study pathological changes in the dental organ
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with mark structure:	Acquired knowledge is assessed through two tests during the semester, and a final exam. The first test during the semester involves a practical assignment consisting of accurate recognition, naming, oral description and comparation of one permanent tooth. Recognition and naming are eliminatory for student to proceed to oral description of permanent tooth. This test carries 5 to 10% of total mark. Second test during the semester involves practical assignment consisting of exact recognition, naming, oral description and comparation of one deciduous tooth. Recognition and naming are eliminatory for student to proceed to oral description of tooth. This test also carries 5 to 10% of total mark. Students who do not pass partial tests must take the final exam as described. Students take the final exam if they pass both practical assignments and final exam consists of written test. In order for the test to be considered passed and scored, it must contain a minimum of 60% correct answers. Final exam carries 45 to 80% of total mark. The formation of total mark is done in such way that the number of total points obtained through all forms of knowledge assessments (practical assignments and written test) is translated into the final mark, as follows: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, and carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: Vuković A. i saradnici. Osnovi morfologije zuba i dentalne antropologije, Stomatološki fakultet Unoverziteta u sarajevu, Sarajevo, 2013. Additional: 1. Woelfel J. Dental Anatomy. Baltimore, USA, 1997. 2. Gašperčič D. i sar. Anatomija zob. Univerza v Ljubljani, Medicinska fakulteta, Ljubljana, 2002.

Teaching plan of the course Dental morphology with dental anthropology 1

Week	Form of teaching and lectures	Hours
Week 1.	Lecture: Introductory remarks on the course; the concept and significance of dental morphology, especially in relation to clinical practice. The stomatognathic system, dental organ, groups of teeth, tooth functions, dental arches, dentition.	2 1

	Practical exercise: The stomatognathic system. Description of dental organ, tooth groups, dental arches, and dentition.	
Week 2.	Lecture: Orientation planes in the oral cavity (transverse, sagittal, and vertical directions). Methods of tooth marking systems (Old European, Old German, American, and FDI system). Practical exercise: Dental organ – drawing and observing models Nomenclature of tooth surfaces.	2 1
Week 3.	Lecture: Anatomical tooth parts; Nomenclature of tooth surfaces and anatomical details; topographic-anatomical signs of teeth (sign of angle, sign of arch, and sign of root). Practical exercise: Methods of tooth marking systems (Old European, Old German, American, and FDI system). Rule of the corner, rule of the arch, and rule of the root. Exercises on models and natural human teeth.	2 1
Week 4.	Lecture: General characteristics of permanent incisors; Anatomical-morphological characteristics of the first and second upper incisors. Practical exercise: Drawing permanent upper incisors. Exercises for recognizing upper permanent incisors on natural teeth and noticing morphological variations.	2 1
Week 5.	Lecture: Lower first and second incisors. General characteristics of permanent canines; Upper and lower canine. Practical exercise: Drawing permanent lower incisors. Exercises for recognizing lower permanent incisors on natural teeth and noticing morphological variations.	2 1
Week 6.	Lecture: General characteristics of the premolars; Individual description of the first and second upper premolars. Practical exercise: Drawing and recognizing permanent canines. Exercises on natural teeth.	2 1
Week 7.	Lecture: Anatomical and morphological characteristics of the lower first and second premolars. General description of the molars. Practical exercise: Drawing upper premolars, and recognition exercises on natural teeth.	2 1
Week 8.	Lecture: Description of the first, second and third upper molars. Practical exercise: Drawing the lower premolars, and recognition exercises on natural teeth. Observation of morphological variations of the second lower premolar.	2 1
Week 9.	Lecture: Description of the first, second and third lower molars. Practical exercise: Drawing the first and second upper molars, and recognition exercises on natural teeth	2 1
Week 10.	Lecture: Root canal system of permanent teeth and of its significance for clinical practice. Practical exercise: Drawing the first and second lower molars, and recognition exercises on natural teeth	2 1
Week 11.	Lecture: General characteristics of deciduous teeth. Description of deciduous incisors and canines. Practical exercise: Third upper and lower molars - exercises on natural teeth. Observation of morphological variations of upper and lower molars.	2 1
Week 12.	Lecture: Deciduous upper and lower molars. The importance of knowing the morphological and anatomical properties of deciduous teeth in clinical practice. Practical exercise: Recognition of deciduous dentition teeth, exercises on natural teeth	2 1
Week 13.	Lecture: Contact points and interdental spaces. Physiological and pathological tooth migration. Non-carious lesions of hard dental tissues: abrasions, attrition, erosions, and dental usures. Practical exercise: Carving and modeling tooth of personal choice	2 1
Week 14.	Lecture: Introduction to dental anthropology and comparative odontography Practical exercise: Carving and modeling tooth of personal choice	2 1
Week 15.	Lecture: Phylogenetic and ontogenetic development of dentition Practical exercise: Systematic description of the endodontic space of permanent teeth, variations of the root canal system, natural patterns, models, drawing of basic types of root canal systems.	2 1
Week 17.	Final exam	
Week 19.	Corrective exam	

<table>
<tr><td>Item code:
SFSOM0103E</td><td colspan="3">Course Title: Medicinal Biochemistry</td></tr>
<tr><td>Cycle: integrated</td><td>Year: I</td><td>Semester: II</td><td>Number of ECTS credits: 7</td></tr>
<tr><td colspan="2">Status: obligatory</td><td colspan="2">Total number of hours: 60
Optionally develop the distribution of hours by type:
Lectures: 30
Exercises: 30</td></tr>
<tr><td>Teaching participants:</td><td colspan="3">Teachers and associates selected in the field to which the subject belongs / subject</td></tr>
<tr><td>Prerequisite for enrollment:</td><td colspan="3">All students enrolled in the 1th year of study</td></tr>
<tr><td>Aim (objectives) of the course:</td><td colspan="3">The main objectives are:
– Students will acquire a good basis for understanding course contents in further related medical and dental subjects
– Students will be introduced to biomolecular constituents of cells, their role and participation in metabolic processes
– Students will understand biochemical processes occurring in individual tissues and organs and the influence of hormones on these processes
– Students will understand mechanisms of the occurrence of some diseaseas after disturbance of biochemical processes
– Students will get acquainted with the basic analytical procedures for determining the constituents of the human body fluids, including disease indicators</td></tr>
<tr><td>Thematic units: (If necessary, the performance plan is determined by taking into account the specifics of organizational units)</td><td colspan="3">The thematic units of Medical biochemistry are structured in a way to allow students to learn basic aspects, roles of body constituents, metabolism of nutrients and their importance for organic systems and tissues, in modules as presented in the weekly teaching plan in the attachment. The main units are as follows:

1. Biochemistry of saliva
2. Enzymes. Creation and storage of metabolic energy. Transport through the cell membrane
3. Metabolism of carbohydrates
4. Metabolism of lipids
5. Metabolism of proteins and amino acids
6. Regulatory mechanisms and mutual relations of intermediate metabolism
7. Antigen-antibody reactions
8. Medical-biochemical specifici:es of the :ssue and organs of the oral environment</td></tr>
<tr><td>Learning outcomes:</td><td colspan="3">Konwledge: Students will know the basic structural characteristics and functions of biomolecules, the basic principles of metabolic processes and their importance.</td></tr>
</table>

	Skills: Students will be able to present the main metabolic pathways occurring in human body. Students will acquire the skill to perform basic work in medicinal-biochemical laboratories following laboratory safety measures. Competences: Students will understand how metabolic processes are interlinked and the mechanisms of the main metabolic disorders. Students will be able to perform the basic qualitative and quantitative methods used in biochemical laboratories, including spectrophotometric methods and the calculation of analyte's concentration based on the calibration curve.
Teaching methods:	The Course content (90 hours in total) will be carried out in the form of lectures (60 hours) and practicals (30 hours) as follows: - interactive lectures for all students - practicals (partly also theoretical including calculations in chemistry)
Assessment methods with assessment structure:	Continuous knowledge assessment will be carried out through: practicals (partly also theoretical including calculations in chemistry) and exams from theoretical parts of the course content. Pacticals This part will be conducted according to the principle of interactive learning. In the term of each laboratory exercise of this course knowledge of the students will be checked. Upon participating and having verified all all practicals, students must take the practical exam, which will encompass all laboratory units. It will consist of solving calculations and answering theretical questions. Theoretical part The partial exam I (Exam 1) is to be conducted during week 8, while the partial exam II (Exam 2) will follow after all lectures are completed (week 15). The exams may consist of multple choice questions, essay questions, filling in sentences, explaining terms and biochemical processes. In the term of final exam, which is taken after a completing this course, the student takes the exam from the parts of the course content which he did not pass within the framework of continuous knowledge assessment during the semester. The condition for accessing the final exam is regular attendance to the course classes. Grading system: Practical (max. 10 points, min. 6 points) Exam 1 (max. 45 points, min. 25 points) Exam 2 (max. 45 points, min. 25 points) Total: max. 100 points. In order to pass the whole exam, a student needs to obtain min, 55% of points from all test forms. If the student did not pass exam 1 and/or exam 2, it could be retaken in the final exam. Every passed part of the theoretical exam is recognized until the end of current school year. Final grade is based upon further elements: The final grade is formed as follows: 10 (A) - 95-100 points, 9 (B) - 85-94 points, 8 (C) - 75-84 points, 7 (D) - 65 - 74 points, 6 (E) - 55-64 points, 5 (F, FX) - below 55 points.
Literature:	Required:

	1. Jadrić R, Hasić S, Kiseljaković E. Medicinska biohemija – teorijski pregled sa prakQčnom nastavom, drugo prerađeno i dopunjeno izdanje; Perfecta, 2018. 2. Smith C, Marks AD, Lieberman M. Marksove osnove medicinske biohemije: klinički pristup; Data status, Beograd, 2008. 3. Todorović T. Oralna biohemija, Čigoja, Beograd, 2006. 4. Miholjčić M i suradnici. Biohemija, Svjetlost, Sarajevo, 1990. Supplementary: 1. Winterhalter-Jadrić M i suradnici (2007). Medicinska biohemija organa i tkiva, skripta. 2. Koračević D i saradnici (2003) Biohemija; Savremena administracija, Beograd. 3. Anđić J. (2000) Oralna homeostaza, II izdanje; Nauka, Beograd. 4. Murray, R.K. (2003) Harper's Illustrated Biochemistry Twenty. The McGraw-Hill Companies, Inc. 5. Horn, F. (2009) Biochemie des Menschen: das Lehrbuch für das Medizinstudium. Georg Thieme Verlag. 6. Hames, D., & Hooper, N. (2006). *Instant notes biochemistry*. Taylor & Francis.

Medical Biochemistry – weekly plan of lectures and practicals

Week	Lectures and Practicals	Hours
1	Lecture: Water - quantity, distribution and role in the organism. Metabolism of water and its regulation. Lecture: Minerals -distribution and roles in the organism; cations and anions - importance, distribution, and roles in the organism; trace elements (oligo-elements) Practicals: Introduction. Hazards and safety measures in the laboratory. Laboratory equipment. SI units. Indicators. Osmosis, osmotic pressure calculation, diffusion, filtration, Detection of salivary thiocyanates	1 1 3
2	Lecture: Significance of pH for the body. Changes in pH (acidosis and alkalosis). pH regulation-buffers (inorganic and organic) and organic systems in pH regulation. Lecture: Saliva composition; main salivary organic compounds: protein with lubricating properties, digestive proteins (enzymes), protein with antimicrobial properties; other organic components: blood group substances, carbohydrates, lipids, amino acids, urea, sialine; normal variation in saliva composition. Practicals: Dialysis. Biological methods for the determination of osmotic pressure.	1 2 2
3	Lecture: Enzymes - The concept of biocatalyst and enzymatic reaction. Structure of the enzyme - active and allosteric center, coenzymes. Conditions and mechanism of action of the enzyme. Specificity of the enzyme. Inhibitors and activators of enzymatic reactions. Classification of enzymes; Isoenzymes. Lecture: chemical structure of cell membranes. Cell membrane transport. Practicals: Calculations in biochemistry: preparation of physiological saline solutions, solution concentration calculations	1 1 2
4	Lecture: Oxidative phosphorylation, creation and storage of metabolic energy Lecture: Carbohydrates - biomedical significance and major representatives Practicals: Testing the capacity of organic and inorganic blood plasma buffers; Determination of free and bound sulfates;	1 1 2
5	Lecture: Digestion and carbohydrate resorption. Lecture: Glycolysis - pathway, energy balance. Practicals: Carbohydrates. Redox reactions of monosaccharides. Polysaccharides (starch hydrolysis and reactions).	1 1 2

6	Lecture: Glycogenolysis, oxidative decarboxylation of pyruvate. Gluconeogenesis, citric acid cycle, pentose phosphate cycle Lecture: Lipids - characteristics and functions. Oxidation of fatty acids: alpha, beta and omega oxidation; oxidation of fatty acids with an odd number of carbon atoms; oxidation of unsaturated fatty acids Practicals: Amino acid reactions; Kastle – Mayer test for hemoglobin detection.	1 1 2
7	Lecture: Anabolism of lipids - synthesis of fatty acids and triglycerides; Synthesis of cholesterol. Synthesis and exploitation of ketone bodies Lecture: Classification of amino acids and biological significance; biologically significant peptides Practicals: Lipids. Reactions for cholesterol and bile salt detection.	1 1 2
8	Lecture: Nitrogen metabolism. EXAM1 Practicals: Protein precipitation. Urine protein analysis. Electrophoresis of serum proteins (theoretical part).	1 2 3
9	Lecture: Special products that arise from metabolism of amino acids Lecture: Proteins. Structure. Serum proteins. Practicals: Spectrophotometry. Lambert-Beer law; Some examples of applied spectrophotometry: glucose quantification using enzymatic methods; determination of serum creatinine and urea concentrations.	1 1 2
10	Lecture: Chromoproteids - hemoglobin, myoglobin, cytochromes Lecture: Metabolism of chromoprotein; heme synthesis and degradation; bile color formation (icterus) Practicals:. Some examples of applied spectrophotometry: determination of total protein content using the Biuret method; cholesterol quantification using the cholesterol-oxidase method, quantification of serum LDL concentration	1 1 2
11	Lecture: Immunochemical reactions. Antibodies. Antigens. Lecture: Vitamins: function, sources, metabolism, hypovitaminosis. Practicals: Determination of Water and Lipid soluble vitamines	1 1 2
12	Lecture: Nucleic acids, structure, and functions; protein synthesis; genetic mutations Practicals: Enzyme activity. Pepsine activity. Fermentative hydrolysis of urea.	2 2
13	Lecture: Biochemical aspects of hormone activity Lecture: Dental plaque biochemistry: plaque fluid; Metabolism of dental plaque: the formation of acid and alkaline products in dental plaque. Changes in the pH of the plaque during feeding; synthesis of polysaccharides in dental plaque. Practicals: Activity of alpha amylase (Wolgemuth Method)	1 1 2
14	Lecture: Extracellular matrix (collagen, elastin) - characteristics; the importance of vitamin C; disorders in collagen synthesis – scurvy Lecture: Biochemical characteristics of bones; vitamin D metabolism; bone tissue disorders - rickets and osteomalacia Practicals: Clinical-biochemical analysis of urine.	1 1 2
15	Lecture: Biochemical characteristics of dental tissues (cement, dentin and enamel); Biochemical characteristics of the gingiva. EXAM 2	1 2
17	Final exam	
19	Final retake exam	

Item code: SFSOM1021E	**Course Title: Human Anatomy 2**		
Cycle: integrated	**Year: I**	**Semester: II**	**Number of ECTS credits:** 7
Status: obligatory		**Total number of hours: 90** Optionally develop the distribution of hours by type: **Lectures** 45 **Exercises 45**	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**
Prerequisite for enrollment:	All students enrolled in the 1st year of study.
Aim (objectives) of the course:	Anatomy studies the normal structure of the human body. The aim of the course is to master the material needed for further training in theoretical and clinical subjects of dental studies, through systemic and topographic anatomy. Through module 1 the student will gain knowledge about the head and neck region as a whole, muscles, blood vessels, lymph and innervation areas of the capital nerves, as well as knowledge about the topographic spaces of the head and neck with projections and organ relationships. Through module 2 the student will master the basic morphological and functional principles of organization and importance of the central and peripheral nervous system, as well as the sensory system of our body.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Topographic anatomy of the head and neck. Anatomical-surgical regions of systematic and topographic anatomy. Anatomical surgical regions of the head (musculature, blood vessels and nerves of the head, lymph vessels and nodes of the head, anatomical relationships of vascular-nervous and skeletal structures. Neuroanatomy and anesthesiology, anatomical and functional division. Neuroanatomical terminology. Orientations in the CNS. , neuroglia, synapses). Morphology of the CNS. Nn. capitales. Overview of the main sensory, motor and sensory pathways of the CNS. Vascularization and envelopes of the CNS General principles of organization of the peripheral nervous system. Vegetative nervous system. Organum visus, organum vestibulocochleare, organum gustatorium and organum olfactorium.
Learning outcomes:	Through the course of Human Anatomy 2 the student will acquire the following knowledge: Module 1. Topographic anatomy of the head and neck. Anatomical-surgical regions of systematic and topographic anatomy. Anatomical surgical regions of the head (musculature, blood vessels and nerves of the head, lymph vessels and nodules of the head, anatomical relationships of vascular-nervous and skeletal structures. Module 2. Neuroanatomy and Anesthesiology, Anatomical and Functional Division. Neuroanatomical terminology. Orientations in the CNS. Structural elements (neuron, neuroglia, synapse). CNS morphology. Nn. capitals. Overview of the main sensory, motor and sensory pathways of the CNS. Vascularization and envelopes of the CNS General principles of organization of the peripheral nervous system. Vegetative nervous system. Visual organ, vestibulocochlear organ, gustatory organ and olfactory organ. Through the course of Human Anatomy 2 the student will master the following skills:

	Recognition of muscles, blood vessels and lymph of the head and neck and innervation areas of the cerebral and spinal nerves. Recognition of topographic spaces of the head and neck, projections and relationships of head and neck organs. Recognition of morphology and topography of CNS structures and senses. Skills that the student should be able to practically perform after attending classes: Dissection of topographic regions of the head and neck on the corpse. Orientation on horizontal, frontal and sagittal incisions in the head and neck regions. Practical orientation in skeletotopic and holotopic relations of internal organs on anatomical models.
Teaching methods:	Interactive lectures Practical exercises for groups of no more than 10 students. Exercises - supervised learning on human preparations, exercise on isolated parts of the skeleton, organs and joints and dissection of the head and neck regions on cadaveric preparations, with prior testing of student knowledge for dissection of a particular region.
Assessment methods with assessment structure:	Evaluation of student knowledge in module 1 (first partial exam) is performed by oral exam with identification of anatomical structures on anatomical preparations and images. Passed material from module 1 is recognized at the final exam. The maximum number of points on the first partial exam is 50, the minimum is 25. Evaluation of student knowledge in module 2 (second partial exam) is done by a written exam (essay). Passed material from module 2 is recognized at the final exam. A student can score a maximum of 50 points, while the minimum limit is 30 points. Students who did not pass the partial knowledge tests take the final exam. The exam consists of a practical and a theoretical part. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Assigned reading: 1. Richard L. Drake, A. Wayne Vogl, Adam W.M. Mitchell: Gray's Anatomy, third edition, 2014. 2. Kieth L. Moore: Clinically Oriented Anatomy, seventh edition, 2013. 3. Atlas of Anatomy (Sobotta or Gilroy) Optional / additional reading: 1. Thieme: Color atlas of human anatomy: Vol. 1 (Platzer, 2014), Vol. 2 (Fritsch, 2014), and Vol. 3. (Kalhe. 2015). 2. Friedrich Paulsen, Tobias M. Böckers, Jens Waschke: Sobotta Anatomy Textbook, 1st Edition, 2018.

Week	Teaching and learning methods	Course load
Week 1.	Lecture: Oral cavity, division, borders, walls. Lips, cheeks, gums, teeth. Proper oral cavity (hard and soft palate, tongue). Practicals: Facial regions: oral, facial, parotideomasseteric, nasal, infraorbital and orbital region (borders, topography, muscles, blood vessels, nerves, lymph, contents of orbit	3 3
Week 2.	Lecture: Large and small salivary glands. Anatomical division of the nose (outer nose and nasal cavity), paranasal sinuses. Practicals: Frontal, auricular, occipital, and temporal region (borders, topography, muscles, blood vessels, nerves, lymph, epicranium)	3 3
Week 3.	Lecture: Esophagus (position, boundaries, outer 4 appearance, structures, esophageal cavity). Infratemporal and pterygopalatine fossa (walls and contents; masticatory muscles, trigeminal nerve, maxillary artery and veins). Parapharyngeal and retropharyngeal space (walls and contents with special reference to the four last cranial nerves and sympathetic trunk). Practicals: Anterior cervical region topography, suprahyoid and infrahyoid muscles, blood vessels, nerves. Projection points of pharynx and larynx, thyroid gland, access to the larynx and cervical part of trachea. Lateral cervical region (boundaries, topography, muscles, blood vessels, nerves, lymph). Posterior cervical region (boundaries, topography, muscles, blood vessels, nerves, lymph)	3 3
Week 4.	Lecture: Larynx (position, boundaries, outer 4 appearance, structure, laryngeal cavity). Trachea (position, boundaries, outer appearance, structure). Neck regions, neck topography on coronal, sagittal and horizontal cross sections. Practicals: Submandibular, carotid and retromandibular 4 region (boundaries, topography, muscles, blood vessels, nerves, lymph)	3 3
Week 5.	Lectures: Overview of the arterial, venous and lymphatic system of the head and neck. Practicals: Overview of the head and neck regions in the whole topography, suprahyoid and infrahyoid muscles, blood Practicals: Anterior cervical region, borders,	3 3
Week 6.	Lectures: Cranial nerves (functional characteristics, 4 pathways and peripheral distribution). Anatomic basis of regional anesthesia on the head and neck. Spinal nerves. Cervical and brachial plexus. Overview of sympathetic and parasympathetic system in the head and neck. Practicals: Cranial nerves (functional characteristics, pathways and peripheral distribution). Cervical and brachial plexus.	3 3
Week 7.	I partial exam	
Week 8.	Lecture: Division of the nervous system, neuroanatomic terminology, elements of the nervous system structure (neuron, neuroglia, synapse), development. Spinal cord (external morphology, gray and white matter, vascularization, meninges, spinal nerve organization, nerve plexus-overview, anatomical basis of the reflex.Orientation axes, spinal cord-external morphology, Practicals: CNS parts, peripheral nervous system, internal composition, spinal nerves, plexus and peripheral nerves.	3 3
Week 9.	Lecture: Cerebral trunk, position, parts, medulla 4 oblongata, pons, mesencephalon, (external morphology, organization of gray and white matter) Practicals: Medulla oblongata, pons, mesencephalon, 4 external morphology, internal composition, reticular formation and relay nuclei, cross-sections.	3 3
Week 10.	Lecture: Cerebellum, (position, external morphology, functional and phylogenetic division, small brain structure). Diencephalon (position and division, thalamus, morphology and internal composition). Epithalamus, epiphysis cerebri, metathalamus, subthalamus, hypothalamus,	3 3

	hypophysis cerebri, morphology and internal composition. Composition, neuronal circuits. Diencephalon, division. Practicals: Cerebellum, morphology and internal and external morphology, diencephalon at cross sections, thalamus. Diencephalon, structure (model), hypothalamic-pituitary axis	
Week 11.	Lecture: Telencephalon, position, division and external 4 morphology (internal structure, functional organization of the cortex, commissures and associative pathways of telencephalon, basal ganglia). Practicals: Telencephalon (position, division and 4 external morphology). The internal structure of the cerebrum-sagittal, coronal and axial sections.	3 3
Week 12.	Lecture: Sensitive and motor pathways, sensory pathways and limbic system. CNS meninges, cerebrospinal liquor, chamber system. CNS vascularization. Practicals: Overview of CNS pathways and their importance in functional and clinical anatomy, cranial and spinal cord meninges, ventricular system, subarachnoid and spinal canal spaces. Internal carotid artery system and vertebrobasilar system, superficial and deep cerebral veins, dural venous sinuses.	3 3
Week 13.	Lecture: Visual organ Practicals: Sclera, cornea, uvea and retina, dioptric eyeapparatus, auxiliary eye apparatus.	3 3
Week 14.	Vestibulocochlear, gustatory and olfactory organs. Practicals: Outer, middle and inner ear, tympanic cavity, mastoid antrum. Gustatory and olfactory organs and pathways.	3 3
Week 15.	II partial exam	
Week 17.	Final exam/retake	

Item code: SFSOM1022E	**Course Title: Histology and Embryology 2**		
Cycle: Integrated	**Year: I**	**Semester: II**	**Number of ECTS credits: 5**
Status: obligatory		**Total number of hours: 60** Optionally develop the distribution of hours by type: **Lectures** 30 **Practical work** 30	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	All students enrolled in the first year of study.		
Aim (objectives) of the course:	The aim of this module is to teach the students about the basics of organs and organ systems, morpho-functional characteristics at the level of light and electron microscopy according to the hierarchical model of the human body organization. At the same time, the student investigates the human development through basic knowledge in the domain of embryology, which allows them to understand complex relationships in the human body. This is important for the future of medical practice in the sense of the correct interpretation of developmental anomalies. The acquired knowledge from histology and embryology is the basis for understanding the pathomorphological changes in the etiopathogenesis of the diseases at the cellular, tissue and organ level.		
Thematic units:	Male reproductive organs, Female reproductive organs, General embryology, Histology of digestive system, Histology of digestive system, Embryology of		

	digestive system, Histology and embryology of cardiovascular system, Histology and embryology of respiratory system, Histology and embryology of urinary system, Embryology of reproductive system, Histology of immune system, Endocrine glands – histology and development, Histology and embryology of the nervous system, Histology and embryology of the skin and sense organs
Learning outcomes:	During lectures and practical work in Histology and Embryology 2 the student should master the structure of the human body and understand intrauterine development as a whole composed of individual mutually integrated structural components and their organizational modalities, and based on their own experience by microscopy and analysis in recognizing important histological structures. The student also acquires basic knowledge of the histology of organs and organ systems and their embryonic development from the standpoint of normal and defective morphogenesis and differentiation. Skills that the student should be able to perform practically (knows how to do it): analyze and interpret electron micrographs, independently draw histological slides, independently mark structural parts on drawings of histological slides of organs and embryos and correctly interpret observed morphological structures of formed organs and organs during development. After completing the course, the student should adopt the following attitudes: an adequate observation of histological slides is a prerequisite for proper analysis. The proper analysis of slide is a prerequisite for the understanding of structure, knowledge of the normal structure and function of cells and tissues is a prerequisite for a better understanding of a numerous disorders.
Teaching methods:	- lectures - practical works
Assessment methods with assessment structure:	Knowledge and skills in practical work are evaluated continuously. Through the course two partial exams are performed. Both partial exams are composed of the theoretical and practical part equally evaluated. Theoretical exam is in a form of written essay with oral interpretation of written text. Practical part consists of analyzing two histological slides and one electron micrograph. To pass the exam student must score at least a minimum of both theoretical and practical parts. To pass the partial exam student must score minimum of theoretical and practical part and gained points are calculated as average. The student who did not gain enough points for single or all parts of the exam can attend the final and re-sit exam. The final and re-sit exam meet the predefined criteria of the partial exams. The final grade is formed by adding up all points gained through the practical work evaluations and average points for the each partial exam. The final grade is formed based on the gained points and according to the following scale: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) - satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Mescher AL. Junqeira's Basic Histology (text & atlas), 13th edition, McGraw-Hill; 2013. 2. Sadler TW. Langman's Medical Embryology. 11th edition, Lippincott Willliams & Wilkins; 2011. 3. Kapić D, Muzika V, Čustović S, Aličelebić S, Ćosović E, Šahinović M. "Histology 2 and Embryology – A Practical Guide for Students", 1st ed, Sarajevo: Medical

	faculty, University of Sarajevo; 2023.

Teaching plan – Histology and Embryology 2

Week	Course form and content	Number of hours
Week 1.	Lecture: Male reproductive organs - Testes: tunics and parenchyma. Seminiferous epithelium epithelium: spermatogenic and Sertoli cells; cell compartments, spermatogenic cycle, its stages regulation. Morphology and ultrastructure of spermatozoa. Interstitial connective tissue – vascular components and Leydig cells – the ultrastructure and function. Histological structure of intratesticular and excretory genital ducts. Histophysiology of the penis. Accessory glands. Practical work:: Testis (LM), epididymis (LM), penis (LM) – sample, prostate gland (LM)	2 2
Week 2.	Lecture: Female reproductive organs. Ovary. Histological organization and age – dependent changes. Developmental and regressive forms of ovarian follicles and corpus luteum. The structure and function of the Fallopian tubes, uterus, vagina and external genitalia. Ovarian and menstrual cycle. Practical work: Ovary (LM), uterus (LM), vagina (LM) – sample	2 2
Week 3.	Lecture: General embryology. Fertilization. Duration of pregnancy; developmental stages and determination of gestational, embryonic and fetal age. Cleavage, blastocyst, implantation. Formation and differentiation of germ layers. Fetal and decidual membranes. Placenta: development, structure and function. Twins. Developmental anomalies – causes, classification and types. Practical work: Placenta (LM, TEM), umbilical cord (LM)	2 2
Week 4.	Lecture: Histology of digestive system. Oral cavity: lips, cheeks, soft and hard palate, tongue, teeth, periodontium, gingiva. Gustatory corpuscles. Pharynx. Esophagus. Stratification, histological structure, ultrastructure, innervation, vascularization and histophysiology of the digestive tube (stomach – anal canal). Practical work: lip (LM) – sample, tooth (LM), tooth development (LM), tongue (LM), esophagus (LM)	2 2
Week 5.	Lecture: Histology of digestive system. Salivary glands – parotid, submandibular and sublingual. Exocrine and endocrine pancreas – structure and ultrastructure: acinus, excretory ducts and Langerhans islets. Liver: lobule, portobiliary space, hepatocytes, Kupffer cells, Ito cells. Functional and nutritive blood supply. Intrahepatic and extrahepatic bile ducts, gallbladder. Practical work: fundus of stomach (LM), stomach epithelium (TEM), duodenum (LM), small intestine (TEM), large intestine (LM)	2 2
Week 6.	Lecture: Embryology of digestive system. Development of the oral cavity and its organs. Development and differentiation of the digestive tube. Development of the accessory digestive glands and spleen. Practical work: parotid gland (LM), mixed salivary gland (LM), liver (LM, TEM, SEM), pancreas (LM)	2 2
Week 7.	First partial exam (theory + practical part)	2+2
Week 8.	Lecture: Histology and embryology of cardiovascular system. Capillaries: continuous, fenestrated and sinusoidal capillaries. Elastic and muscular artery: structure and function. Veins. Endothelial cell heterogeneity. Heart: endocardium, myocardium, epicardium. Histological characteristics of the cardiac conductive system. Endocrine cardiomyocytes. Structure of lymph vessels. Embryonic and fetal circulation. Practical work: elastic artery (LM), muscular artery (LM), vein (LM), capillaries (TEM)	2 2
Week 9.	Lecture: Histology and embryology of respiratory system. Nasal cavity, paranasal sinuses, olfactory mucosa. Larynx, trachea, primary bronchi. Bronchial tree: branching and histological structure. Pulmonary lobule. Pulmonary alveoli. Vascularization and lung innervation with an emphasis on the blood – air barrier. Pleura. Development of the respiratory system.	2

	Practical work: olfactory mucosa (LM), trachea (LM), epiglottis (LM), lung (LM, TEM, SEM)	2
Week 10.	Lecture: Histology and embryology of urinary system. Kidney: cortex and medulla. Nephron: morphology and topography. Renal corpuscle. Ultrastructure of the filtration membrane. Collecting ducts and papillary ducts. Juxtaglomerular apparatus. Renal interstitium. Vascularization and renal innervation. Histology of the urinary tract. Development of the urinary system. Development of the reproductive system. Indifferent stage and differentiation during the development of gonads, genital ducts and external genitalia. Practical work: kidney (LM), filtration membrane (TEM), ureter (LM), bladder (LM)	2 2
Week 11.	Lecture: Histology of immune system. Cells and tissues of the immune system. Organization of the lymphatic organs. Histology of the thymus, lymph nodes and spleen. Mucosa-associated lymphatic tissue. Practical work: palatine tonsil (LM), lymph node (LM), spleen (LM), thymus (LM)	2 2
Week 12.	Lecture: Endocrine system. Structural typization of endocrine tissue. Pituitary gland. Epiphysis. Thyroid gland. Parathyroid gland. Adrenal gland. Hormones, control mechanisms of secretory activity with a brief presentation of the clinical presentation of hyper and hypofunctional states. Diffuse neuroendocrine system: distribution, types and morpho-functional properties. Development of endocrine glands. Development of the pituitary gland, epiphysis, thyroid gland, parathyroid glands, ultimobranchial body, adrenal gland, thymus. Practical work: pituitary gland (LM), thyroid gland (LM, TEM), parathyroid gland (LM), adrenal gland (LM), enteroendocrine cell (TEM)	2 2
Week 13.	Lecture: Histology and embryology of nervous system. Cerebrum: gray and white matter composition with an emphasis on regional differences. Cerebellum: gray and white matter. Spinal medulla: gray and white matter, regional histological differences. The structure of ganglia, nerves and sensory receptors. Meninges, choroid plexus. Morphogenesis and histogenesis of the neural tube. Neural crest differentiation. Practical work: cerebrum (LM), cerebellum (LM), spinal cord (LM), spinal nerve (LM), lamellated (Pacinian) corpuscle (LM) – sample, neural tube development (LM) - sample	2 2
Week 14.	Lecture: Histology and embryology of skin and sense organs. Histology of the skin and derivatives. Histology of the eye and ear. Skin, eye and ear development. Practical work: skin and derivatives (LM), retina (LM), lacrimal gland (LM) – sample, eye development (LM) – sample, organ of Corti (LM) – sample	2 2
Week 15.	Second partial exam (theory + practical part)	2+2
Week 17.	Final exam	
Week 19.	Re-sit exam	

Item code: SFSIM0202E	**Course Title: Hygiene**		
Cycle: integrated	**Year: I**	**Semester: II**	**Number of ECTS credits: 5**
Status: obligatory		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 15 **Exercises 30**	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	no entry requirements		

Aim (objectives) of the course:	The aim of the course is to enable students to observe the health of the individual and in the population depending on the overall environmental factors influence. The aim of the course is to help students acquire basic knowledge about the impact of social and medical factors on health and illness, as well as with the ways of organization and functioning of the health system and health care.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	**Module 1. Essential ecological problems** The goal of the module is introduction with the most significant environmental problems, such as atmospheric pollution and the presence of greenhouse effect gases, global warming and health effects. **Module 2. Health effects of physical factors** The goal of the module is training for assessing health risks under the influence of physical factors and the adoption of therapeutic priorities in the treatment of patients with disorders caused by the influence of physical factors. **Module 3. Communal hygiene problems** The goal of the module is to acquire basic knowledge about the health effects of water pollution, housing and health. **Module 4. Nutrition and health** The goal of the module is introduction with the public health significance of the nutrition. The skills that a student needs to know 1) measurement of physical factors and interpretation of results 2) applying methods for determining of nutrition status 3) assessment of living and working conditions in settlements Through the course content the students will adopt the following knowledge: Module 1. Health and determinants of health The goal of the module is to understand social medicine as a health discipline that emphasizes the importance of the health of an individual and society, introduces models of health, defines the basic determinants of health and the risky health behavior of the individual and acquires knowledge and skills for conducting health promotion, disease prevention and health education. Module 2. Population and its social and medical characteristics with a social and medical approach to solving basic health problems in the population The goal of the module is to understand the importance of the social and medical approach in solving the basic problems of an individual, primary communities and population groups with the support of basic information on health and illness and the development of dental health care programs Module 3. Health care system, resources, organization and management, with a focus on dental health care The goal of the module is to acquire basic knowledge about the characteristics, organization and management of the health care system and the necessary health resources for its functioning; acquiring basic knowledge on ways of financing of health care, the ways of paying for health care services, and the cost of health and illness; evaluation and quality control in dental health care The skills that a student needs to know 1. critical use of indicators 2. observing the problem of an unhealthy way of life 3. evaluation of interaction of subsystems in the health care system

	4. direct and indirect costs of health and illness 5. use of methods and means for health improvement
Learning outcomes:	After course classes, the student should adopt the following attitudes: critically assess the impacts of individual environmental factors - knowledge of methodology of choice in solving basic hygienic and communal problems. After attending classes, the student should adopt the following attitudes: 1. The most important task of the dentist is the maintenance and improvement of the oral health of the individual and in the community 2. Individual oral health is a precondition for general health 3. Health and illness are economic categories 4. Health is a social category 5. A well-organized health care system is one of the prerequisites for good dental health care within the country
Teaching methods:	-Lectures -Exercises
Assessment methods with assessment structure:	Students' knowledge will be tested through a partial theoretical and practical exam, which will consist of two parts: an MCQ test (multiple choice questions) and an ERQ test (essay questions) and will cover the material of Modules 1 and 2. The participation of certain forms of knowledge testing is as follows: Theoretical exam: 50 points Practical exam: 50 points The condition for passing the theoretical exam is 28 points. The condition for passing the practical exam is 27 points. The exam will be considered passed if the student has won the minimum number of points in both the practical and the theoretical part of the exam. According to the above, the rating scale is as follows: <55 points - grade 5 55-64 points - grade 6 65-74 points - grade 7 75-84 points - grade 8 85-94 points - grade 9 95-100 points - grade 10
Literature:	**Required:** 1. Lecture materials 2. Frumkin H. Environmental Health: From Global to Local, Jossey-Bass, San Francisco, 2010. (chapters according to modules) 3. Roberts M, Hsiao W, Berman P, Reich M. Getting health reform right. Washington: The World Bank Institute and Harvard School of Public Health, 2001. **Additional:** 1. Mossialos E, Dixon A, Figueras J, Kutzin J. Funding health care: options for Europe. European Observatory on Health Care Systems Series. Buckingham, Philadelphia: Open University Press, 2002.

Course syllabus Hygiene

Week	Form of teaching and materials	Number of hours

Week 1.	Lecture: Social medicine and its importance, understanding of health, determinants of health, risky health behavior, major risk factors important for oral health Exercise: Health Behavior - Surveying Healthy Individuals in Relation to Risky Health Behavior - Lifestyle	
Week 2.	Lecture: Health promotion - definition, concept, principles and practice of health promotion; Health education - definition, concept, principles and practice of health education in dentistry; motivation, methods and tools in dentistry Exercise: Elaboration of elements for the development of a health education tool with the theme "oral health"	
Week 3.	Lecture: Population and its socio-medical characteristics; health and oral health of the population in FBiH and the world; Socio-medical approach to solving leading oral problems health; health indicators general and in dentistry Exercise: Socio-medical determinants in the field of oral health, family survey	
Week 4.	Lecture: Introduction to the health system and its organization, characteristics of the health system and the principles of its organization, levels of protection and organization of dental care. Exercise: Analysis of the results obtained by surveying families	
Week 5.	Lecture: Construction of the health system, health professionals - education and training; health institutions - institutionalization of health; basics of health management. Exercise: Network of health institutions in the municipality	
Week 6.	Lecture: Economic aspects of health and diseases, models of health care financing, ways of paying for health services in health care, especially in dentistry Exercise: Allocated funds for health care per user in FBIH	
Week 7.	Lecture: Legislation in health care; state functions in health care, evaluation and quality control in dentistry Exercise: Case report on non-compliance with legislation in the FBIH	
Week 8.	Lecture: Terms and definitions in the field of environment Exercises: Physical factors acting through thermoregulatory mechanisms Lecture: International health systems Exercise: recapitulation of completed exercises	
Week 9.	Lecture: Climate and impact on health Exercises: Measurement of physical factors	
Week 10.	Lecture: Air pollution Exercises: Pollutants in the air	
Week 11.	Lecture: Radiation Exercises: Microclimatic measurements	
Week 12.	Lecture: Communal hygiene Exercises: Risk control	
Week 13.	Lecture: Industrial Hygiene Exercises: Methods of conditioning drinking water	
Week 14.	Lecture : Food hygiene Exercises: Methods of examining diet and nutrition	
Week 15.	Lecture: Food safety Exercises: Food poisoning	
Week 17.	Final exam	
Week 19.	Final exam-retake	

Item code: SFSOS1023E	**Course Title: Dental morphology with dental anthropology 2**		
Cycle: integrated	**Year: I**	**Semester: II**	**Number of ECTS credits:** 3
Status: obligatory		**Total number of hours: 30** Optionally develop the distribution of hours by type: **Lectures** 1 (15) **Exercises** 1 (15)	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]
Prerequisite for enrollment:	All students enrolled in the 1st year of study.
Aim (objectives) of the course:	The aim of the course is to introduce students to microanatomical (histological) and developmental (embryological) characteristics of hard and soft dental tissues, and supportive structures.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units were formed with the aim that students learn the basics of normal histology and embryology of deciduous and permanent dentition, in order to be able to recognize deviations and pathological changes. The plan of lectures by week is attached.
Learning outcomes:	Knowledge: To know the histological structure of a tooth and the supporting tissues, and the embryonic development of the dental organ. Skills: Master the nomenclature and terminology of the microscopic structure of teeth; to be able to recognize histological preparations of dental tissues, and recognize developmental anomalies of teeth. Competencies: To be able to understand and follow future clinical courses that treat pathological changes in the dental organ.
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Acquired knowledge is assessed through two tests during the semester, and a final exam. The first test during the semester involves a practical assignment consisting of accurate recognition, naming, and oral description of the histological specimen. Recognition and naming are eliminatory for the student to proceed to an oral description of the specimen. This test carries 5 to 10% of the total mark. The second test during the semester involves a practical assignment consisting of exact recognition, naming, and oral description of one dental anomaly. Recognition and naming are eliminatory for the student to proceed to an oral description of anomaly. This test also carries 5 to 10% of the total mark. Students who do not pass partial tests must take the final exam as described. Students take the final exam if they pass both practical assignments, and the final exam consists of a written test. For the test to be considered passed and scored, it must contain a minimum of 60% correct answers. The final exam carries 45 to 80% of total mark. The formation of total mark is done in such way that the number of total points obtained through all forms of knowledge assessments (practical assignments and written test) is translated into the final mark, as follows:

	10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Vuković A. i saradnici. Osnovi morfologije zuba i dentalne antropologije, Stomatološki fakultet Unoverziteta u sarajevu, Sarajevo, 2013. 2. Avery JK, Chiego DJ. Osnovi oralne histologije i embriologije – klinički pristup. Datastatus, Beograd, 2011 Additional: 1. Berkowitz BKB, Holland GR, Moxham BJ. Oral Anatomy, Histology and Embriology. Mosby, St. Louis, 2002. 2. Nikolić I et al. Osnovna oralna histologija i embriologija. Data Status, Beograd, 2019. 3. Vojinović O. i sar. Biologija zuba. Naučna knjiga, Beograd, 1986. 4. Gašperčič D, Cvetko E, Jan J. Histološki atlas zobnega organa. Medicinska fakulteta, Ljubljana, 2000.

Teaching plan of the course Dental morphology with dental anthropology 2

Week	Form of teaching and lectures	Hours
Week 1.	Lecture: Dental organ; Tissues of dental organ – ectodontium, endodontium, and periodontium; Histophysiology properties of enamel – physical and chemical properties. Exercises: Observation and drawing of light microscopic and electron microscopic preparations of dental organ and enamel from digital photographs.	1 1
Week 2.	Lecture: Enamel; Submicroscopic structure of the enamel – enamel prisms; Structural lines in enamel (Retzius' lines, neonatal line, Hunter-Schregger lines), enamel-dentinal junction; Hypo-mineralized zones in enamel (enamel rods, lamellae, and spindles) – clinical significance; Fluorine and enamel – remineralization process. Exercises: Observation and drawing of light microscopic and electron microscopic preparations of enamel from digital photographs.	1 1
Week 3.	Lecture: Histophysiological properties of dentin - physical and chemical properties; Submicroscopic structure of dentin – dentinal tubule and its content, number, and shape of dentinal tubules; Structure and histo-physiological characteristics of pre-dentin (circumpulpal and mantle dentin). Exercises: Observation and drawing of light microscopic and electron microscopic preparations of dentin from digital photographs.	1 1
Week 4.	Lecture: Dentin – mineralization process, incremental lines; Intertubular and peritubular dentin; Thomes' granulated layer of dentin and hyaline dentin; Structure and formation of physiological secondary and tertiary dentin – clinical significance; Innervation of dentin. Exercises: Observation and drawing of light microscopic and electron microscopic preparations of dentin from digital photographs.	1 1
Week 5.	Lecture: Histophysiological properties of dental pulp; Dental pulp – connections and relations with other dental tissues; Micromorphological characteristics - base substance (fibers) and pulp cells (odontoblasts, fibroblasts, stem cells, and reticuloendothelial cells). Exercises: Observation and drawing of light microscopic and electron microscopic preparations of dental pulp from digital photographs.	1 1
Week 6.	Lecture: Dental pulp – blood flow and innervation; Biology of pulp; Regressive and degenerative changes of dental pulp – clinical significance.	1

	Exercises: Observation and drawing of light microscopic and electron microscopic preparations of dental pulp from digital photographs.	1
Week 7.	Lecture: Histophysiological properties of mature parodontium – periodontal tissues; Cementum – structure, physical and chemical properties; Variations of cementum-enamel junction; Functional changes in cementum; Histophysiological properties of a periodontal ligament – structure, physical and chemical properties; Fibres and cells of the periodontal ligament; Blood vessels and lymphatic vessels, innervation and physiology od periodontal ligament. Exercises: Observation and drawing of light microscopic and electron microscopic preparations of cementum from digital photographs.	1 1
Week 8.	Lecture: Histophysiology of alveolar bone – physical and chemical properties, structure, physiology, clinical significance; Histophysiology of gingiva – epithelium and lamina propria; Gingival fibers; Histophysiology of parodontium – vascularization, innervation, mechanical properties of supportive tooth tissues, traumatic periodontal damage, orthodontic tooth displacement. Exercises: Observation and drawing of light microscopic and electron microscopic preparations of cementum from digital photographs.	1 1
Sedmica 9.	Lecture: Development of dental organ – lamina vestibularis and lamina dentalis. Segmentation of lamina dentalis. Enamel organ formation, differentiation of dental papilla. Dental follicle. Physiological processes that follow the morphological stages of the tooth germ. Tooth embryo beams. Exercises: Observation and drawing of light microscopic and electron microscopic preparations of the periodontal ligament from digital photographs.	1 1
Week 10.	Lecture: Enamel organ in bell stage; Histology of embryonic tooth structures in bell stage; Amelogenesis - development of ameloblasts, secretion and maturation of enamel matrix. Exercises: Observation and drawing of light microscopic and electron microscopic preparations of alveolar bone and gingiva from digital photographs, with special reference to functional unity of periodontal tissues.	1 1
Week 11.	Lecture: Dental papilla – development of endodontium, development of odontoblasts and secretion of pre-dentin, with special reference to development of pulpal structures. Exercises: Observation and drawing of light microscopic and electron microscopic preparations of tooth germ development from digital photographs – dental lamina, segmentation to bell stage.	1 1
Week 12.	Lecture: Root development of single-rooted and multi-rooted teeth. Development of cementum, periodontal ligament and alveolar bone. Exercises: Observation and drawing of light microscopic and electron microscopic preparations of tooth germ in bell stage and enamel organ differentiation from digital photographs.	1 1
Week 13.	Lecture: Irregularities in tooth development, etiology, pathogenesis. Developmental anomalies of teeth and their connection to changes in physiological processes of tooth development (initiation, proliferation, morpho-differentiation) – anomalies of number, size and shape of teeth. Exercises: Observation and drawing of light microscopic and electron microscopic preparations of tooth germ development from digital photographs – all developmental stages.	1 1
Week 14.	Lecture: Irregularities in tooth development, etiology, pathogenesis. Developmental anomalies of teeth and their connection to changes in physiological processes of tooth development (histodifferentiation and apposition) – structural anomalies. Exercises: Developmental anomalies of teeth and their recognition on extracted natural human teeth.	1 1
Week 15.	Lecture: Clinical importance of developmental tooth anomalies. Exercises: Radiographic images of developmental anomalies.	1 1
Week 17.	Final exam	
Week 19.	Corrective exam	

Code: SFSIS0106E	**Course Title: Introduction to dentistry with history of dentistry**

Level: integrated	Year: I	Semester: II	No ECTS credits: 3
Status: Elective		Total classes: 30 Lectures 2 (30) Practical exercise 0 (0)	
Teaching participant	**Teachers and associates selected in the field to which the subject belongs / subject**		
Requirements for attending:	Students enrolled in the 1. Year of study who elect this course		
Objectives of the course:	Introducing students to the organization of studies at the Faculty of Dentistry, duties and competencies of the doctor of dental medicine, opportunities for further training and education after completing the studies, and the working place of the doctor of dental medicine. Introducing students to the history of the dental profession and the most famous names in dentistry		
Thematic units:	Thematic units were formed to give students an idea of the historical development of dentistry as a scientific discipline; to learn the manner and organization of teaching at the Faculty of Dentistry; the basic principles of the dental profession and becoming familiar with the workplace of a doctor of dental medicine. The teaching plan is given by the weeks in the attachment		
Outcomes:	Knowledge: Have a realistic idea of the study itself and its future profession. Understand how the historical development of society and scientific thought has influenced the development of dentistry, especially knowing the development path of medicine and dentistry in Bosnia and Herzegovina Skills: Understand the possibilities of career development and lifelong learning Competencies: Develop positive attitudes towards dental medicine, and be able to apply adequate terminology in everyday dental practice.		
Teaching methods	Interactive lectures Seminars		
Assessment methods with mark structure:	Acquired knowledge is assessed through a partial knowledge test and a final exam. Knowledge assessment and final exam are in a form of a written test. In order for the test to be considered passed and scored, it must contain a minimum of 60% correct answers. The final grade is formed according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, and carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.		
Literature:	Required: Ahmić A. i sar. Uvod u stomatologiju s historijom i etikom. Sarajevo: Izdavač Stomatološki fakultet Univerziteta u Sarajevu, 2018. Additional: 1. Vodanović M, Alt K et al. Essentials of Dental Medicine, Naklada Slap, 2022. 2. Williams JR. Dental Ethics Manual. France: FDI World Dental Federation;2007		

Week	Form of teaching and material	Number of hours
Week 1.	Lecture: Introductory remarks on the subject, Definition of dentistry and its position within medicine and society. Motivation to study. Method of organization of dental studies (teaching, scientific research and professional work). Instructions for writing a term paper	2
Week 2.	Lecture: The importance of knowing the history of dentistry. Paloeoodontology. Prehistoric Age Medicine of the Ancient Peoples: Mesopotamia, Ancient Jews, Egypt, Phoenicians	2
Week 3.	Lecture: Medicine of ancient peoples: Greece, Rome, Etruscans; Medicine of Oriental Peoples: China, Japan, Hindus	2
Week 4.	Lecture: Middle Ages: monastic and scholastic medicine; The Arabic medicine. The influence of Monastic and Arabic Medicine on the development of medicine and dentistry in Bosnia and Herzegovina and the region	2
Week 5.	Lecture: Medicine and dentistry in the Renaissance and Baroque period; Dentistry in the Age of Rationalism and in the Industrial Age. A historical overview of the development of dental equipment and instruments.	2
Week 6.	Lecture: The historical development of medicine and dentistry in Bosnia and Herzegovina Herzegovina.	2
Week 7.	Oral health as a part of overall human health. Preventive-promotional and curative aspects of oral health.	2
Week 8.	Lecture: Jobs and tasks of a doctor of dentistry – guidelines in education and basic competencies of a future doctor of dentistry. Interdisciplinary cooperation in the field of diagnosis and treatment of oral diseases. Professional training of dentists and specialist areas in dentistry.	2
Week 9.	Lecture: Position of Doctor of Dental Medicine - equipment and instruments. Dental team. Analysis of the possibilities of training of Doctors of Dental Medicine	2
Week 10.	Lecture: Disinfection and sterilization. Introduction to dentist's working place	2
Week 11.	Lecture: Organization of health care, organization of dental care (primary, secondary and tertiary)	2
Week 12.	Lecture: Professional associations, national and international (US FBiH, KL/DS FBiH, WHO, FDI, BaSS, WMA, IDEALS..). Database search, selection of relevant information Guidelines for the development of dental activity as recommended by the WHO and FDI.	2
Week 13.	Lecture: Access to information and its use in mastering the material and in terms of educational, clinical, scientific and practical application. Journals, publications, databases. Social media in dentistry. Examples of promotional campaigns	2
Week 14.	Lecture: Occupational and work-related diseases	2
Week 15.	Lecture: Dental tourism. Digital technologies and Artificial Intelligence in dental medicine	2
Week 17.	Final exam	
Week 19.	Corrective exam	

<table>
<tr><td>Subject number:
SFSIO0203E</td><td colspan="3">Subject name: Health informatics</td></tr>
<tr><td>Level: :
integrated</td><td>Year: I</td><td>Semester: II</td><td>ECTS points: 3</td></tr>
<tr><td colspan="2">Status: elective</td><td colspan="2">Total number of hours: 45
Optionally develop hours distribution by type:
Lectures 30
Laboratory excercises 15
Seminar 15
Practical work activities 15
Total student workload: 75</td></tr>
<tr><td colspan="2">Teaching participants:</td><td colspan="2">Teachers and assistants selected in the field to which the subject belongs</td></tr>
<tr><td colspan="2">Requirement for student enrollment:</td><td colspan="2"></td></tr>
<tr><td colspan="2">Subject goal (goals):</td><td colspan="2">The main goals of the Health Informatics course are to enable medical / health science students to acquire basic knowledge and skills of health informatics, as well as basic health decision-making methods that enable defining the framework of the health problem, on the one hand, defining the research problem and identifying information. which will play an important role in resolving them, on the other hand. The skills of searching from, but also generating data for, various databases and knowledge, provide relevant information, but these skills also presuppose a critical evaluation and synthesis of information in them. Acquired basic knowledge and skills of informatics in healthcare are necessary for:
(a) adequate use of data, knowledge and information in the healthcare system necessary to understand the mechanisms present in healthy and sick people (groups);
(b) understanding and harmonizing the requirements of health information systems in health decision-making that is essential in diagnosis, therapy and prevention;
(c) the application of information technology to improve the health of the population needed for a systematic approach to the organization, processing and communication of data, information and knowledge in the healthcare system.</td></tr>
<tr><td colspan="2">Thematic units:
(If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)</td><td colspan="2">INTRODUCTION TO HEALTH INFORMATICS
Application of informatics in the past, present and future. Advantages and disadvantages of computerization. The concept of health and pharmaceutical informatics. Introduction to Word. Example of writing a CV.
HEALTH DATA, INFORMATIONS AND KNOWLEDGE
Searching, retrieval, processing, transmitting and generating medical data, information and knowledge. Sources of scientific and professional information; collecting, publishing and searching professional and scientific information. Introduction to Excel.
ELECTRONIC COMPUTER. OPERATING SYSTEMS AND USER PROGRAMS.
Computer Architecture (John von Neumann); Division of electronic computers (according to the type of data, according to purpose and power); Historical development of computers; Characters in the</td></tr>
</table>

	computer (bit, byte, word, code); Computer assemblies (central processing unit, memory, input / output assemblies, buses, other parts); Computer networks; Operating systems (MS DOS, Windows, other operating systems); User programs (word processing programs, spreadsheet programs, presentation programs, communication programs, unwanted and malicious programs, and computer security programs). Introduction to PowerPoint. INTERNET AND MEDICINE INFORMATION The concept and development of the Internet; Internet connection; Network services (electronic mail, mailing lists, network, data transmission service, newsgroups, other); Possibilities and role of the Internet in health science and profession (bibliographic databases and electronic journals, thematic portals); Internet in the field of medicines (opportunities, benefits, risks); Online pharmacies. Introduction to the Internet. DATABASE Case study - Creating databases. Data manipulation in databases. HEALTH SYSTEM OF BOSNIA AND HERZEGOVINA. MEDICAL CLASSIFICATIONS. MEDICINE INFORMATION. Typical (sub) systems in the BiH health system; Data in primary healthcare (what data are collected, reasons for collection, obligation to keep electronic health records); Public health activity - Institute of Public Health (registers); Health insurance - (identification of the insured; online access to services); Medical Classifications (International Classification of Diseases, Anatomical Therapeutic-Chemical Classification of Medicinal Products); Drug information (commercial and non-commercial sources). Legislation on Medicines and Medical Devices in Bosnia and Herzegovina. STANDARDS, INTEROPERABILITY, SAFETY, QUALITY AND ETHICS IN HEALTH INFORMATICS. Identification standards, transaction standards, terminology standards, interoperability, basic security principles, ethics in informatics, ethical decision making, ethical dilemmas and morals. ELECTRONIC HEALTH RECORD Identification of information process, data structure, classifications and nomenclatures, standardization, secrecy and security. Patient data. INFORMATION SYSTEMS Health information systems: e-pharmacy, e-card, e-receipt, e-ordering, e-ambulance, AIS, BIS, KIS, LIS, RIS INTEGRATED HEALTH INFORMATION SYSTEM Case study - electronic health documentation, examples, use, evaluation. EVIDENCE BASED MEDICINE. ARTIFICIAL INTELLIGENCE IN HEALTHCARE SYSTEM. Case study - artificial intelligence, machine learning, fuzzy logic. ANALYSES OF BIOMEDICAL SIGNALS Case study – ECG i EEG analyses. TELEMEDICINE, DIGITAL HEALTH AND TRENDS IN HEALTH INFORMATICS

	Case study - Telemedicine, teleconsultations, telemonitoring and trends in health informatics. Medical Imaging, PACS systems, Mobile technologies in healthcare.
Learning outcomes:	Understanding the meaning, content and development of information and communication technologies (ICT), and their application in health science and profession. 1. Knowledge of basic IT concepts and standardization in health informatics; 2. Understanding and possibilities of using information systems in healthcare; 3. Knowledge acquisition about operating systems and special programs for business in healthcare; 4. Internet application in health science and profession; 5. Learning about the collection and application of scientific and professional information in healthcare.
Teaching methods:	Lectures and laboratory activities
Testing methods with assessment structure:	
Literature:	**Mandatory:** Health informatics, Badnjević, Gurbeta-Pokvić, University textbook, Sarajevo, 2022 **Recommended**: Kern J, Petrovečki M, editors. Medical informatics. Zagreb: Medical edition ; 2009.

Item code: SFSIM0107E	**Course Title: INTRODUCTION TO EXPERIMENT AND LABORATORY**		
Cycle: integrated	**Year: I**	**Semester: II**	**Number of ECTS credits: 3**
Status: elective		**Total number of hours 45** Optionally develop the distribution of hours by type: **Lectures** 30 **Exercises 15**	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	no entry requirements		
Aim (objectives) of the course:	The objective of the course is to provide students with direct access to a large number of laboratories, as well as that students could objectify basic knowledge about science, scientific method and scientific research through theoretical lectures, in order to increase its motivation for acquiring knowledge.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)			

Learning outcomes:	Through this course content the student will receive relevant information on designing the experiment and objectifying results through laboratory work, and on the basis of the chronology of specific phases of work on clinical and animal samples, and through the design of various biomedical laboratories. They will also be introduced into the bioethical principles of scientific work, legal regulations, search of bibliographic data, standardization of working conditions in the laboratory, and health hazards in experimental work and the procedures of their blockage. Through the course the student should adopt the following skills: 1. Database search 2. Designing an experiment.
Teaching methods:	-Lectures -Exercises
Assessment methods with assessment structure:	1. regular course classes attendance - 10 points 2. seminar work on the given topic - 35 points 3. Final exam in written form - 55 points Final grade is formed as follows: 10 (A) - 95-100 points; 9 (B) - 85-94 points; 8 (C) - 75-84 points; 7 (D) - 65-74 points; 6 (E) - 55-64 points; 5 (F) - under 55 points.
Literature:	lectures handouts

Course syllabus Introduction in experiment and laboratory

Week	Form of teaching and materials	Number of hours
Week 1.	Lecture: Science, scientific method and scientific research with an emphasis on the education of students and research staff Exercises: Survey and analysis of motives for attending the course	2 1
Week 2.	Lecture: Bioethics and good scientific practice with an emphasis on the recommendations of the International Commission for Professional Self-Regulation of Science and Intellectual Dishonesty in Science Exercises: Analysis of bioethics on a selected example	2 1
Week 3.	Lecture: Searching bibliographic data with an emphasis on scientific articles and scientific journals Exercises: Library and databases	2 1
Week 4.	Lecture: Observational and experimental studies with an emphasis on the chronological sequence of work phases and biostatistics Exercises: Statistical tests	2 1
Week 5.	Lecture: Clinical and animal sample. Laboratory design Exercises: Vivarium: animal care during the experiment	2 1

Week 6.	Lecture: Biotechnology with an emphasis on tissue, cell and organ culture Exercises: Molecular medicine laboratory design	2 1
Week 7.	Lecture: Laboratory for experimental studies on animal models with an emphasis on standardization of working conditions and protective equipment of staff Exercises: Laboratory of Cytogenetics	2 1
Week 8.	Lecture: Microbiological and Biomedical Laboratory Exercises: Microbiological laboratory	2 1
Week 9.	Lecture: Histotechnological laboratory for photomicroscopy and preparation of photodocumentation Exercises: Histotechnological laboratory for photomicroscopy	2 1
Week 10.	Lecture: Histotechnological Laboratory for Electron Microscopy Exercises: Histotechnological Laboratory for Transmission and Scanning Electron Microscopy	2 1
Week 11.	Lecture: Histotechnological Laboratory for Immunocytochemistry Exercises: Histotechnological Laboratory for Immunocytochemistry	2 1
Week 12.	Lecture: Histotechnological Laboratory for Fluorescence Microscopy Exercises: Laboratory for Fluorescence Microscopy	2 1
Week 13.	Lecture: Health hazards in experimental work Exercises: Protective equipment, chemical storage and waste disposal	2 1
Week 14.	Seminar: Selected Chapters Exercises :.Application of the multiplication system on human skin	2 1
Week 15.	Seminar: Selected Chapters Exercises: Making a photo document	2 1
Week 16.	Final exam	

Item code: SFSIS1024E	**Course Title: Biology of Human Teeth**		
Cycle: integrated	**Year: I**	**Semestar: II**	**Number of ECTS credits:** 3
Status: elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 1 (15)	
Teaching Participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		

Prerequisite for enrollment:	Students enrolled in the 1st year of study who choose this subject
Aim (objectives) of the course:	The course aims to acquaint students with knowledge of microanatomical (histological) characteristics of soft and hard tissues of dental organum. Allow the acquisition of detailed knowledge of tissue structure, the relationship between their ultrastructure, and reactions of dental tissues affected by pathological and immune processes.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Subjects' units are created for students in order to give them the opportunity to freely follow the teaching of future clinical subjects when the student will be faced with pathological changes of the dental organum as well as with therapeutical procedures possibilities.
Learning outcomes:	Knowledge: To acquire knowledge about histophysiological characteristics of all tissues of dental organum in detail. Skills: To acquire knowledge about mechanisms of tissue response to harmful stimuli as well as avoiding iatrogenic damage of tissues of dental organum during dental procedures. Competitions: To understand organum dental tissues defense mechanisms.
Teaching Methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Acquired knowledge is assessed through knowledge evaluation during a semester and the final test exam as well. In order for the test to be considered passed and scored, it must contain a minimum of 60% correct answers. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. MjØr IA. Biologija pulpe i dentina u restaurativnoj stomatologiji. Data Status, Beograd, 2008. 2. Vojinović O. i sar. Biologija zuba. Naučna knjiga, Beograd, 1986. 3. Šutalo J. i sar. Patologija i terapija tvrdih zubnih tkiva. Naklada Zadro, Zagreb, 1994. Additional references: 1. Berkowitz BKB, Holland GR, Moxham BJ. Oral Anatomy, Histology and Embriology. Mosby, St. Louis, 2002. 2. Garant PR. Oral Cells and Tissues. Quintensence Books, Chicago, 2003.

Teaching plan of the course Biology of human teeth

Week	Form of teaching and lectures	Hours
Week 1.	Lecture: Dental Enamel-substance or tissue? Practice: Review of clinical procedures on dental enamel	2 1
Week 2.	Lecture: Models of demineralization, remineralization and precipitation in dental enamel; Theories of dental caries forming.	2

	Practice: Histological specimens of carious lesions	1
Week3.	Lecture: Non-carious lesions in dental enamel– nomenclature and etiology Practice: Histological specimens of non-carious lesions.	2 1
Week 4.	Lecture: Normal structure and physiology of the pulp-dentinal complex; Dentinal and pulpal pain Practice: Differential diagnosis of pain	2 1
Week 5.	Lecture: Carious lesion: characteristics of the carious lesion and pulp-dentinal complex reactions Practice: Histological characteristics of pulp-dentinal reaction.	2 1
Week 6.	Lecture: Initial lesions caused by cavity preparation Practice: Causes of iatrogenic damage of pulp-dentinal complex.	2 1
Week 7.	Lecture: Inflammatory reactions in the pulp – divisions and consequences Practice: Histological characteristics of inflamed pulp.	2 1
Week 8.	Lecture: Reactions to restorative materials; Tooth-filling connection and adhesive techniques Practice: Smear and hybrid layer.	2 1
Week 9.	Lecture: Changes on pulp-dentine complex tissue caused by non-carious lesion as well as trauma. Practice: The response of dental tissues to trauma.	2 1
Week10.	Lecture: Exposed pulp tissue. Practice: Histological and biological basis of regenerative endodontics	2 1
Week11.	Lecture: Histophysiology of tooth cementum; Resorption and repair of tooth cementum; Hypercementosis. Practice: Histological and biological characteristics of tooth cementum.	2 1
Week12.	Lecture: Carious root lesions – clinical aspect of hard tissue biology of the tooth root. Practice: Restorative material and tooth cementum connection.	2 1
Week 13.	Lecture: Histophysiology of periodontium; Resorption and re-modulation process. Practice: Iatrogenic damage of periodontium causes.	2 1
Week14.	Lecture: Histophysiology of alveolar bone. Practice: Alveolar bone biological potential.	2 1
Week15.	Lecture: Reparation processes in the apical periodontium. Practice: Iatrogenic damage causes in the apical periodontium.	2 1
Week 17.	Final exam	
Week 19.	Corrective exam	

Item code: SFSIS1025E	**Course Title: General and social dental medicine**		
Cycle: integrated	**Year: I**	**Semester: II**	**Number of ECTS credits:** 3
Status: elective		**Total number of hours: 30** Optionally develop the distribution of hours by type: **Lectures** 15 **Exercises 15**	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	Choosing the course as an elective		

Aim (objectives) of the course:	The goal of the course is to train the student to: Recognizes and understands the basic factors that affect people's oral health, including social, cultural, economic, and political determinants of health and the way they affect overall health.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Theoretical health concept and the most important factors that influence health in general. Population health assessment and social diseases. Financing of the healthcare system. Economical aspect of health and disease. Management and quality in health care. Preventive measures for oral health protection. Health promotion. Legislative in general health care and dental care. The media and public oral health
Learning outcomes:	Knowledge: After attending the class, the student will be able to: - Understand the organization, functioning and financing of the health care system in general as well as legislative aspects of health care. Student will acquire knowledge of standards and norms related to dental health care. -Understand strategies in creating preventive programs for the protection of oral health and assesses their advantages and disadvantages. Skills: After attending the class, the student will be able to: -Identifies and describes different types of research projects: descriptive, analytical and experimental - and adopts the principles of evidence-based clinical oral health care, - Apply the results of evidence-based studies, in the process of developing a system of patient-oriented health care with high ethical principles. Competencies: After attending the class, the student should have the following competencies: - to plan, organize and participate in research of oral health of the population at the local and national level, -Know and understand the strategies for the planning of preventive programs for oral health protection and to assess the advantages and disadvantages of different programs.
Teaching methods:	The course is performed in the form of: • Lectures • Practice exercises- groups according to standard Interactive learning for all students (during the lectures and practice exercises)

Teaching plan General and social dental medicine

Week	Course form and content	Number of hours
Week 1.	Lectures: Theoretical concept of health and the most important factors that influence health in general. Practice: Course description, an introduction to the syllabus and the methodology of conducting classes and exams.	1 1
Week 2.	Lectures: Population health assessment and social diseases. Practice: Oral health day -Preparation of promotional material	1 1
Week 3.	Lectures: Epidemiological indicators of oral health. WHO Oral health surveys: basic methods. Practice: Oral health day -Presentation of promotional material.	1 1
Week 4.	Lectures: Planning of dental health care. Public oral health programs. Practice: Planning the preventive program of public oral health. Analyze of the factors that influence public oral health.	1 1
Week 5.	Lectures: Strategies for the improvement of oral health, the levels of prevention and the differences between the three levels of prevention. Practice: The development of preventive program of public oral health with the main goals, participants, financing, and the method of evaluation	1 1
Week 6.	Lectures: Quality control and improvement in oral health care Practice: Presentation of the preventive program.	1 1
Week 7.	Lectures: Financing of the healthcare system. Economical aspect of health and disease. Practice: Analysis of the financing of healthcare systems in different countries (first phase)	1 1
Week 8.	Lectures: Health care evaluation with the accent on dental health care. Practice: Analysis of the financing of healthcare systems in different countries (second phase)	1 1
Week 9.	Lectures: Oral health promotion and health education. History of health education. Models and methodology. Practice: Preparation of educational lectures in the field of oral health protection for different population groups.	1 1
Week 10.	Lectures: Lifestyle and oral health Practice: Presentation of educational lectures in the field of oral health protection for different population groups.	1 1
Week 11.	Lectures: The concept of oral health, disease and quality of life. Practice: Survey as a research instrument in dentistry. Types of surveys (first phase).	1 1
Week 12.	Lectures: The role of doctor of dental medicine in health care of the population. Practice: Survey as a research instrument in dentistry. Types of surveys (second phase).	1 1

Item code: SFSIS1026E	**Course title: Basic principles of scientific research work**		
Cycle: integrated	**Year: I**	**Semester: II**	**ECTS credits:** 3
Status: elective		**Total number of hours: 30** Optionally develop the distribution of hours by type: Lectures: 15 Exercises: 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	Defined by the studying rules; Choosing the course as an elective		

Aim (objectives) of the course:	The goal of the course is for students to acquire the knowledge and skills necessary for: - learning using evidence-based information; - preparation, display and presentation of the results of research work by applying basic scientific postulates and information technology; A further goal is to prepare students, future doctors of dental medicine, in order to be able to recognize and use: - medical knowledge (information) based on evidence; - the need to constantly develop a scientific way of thinking when studying in the subjects of preclinical and clinical dental medicine; - the role and tasks of the doctor of dental medicine in the healthcare team with the application of basic scientific principles in the development and improvement of disease diagnosis and patient treatment.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Introductory considerations; scientific way of thinking; scientific information and indicating the source of the information used; internet and dental health literacy; plagiarism; evidence-based research; scientific research and types; analysis, interpretation and presentation of the obtained results; scientific work and creation.
Learning outcomes:	Knowledge: collection, differentiation and classification of data types; adequate literature search and databases; interpreting the basics of statistical inference; ethical approaches to the creation of scientific work; plagiarism, recognition and consequences. Skills: synthesis and analysis of previous research from a specific field of research; design, organization and implementation of scientific research based on postulates based on scientific evidence and postulates of teamwork. Competences: writing, argumentation and presentation of scientific work.
Teaching methods:	The course is performed in the form of: • Lectures • Practice exercises- groups according to standard • Interactive learning for all students (during the lectures and practice exercises)
Assessment methods with assessment structure:	Attendance and activity in course classes is mandatory and compliance is subject to the regulations governing this area. After performing and evaluating all forms of teaching and completing the final exam, students can score a maximum of 100 points. The final grade will be based on the following elements: 1. Exercise activity up to a maximum of 30 points. The exercises are carried out through educational lectures and seminars. The work on the exercises will be evaluated continuously during their performance and by evaluating the presentation and structure of the seminar papers. 2. One partial exam during semester (9th week) carrying a maximum of 40 points. The partial exam is written in the form of a MCQ test. Passing the partial exam is not a condition for passing the final exam. If the student does not pass the partial exam, he passes the entire material on the final exam. If enough points are earned in the activities on practical training and partial exam for passing grade, it is considered that it is achieved and the student is not obliged to take the final exam, unless he/she wants to achieve a better final grade.

	3. The final exam is in a MCQ test form and carries a maximum of 30 points. If the student takes the final exam integrally, then he can score a maximum of 70 points. If the student has achieved enough points for passing grade within the exercise activities and the partial exam, he is not required to take the final exam. The final grade represents the total number of points gained, through all forms of knowledge testing, as follows: 10 (A) – carries 95-100 points 9 (B) – carries 85-94 points 8 (C) – carries 75-84 points 7 (D) – carries 65-74 points 6 (E) – carries 55-64 points 5 (F, FX) – below 55 points.
Literature:	Required: • Goyal RC. Research methodology for health professionals. New Delhi: Jaypee Brothers Medical Publishers Ltd; 2013. • Fathalla MF. A practical guide for health researchers. Cairo: WHO Regional office for the Eastern Mediterranean; 2004. • Amar-Singh HSS, Abu Bakar A, Sararaks S. The Medical Research Handbook. Planning a Research Project. Kuala Lumpur: Institute of Health Systems Research; 2008. Additional: • Bowling A. Research methods in health. Investigating health and health services. Berhshire: Open University Press; 2014. • Hulley SB et all. Designing a Clinical Research. Fourth edition. Philadelphia: Lippincott Williams and Wilkins; 2013.

Teaching implementation plan of Basic principles of scientific research work		
Week	Course form ad content	Number of hours
Week 1	Lecture: Introductory considerations, historiography of scientific thought Exercises: Introduction to practical exercises	1 1
Week 2	Scientific way of thinking and scientific information Exercises: Examples of scientific way of thinking	1 1
Week 3	Lecture: Determining the quality of scientific information Exercises: Ways of determining the quality of scientific information	1 1
Week 4	Lecture: Scientific databases and their searching Exercises: Ways of searching scientific databases	1 1
Week 5	Lecture: Evidence-based research Exercises: Examples of evidence-based research	1 1
Week 6	Lecture: Internet and health literacy Exercises: Examples of the connection between the Internet and health literacy	1 1
Week 7	Lecture: Plagiarism Exercises: Ways of determining plagiarism	1 1
Week 8	Lecture: Scientific research and types Exercises: Examples of types of scientific research	1 1
Week 9	Lecture: Report on the conducted research, structuring of the report	1

	Exercises: Types of research reports	1
Week 10	Lecture: Citation of sources of used informations Exercises: Types of citation	1 1
Week 11	Lecture: Methodological principles of scientific research Exercises: Types of methodological approaches in scientific research	1 1
Week 12	Lecture: Research sample, definition of sample type and size, ethical considerations Exercises: Methods of determining the research sample	1 1
Week 13	Lecture: Data analysis and interpretation of the obtained results Exercises: Methods of data analysis	1 1
Week 14	Lecture: Presentation of the research report Exercises: Methods of presentation of research reports	1 1
Week 15	Lecture: Scientific work and production. Exercises: Analysis of research reports	1 1

SECOND YEAR OF STUDY

Code:SFSOM2031E	**COURSE TITLE: HUMAN PHYSIOLOGY I**		
Level: undergraduate	**Year: II**	**Semester: III**	**ECTS :7**
Course status: obligatory		**Total classes: 90, weekly (4+2)** - Lectures 60 hours (4 hours per week) - Exercises 30 hours (2 hours per week)	
Teaching staff	**Teachers and assistants named/entitled for teaching/research area /subject**		
Entry requirements:	**general requirements for entry in second year of study**		
Course objectives	Getting knowledge and skills in the field of: a) general physiology, b) nerve and muscle physiology, c) physiology of the blood, d) immunology, d) physiology of the cardiovascular system, e) physiology of respiration and f) physiology of the alimentary tract.		
Lectures/ Exercises	**Lectures 60 hours (4 hours per week)** -Objectives, tasks and content of Human Physiology. Fundamentals of the functional organization of the human body. Compartments and characteristics of body fluids. Homeostatic mechanisms. -Functional structure of biological membranes, ion channels. Types and characteristics of transport through the cell membrane. -Basics of physiological structure and function of excitable tissues, neuron. Excitations. Diffusion and equilibrium potential. - Resting membrane potential, action potential. - Nerve physiology. - Neuromuscular transmission. - Muscle physiology. The types of muscles and their physiological characteristics (skeletal, cardiac, smooth). - Basic mechanisms of muscle contraction and contraction of the whole muscle. - Tonus. Muscular contraction energy. Mechanism of contractions and stimulation of smooth muscle. - Physiological characteristics and action potential of the cardiac muscle. Functional organization of the cardiovascular system. - Automatism and regulation of cardiac function. - Bioelectric activity of the heart. - Heart cycle. Role of the heart valves, heart sounds.		

	- General overview of circulation (relationship between pressure, flow and resistance). Physiological characteristics of blood vessels, function of arteries and veins. Pulse. Pulse pressure. - Microcirculation and lymphatic system. - Tissue control and humoral regulation of local blood flow. - Nervous regulation of circulation. - Mean arterial blood pressure. Nervous (acute) control of mean arterial blood pressure. - Mean arterial blood pressure control (mid-term and long-term mechanisms) - Cardiac output and venous return and their regulation. - Muscle blood flow. Coronary circulation. -Composition and physiological roles of blood. - Erythrocytes. Hemoglobin. - Blood groups. Platelets. Hemostasis and blood clotting. - Leukocytes and defense of the organism from infection. Physiological basics of immunity. - Functional organization of the respiratory tract. Composition of atmospheric and alveolar air. The role of respiratory roads, dead space. - Pulmonary ventilation. - Respiratory membrane, exchange of gases through the membrane. Pulmonary circulation. V/Q. - Transport of Oxygen and Carbon Dioxide in Blood and Tissue Fluids. - Regulation of respiration. Role of lungs in regulation of acid-base balance. - Functional organization of the gastrointestinal system. - Propulsion and Mixing of Food in the Alimentary Tract. - Ingestion of food. Physiology of chewing (mastication) and swallowing (deglutition). - Motoric functions of the stomach, movements of small and large intestine. Defecation. - Secretion in digestive system. Principles and regulation of secretion of digestive juices. Saliva-composition, organic and organic ingredients and their physiological roles, mechanism of secretion, nerve and humoral control of secretion. Innervation and characteristics of the circulation of the salivary glands. - Gastric secretion. - Pancreatic secretion. - Secretion of bile by the liver. - Physiology of the liver. - Secretion of the small intestine. - Secretion of the large intestine. - Digestion and absorption of food (proteins, carbohydrates and lipids). - Regulation of food intake. - Thermoregulation. **Exercises (2 hours per week)** - Cell membrane. Transport through the cell membrane. Types and characteristics of ion channels and their control. - Resting membrane potential. Registration of action potentials. Transfer of impulses from the nerve to the muscle. - Simple muscle contraction. Summarized muscle contractions. Relationship between muscle length and tension (CD simulation A.D.A.M.). Frank-Starling law. Muscle tone (CD presentation, A.D.A.M.) - Functional organization of the cardiovascular system (CD simulation A.D.A.M.). Physiological characteristics of heart muscle (CD simulation A.D.A.M.). Action potential of heart muscle (CD simulation A.D.A.M.). - Registration and analysis of ECG - Auscultation of heart sounds. Pulse testing. FCG - Measurement of arterial blood pressure. - Blood sampling procedures - Obtaining plasma and serum from blood. - Hemostasis. Determination of bleeding time. Determination of time of coagulation.

<table>
<tr><td></td><td>- Counting of RBC. Determination of hemoglobin. Hematological indices.
- Determination of blood groups. Determination of the Rh-factor.
- Sedimentation of RBC.
- Counting of WBC. Differential blood count.
- Mechanics of breathing (computer simulation A.D.A.M.).
- Static spirometry (pulmonary volumes and capacities). Spirogram analysis.
- Energy and intensity of metabolism.
- Assessment of unstimulated and stimulated saliva flow.</td></tr>
<tr><td>Learning outcomes</td><td>Student who fulfills all requirements and passes exam, he will have very good knowledge of physiological mechanisms in the field of: a) general physiology, b) nerve and muscle physiology, c) physiology of the blood, d) immunology, d) physiology of the cardiovascular system, e) physiology of respiration and f) physiology of the alimentary tract. , needed for doctor of dental medicine.
Student will be, also, able to do all tests to assess functions of organs mentioned above.</td></tr>
<tr><td>Learning methods</td><td>Lectures: (oral/online presentation)
Exercises: laboratory exercises</td></tr>
<tr><td>Methods of student knowledge assessment</td><td>
<table>
<tr><td>Colloquia (Exercises)</td><td>ECTS points</td></tr>
<tr><td>Colloquium I (physiology of the blood)</td><td>20 (minimum 11 points to pass)</td></tr>
<tr><td>Colloquium II (Physiology of the cardiovascular system and physiology of respiration)</td><td>20 (minimum 11 points to pass)</td></tr>
<tr><td>Partial exam I (General physiology, muscle physiology, physiology of the blood and immunology, physiology of respiration, physiology of the cardiovascular system and physiology of the gastrointestinal tract)</td><td>60 (minimum 33 points to pass)</td></tr>
</table>
On final exam, student will be evaluated only for colloquium or partial exam which he did not pass over teaching process.

According to accumulated ECTS points student gets a grade listed in the table:
<table>
<tr><td>0-53</td><td>five (5) F</td></tr>
<tr><td>54-63</td><td>six (6) E</td></tr>
<tr><td>64-73</td><td>seven (7) D</td></tr>
<tr><td>74-83</td><td>eight (8) C</td></tr>
<tr><td>84-93</td><td>nine (9) B</td></tr>
<tr><td>94-100</td><td>ten (10) A</td></tr>
</table>
</td></tr>
<tr><td>Literature[27]:</td><td>Obligatory:
1. Arthur C. Guyton, John E. Hall: Medical physiology, 14th edition. Medicinska naklada, Zagreb 2021
2. Babić N, Huskić J, Avdagić N, Začiragić A, Valjevac A, Lepara O, Dervišević A, Spahić S. PRAKTIKUM ZA FIZIOLOGIJU ČOVJEKA I DIO, Sarajevo, 2020.
3. Avdagić N, Huskić J, Babić N, Začiragić A, Valjevac A, Lepara O, Dervišević A, Spahić S. PRAKTIKUM ZA FIZIOLOGIJU ČOVJEKA II DIO, Sarajevo, 2022.
Additional:
4. Ganong WF.Review of Medical Physiology. Lange Medical Publications, Los Altos 2003.
5. Boron WF.: Boulpaep E.L. Medical physiology, Elsevier Saunders 2005.</td></tr>
</table>

Code: SFSOM0303E	**COURSE TITLE: MICROBIOLOGY AND IMMUNOLOGY**		
Level: : integrated	**Year: II**	**Semester: III**	**ECTS credits:** 6
Course status: obligatory		**Total classes: 90** Lecture - 60 Laboratory practice-30	
Teaching participants	**Teachers and associates selected in the field to which the subject belongs / subject** [do not enter names in this section. Leave the wording as indicated in this section		
Prerequisite for enrollment:	According to the Study Regulations		
Objective (s) of the course:	Introduce students to the etiological causes of various infectious diseases, with special emphasis on the identification of the most common pathogens of the oral cavity, their transmission, pathogenesis of the disease and molecular biological aspects of their detection and characterization. They will also get acquainted with the molecular basis of the functioning of the human immune system and its reactions to the presence of pathogens such as viruses, bacteria, fungi, parasites.		
Thematic units: (If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)	1. Introduction to microbiology. Structure, morphology of bacteria. 2. Gram positive and Gram negative bacteria. Aerobic and anaerobic bacteria. Sporogenic and asporogenic bacteria. 3. Genetics of bacteria and bacterial plasmids. Molecular basis of bacterial resistance to antibiotics. 4. Bacterial flora of the oral cavity. Clinically significant bacteria (Haemophilus influenzae, Neisseria gonoreae, Chlamydia trachomatis, Helicobacter pylori) 5. Introduction to immunology and hematopoiesis of cells of the immune system. Organs and tissues of the immune system. Immune system cells (B lymphocytes, T lymphocytes, macrophages, dendritic cells, NK and NKT cells) Immune system recognition molecules. 6. Innate and acquired immunity. Humoral and cellular immunity. Circulating and fixed IgG molecules. IgG classes and subclasses and IgG subclass immunodeficiencies. 7. BCR and TCR receptor extensions. MHC class I and II molecules. 8. Antigen presenting cells. Exogenous and endogenous pathways of antigen presentation by MHC molecules. Complement system and complement immunodeficiency. 9. Antibodies and autoantibodies. Autoimmunity and autoimmune diseases and the molecular basis of their induction. Genetic basis of autotolerance. 10. DMARDs and Biological Drugs in the Treatment of Autoimmune Diseases. Personalized molecular immunology and rheumatology. 11. Clinically significant parasites. Basics of medical mycology and fungal diseases of the oral cavity (Candida, Cryptococcus, Aspergillus, Penicillium) 12. Introduction to virology. DNA and RNA viruses and their infectious cycle.		

<table>
<tr><td></td><td>13. General virology. Clinically significant DNA and RNA viruses. Emergent and reemergent viruses (COVID 19 virus, Influenza virus). Oncogenic viruses. Retroviruses and Pararetroviruses.
14. Molecular genetics of clinically significant viruses. Viral infections of the oral cavity. HSV-1, HSV-2, CMV, EBV, HBV, HCV, HIV, HPV.
15. Hypervariance of RNA virus and difficulties in designing appropriate vaccines. Ribozymes. Prions and prion diseases.</td></tr>
<tr><td>Learning outcomes:</td><td>Knowledge: Through the realization of the set goals and tasks within the subject Microbiology and Immunology, the student will gain relevant knowledge about clinically important infectious agents (viruses, bacteria, fungi, parasites), molecular basis of human immune system and current microbiological and immunological diagnostic methods.
Skills: Through practical work in the laboratory, the student will master the methods of sampling, processing and detection and characterization of some viruses that require molecular typing. They will also get acquainted with the possibilities of molecular biological methods (PCR, Western blot) and flow cytometry for the purpose of diagnosis and monitoring the effectiveness of therapy.
Competences: By successfully completing this course (practical and theoretical part) the student will acquire an appropriate level of competence and active knowledge in bacteriology, parasitology, mycology, virology and immunology. This will help them to do their job professionally, and they will be able to achieve interdisciplinary cooperation with microbiologists and immunologists in terms of their future, permanent, professional and scientific upgrades.</td></tr>
<tr><td>Teaching methods:</td><td>Lectures, Interactive type of teaching, student engagement through given activities or tasks.</td></tr>
<tr><td>Assessment methods with assessment structure:</td><td>The first partial written exam
Second partial written exam
Integral exam
Corrective exam period
Seminar paper-presentation
Exercises-Colloquium I, II and III

<table>
<tr><td>PARAMETERS</td><td>Points</td></tr>
<tr><td>TEACHING ATTENDANCE AND ACTIVITY</td><td>5</td></tr>
<tr><td>SEMINAR WORK</td><td>14</td></tr>
<tr><td>FIRST PARTIAL WRITTEN EXAM</td><td>36</td></tr>
<tr><td>SECOND PARTIAL WRITTEN EXAM</td><td>45</td></tr>
<tr><td>TOTAL POINTS</td><td>100</td></tr>
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<tr><td>Points number</td><td>Grade</td></tr>
<tr><td>< 55</td><td>5 (F)</td></tr>
<tr><td>55 - 64,99</td><td>6 (E)</td></tr>
<tr><td>65 – 74,99</td><td>7 (D)</td></tr>
<tr><td>75 – 84,99</td><td>8 (C)</td></tr>
<tr><td>85 – 94,99</td><td>9 (B)</td></tr>
<tr><td>95 - 100</td><td>10 (A)</td></tr>
</table>
</td></tr>
<tr><td>Literature:</td><td>Mandatory literature

Bešlagić E et al (2010): Medical microbiology. Faculty of Medicine Sarajevo.</td></tr>
</table>

	Zvizdić Š (2009): Virology. Faculty of Medicine Sarajevo. Karamehić, J and Dizdarević Z.(2007). Clinical immunology. Svjetlost Sarajevo. Mekić M and Subašić Đ (2015): Clinical rheumathology –gene aspects. NIR KCU Sarajevo. Zvizdić Š and Hamzić S (2014): Microbiology and Immunology. A book with a practicum for students of the Faculty of Dentistry. Additional literature Kozarić A, Kozarić M, Subašić Đ. (2020). Laboratory protocols in cytogenetics. Corons d.o.o. Sarajevo Andreis I (2004): Immunology. Sixth edition. Medical edition. Zagreb. Arifhodžić F., Hamzić S. (2011): Infections of the oral mucosa. University textbook. Faculty of Dentistry, University of Sarajevo. Arifhodžić F. et al. (2014): Specifics of infection control in dentistry. TKD Sahinpasic, Sarajevo.

Implementation plan: Course - Microbiology and immunology

Weeks	Forms of teaching and practical education	No. hours
Week 1.	The lecture: Introduction to microbiology. Structure, morphology and genetics of bacteria. The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 2.	The lecture: Gram positive and Gram negative bacteria. Aerobic and anaerobic bacteria. Sporogenic and asporogenic bacteria. The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 3.	The lecture: Genetics of bacteria and bacterial plasmids. Molecular basis of bacterial resistance to antibiotics. The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 4.	The lecture: Bacterial flora of the oral cavity. Clinically significant bacteria (Haemophilus influenzae, Neisseria gonoreae, Chlamydia trachomatis, Helicobacter pylori). The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 5.	The lecture: Introduction to immunology and hematopoiesis of the immune system cells. Organs and tissues of the immune system. Immune system cells (B lymphocytes, T lymphocytes, macrophages, dendritic cells, NK and NKT cells) Immune system recognition molecules. The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 6.	The lecture: Innate and acquired immunity. Humoral and cellular immunity. Circulating and fixed IgG molecules. IgG classes and subclasses and IgG subclass immunodeficiencies. The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 7.	The lecture: BCR and TCR receptor extensions. MHC class I and II molecules The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 8.	The lecture: Antigen presenting cells. Exogenous and endogenous pathways of antigen presentation by MHC molecules. Complement system and complement immunodeficiency. The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 9.	The lecture: Antibodies and autoantibodies. Autoimmunity and autoimmune diseases and the molecular basis of their induction. Genetic basis of autotolerance. The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 10.	The lecture: DMARDs and Biological Drugs in the Treatment of Autoimmune Diseases. Personalized molecular immunology and rheumatology. The exercises: Laboratory exercises in accordance with theoretical classes.	4 2

Week 11.	The lecture: Clinically significant parasites. Basics of medical mycology and fungal diseases of the oral cavity (Candida, Cryptococcus, Aspergillus, Penicillium). The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 12.	The lecture: Introduction to virology. DNA and RNA viruses and their infectious cycle. The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 13.	The lecture: General virology. Clinically significant DNA and RNA viruses. Emergent and reemergent viruses (COVID 19 virus, Influenza virus). Oncogenic viruses. Retroviruses and Pararetroviruses. The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 14.	The lecture: Molecular genetics of clinically significant viruses. Viral infections of the oral cavity. HSV-1, HSV-2, CMV, EBV, HBV, HCV, HIV, HPV. The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 15.	The lecture: Hypervarability of RNA viruses and difficulties in designing of appropriate vaccines. Ribozymes. Prions and prion diseases (spongioform encephalopathies). The exercises: Laboratory exercises in accordance with theoretical classes.	4 2
Week 17.	Final exam. Corrective exam period.	
Week 19.	Corrective exam date.	

Item code: SFSOS0302E	**Course Title: Public oral health**		
Cycle: integrated	**Year: II**	**Semester: III**	**Number of ECTS credits:** 7
Status: obligatory		**Total number of hours: 60** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises 2**(30)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the second year of study		
Aim (objectives) of the course:	To improve knowledge about principles of dental public health; the major health problems of a community (and their determinants); the organisation and delivery of oral health services; research methods, epidemiology and statistics; methods of control and prevention of oral and dental diseases; planning and evaluation for oral health; and social and behavioural sciences as applied to dentistry. To gain the knowledge and to understand the principles of organization, functioning, and financing of the health system and health care.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	WHO Oral health surveys: basic methods; Assessment indices used in oral health needs assessment and interpretation of oral health survey data. Epidemiological indicators of oral health in the world and B&H; Public oral health programs (planning, funding, program evaluation, participants); Organization of oral health care system in B&H and the world. Models of organizing oral health care worldwide; Quality control and improvement in oral health care; The principles of evidence-based dentistry;		

	Oral health promotion and health education; The concept of oral health, disease and quality of life; Financing of oral health. Economic aspect of health and illness; Institutions, health services, professional associations and their role in public oral health; Interprofessional collaborative care. Impact of social media on dental practice promotion and professionalism among dental practitioners. Legislative in health care and dental care.
Learning outcomes:	Knowledge: Upon completion of this course, students will: -Be familiar with the organization of dental health-care and health teams involved in the development of oral health care strategies; -Know the concepts of financing and health insurance in Bosnia and Herzegovina; -Know the legislation, standards and normatives in the process of organization of dental health care. Skills: Upon completion of this course, students will be able to: -Name and identify various components and risks that could affect the oral health on a local and national level; -Adopt a system for improving the quality and effectiveness of the oral health care system; - Apply acquired knowledge in the process of developing a patient-oriented health care system with adopted high ethical principles. Competences: Upon completion of this course, students will know how to: -Identify and planned the models for the public oral health surveys that are essential in population-based health studies on local and national level. -Know and understand the strategies for the planning of preventive programs for oral health protection and to assess the advantages and disadvantages of different programs.
Teaching methods:	The course is performed in the form of: • Lectures • Practice exercises- groups according to standard Interactive learning for all students (during the lectures and practice exercises)
Assessment methods with assessment structure:	Grades are assigned based on the following criteria: Mandatory attendance and activities during the course makes up to 20% of the grade (it will be considered that the student has met this criterion if he/she was justifiably absent with a maximum of 20% of classes). Midterm Exam carries a maximum of 30% of the grade Midterm Exam is not a prerequisite for the final exam. If the student has failed the midterm exam, he/she is obliged to pass integral course material in the final exam. The Final examination for the students who didn't meet the requirements on the Midterm Exam is scored to a maximum of 80%. A test is considered to be passed successfully if it has at least 55% of correctly answered questions. The Final examination for the students who successfully finished Midterm Exam carries a maximum of 50 % A total score for all course components100 points is possible as The grading scale for this course consists of the standard scale below: A (10) = 95- 100 points B (9) = 85- 94 points C (8) = 75- 84 points D (7) = 65- 74 points

	E (6) = 55-64 points F below 55 points, minimum requirements have not been achieved.
Literature:	Required: 1.Pine C., Harris R.: „COMMUNITY ORAL HEALTH“, Quintessence Publishing, UK Catalogue, 2007

Teaching plan Public oral health

Week	Course form and content	Number of hours
Week 1.	Lectures: Introduction to preventive dentistry and public oral health (history, development, relevance) Practice: Course description, an introduction to the syllabus and the methodology of conducting classes and exams.	2 2
Week 2.	Lectures: Oral epidemiology - Epidemiological indicators of oral health in the world and B&H Practice: Design of oral health survey for the specific region in Bosnia and Herzegovina using available data.	2 2
Week 3.	Lectures: Oral epidemiology - WHO Oral health surveys: basic methods Practice: Analyze of data of oral epidemiology collected in simulated oral health survey and evaluation of oral health of different population groups using oral health indices	2 2
Week 4.	Lectures: Organization of oral health care system in Bosnia and Herzegovina and the world. Models of organizing oral health care worldwide. Practice: Analyze of data of oral epidemiology collected in simulated oral health survey and evaluation of oral health of different population groups using oral health indices.	2 2
Week 5.	Lectures: Planning and monitoring of dental health care. Strategies for the improvement of oral health. Practice: Analyze of data of oral epidemiology collected in simulated oral health survey and evaluation of oral health of different population groups using oral health indices.	2 2
Week 6.	Lectures: Public health programs Practice: The development of public oral health programs for the region, based on the data obtained from simulated epidemiological studies	2 2
Week 7.	Lectures: Oral health promotion and health education. History of health education. Models and methodology. Practice: Preparation of oral health educational material according to the age of the group for which they are intended and their presentation to the class. Preparation of promotive material for the protection and improvement of oral health according to the age of the group for which they are intended	2 2
Week 8.	Lectures: The International Classification of Diseases, Injuries, and Causes of Death, application to dentistry and stomatology. Evidence in dentistry. Practice: Evidence in dentistry and data reporting templates, clinical documentation of dental care/dental records, ICD-11	2 2
Week 9.	Lectures: The principles of evidence-based dentistry Practice: Evidence in dentistry and data reporting templates, clinical documentation of dental care/dental records, ICD-11	2 2
Week 10.	Lectures: Financing of oral health. Economic aspect of health and illness. Health financing models. Practice: Practical evaluation of methods of financing dental health care based on epidemiological parameters obtained from simulated epidemiological studies	2 2
Week 11.	Lectures: The concept of oral health, disease and quality of life. Practice: Survey as a research instrument in dentistry. Types of surveys.	2 2
Week 12.	Lectures: Quality control and improvement in oral health. Practice: Introduction to the types of scientific literature in the field of oral health. Searching the literature and different databases.	2 2

Week 13	Lectures: Impact of social media on dental practice promotion and professionalism among dental practitioners. Practice: Searching the literature and different databases. Evaluation of the role of social media in promoting oral health and the role of doctors of dental medicine in protecting the health of the population.	2 2
Week 14.	Lectures: Legislative in health care and dental care Practice: Analyze and evaluation of scholarly publications.	2 2
Week 15.	Lectures: Institutions, health services, professional associations and their role in public oral health. Interprofessional collaborative care. Practice: Legislative analyze related to health care	2 2
Week 17.-20.	Final exam/retake	

Item code: SFSOS0304	**Course Title: DENTAL MATERIALS AND EQUIPMENT**		
Cycle: Integrated study	**Year: II**	**Semester: III**	**Number of ECTS Credits: 5**
Status: Obligatory		**Total number of hours: 45 (45+0)** Lectures 45 Seminar	
Teaching participants	**Teachers and associates selected in the field to which the subject belongs / subject** **Department of Prosthodontics with Dental Implantology**		
Prerequisite for enrollment:	The requirements are regulated by the Study Rules for the Integrated study program of the first and second cycles at the Higher Education Institutions of the University of Sarajevo.		
Aim (objectives) of the course:	- Acquring basic knowledge of dental materials in terms of physical, mechanical, chemical and biological properties - Acquring basic knowledge for the correct and purposeful use of dental materials and technologies in clinical work - Providing basic knowledge for critical evaluation and comparison of commercially available dental materials and making decisions on how to use them properly - Teaching students how to inform patients about the characteristics of the materials for the purpose of enabling them to make a proper choice		
Thematic units: *(If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)*	1. Introduction to the necessity of studying dental materials. Historical review of dental materials. Workplace, equipment and Instruments. 2. Physical properties of dental materials. 3. Standards for dental materials. Biocompatibility of dental materials. Additional equipment for specialist interventions, equipment for diagnostic procedures. 4. Impression materials. Intraoral and extraoral scanners. 5. Materials and methods for making of working cast. Materials for making restoration models - dental waxes. Design software.		

	6. Dental investment materials. 7. Metallic materials. 8. Dental ceramics. Sintering of ceramic materials. Milling machines and 3D printers. 9. Polymers in Dentistry. PMMA materials and milling equipment. 10. Restorative materials - dental amalgams. 11. Contemporary aesthetic restorative materials. Dentin adhesives. 12. Basic principles of adhesive dentistry. 13. Dental Cements. 14. Materials in preventive dentistry with special reference to fluoride. 15. Abrasive materials, laboratory work. Processing and polishing Equipment.disinfection and sterilization in dental medicine.
Learning outcomes:	Knowledge: - The student will fully master the knowledge of physical, chemical and biological properties of dental materials - The student will acquire knowledge about all groups of dental materials, their composition, structure and application of materials - The student will acquire knowledge about biocompatibility of dental materials and standards of dental materials - The student will acquire basic knowledge about dental equipment, instrumentation, disinfection and sterilization in dental medicine. Skills: - Proper selection and purposeful use of specific dental materials, equipment and instruments - Assessment of quality and safety of dental materials - The student can critically evaluate and compare commercially offered dental materials
Teaching methods:	Interactive lectures Seminars in the form of interactive learning
Assessment methods with assessment structure:	The acquired knowledge and skills are tested continually during the semester. In the structure of the total number of points, the student can achieve for activities and knowledge tests: - activity in lectures - maximum 10 points, minimum 6 points - partial exam (in the form of a test from 8-10 weeks of the semester) - maximum 40 points,minimum 22 points - final exam - maximum 50 points, minimum 27, 5 points The partial and final exam is taken in the form of a test that is compiled for each exam period, divided into groups A, B (if necessary, C, D). The partial and final exam can only be scored if each test has at least 55% correct answers. All questions in the test do not have to be evaluated with the same number of points. The decision on the method of scoring questions from the test is made by subject teachers before the test is administered. A student who did not pass the partial knowledge test takes the entire material - integrally on the final exam. The passing score level on the exam is 55%. In accordance with the above the grade scale is as follows: a) 10(A) - exceptional success, without mistakes or with minor mistakes, carries - 95-100 points b) 9(B) - above average with few errors, carries - 85-94 points; c) 8 (C) - average with noticeable errors, carries - 75-84 points; d) 7(D) - generally good but with significant errors, carries- 65-74

	points; e) 6(E) - satisfies the minimum criteria, carries - 55-64 points; 5(F, FX) - does not meet the minimum criteria, less than 55 points
Literature:	**Obligatory:** 1. Craig RG, Powers JM. Restorative dental materials. 11 th ed. St Luis: Mosby; 2002. 2. McCabe JF, Walls AWG. Applied Dental Materials. 9 th ed. Blackwell Publishing. Oxford, UK, 2008. 3. Anusavice KJ. Phillips Science of Dental Materials. Eleventh edition. Philadelphia: Saunders; 2003.

COURSE SYLLABUS: DENTAL MATERIALS AND EQUIPMENT

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lectures)
Week 1.	Lecture: Introduction to the necessity of studying dental materials. Historical review of dental materials. Workplace, equipment and Instruments: dental unit, hand instruments, and rotary instruments. Safe and proper use of equipment and instruments in dentistry.	3
Week 2.	Lecture: Physical properties of dental materials. Mechanical properties: density, strength, hardness, elasticity, resilience, brittleness, toughness, viscosity. Thermal properties: melting point, boiling point, thermal expansion, thermal conductivity, heat capacity. Optical properties: color, gloss, light transmission. Chemical and biological properties of dental materials. Corrosion resistance.	3
Week 3.	Lecture: Standards for dental materials (ADA, ISO, GCP standard-Good Clinical Practice, GMP standard-Good Manufacturing Practice). Biocompatibility of dental materials and material's biocompatibility tests Additional equipment for specialist interventions, equipment for diagnostic procedures.	3
Week 4.	Lecture: Impression materials (impression materials). History of impression materials. Classification of dental impression materials. Chemistry, composition and physical properties of elastic and inelastic impression materials. Clinical aspects of manipulation of elastic and inelastic impression materials. Intraoral and extraoral scanners	3
Week 5.	Lecture: Materials and methods for making of working cast. Chemical reactions of formation and binding of dental gypsum, basic principles of application and technical significance. Methods of making virtual models. Materials for making restoration models - dental waxes - types and purpose. Design software	3
Week 6.	Lecture: Dental investment materials. - division and chemical composition. Physical mechanical properties and purpose of dental investment materials	3
Week 7.	Lecture: Metallic materials - structure and properties. Dental alloys – origin and properties. Classification of dental alloys. Clinical aspects of application of precious (alloys of gold, silver-palladium, palladium-silver) and non-precious (Cr-Co-Mo, Ti, steels) alloys in dentistry palladium silver) and non-noble (Cr-Co-Mo, Ti, steel) alloys in dentistry	3

Week 8.	Lecture: Dental ceramics. Composition and microstructure of dental ceramics. Physical and chemical properties of dental ceramics. Types and classifications of dental ceramics. Ceramic systems. Types of connection of dental ceramics with substructures. Sintering of ceramic materials. Milling machines and 3D printers.	3
Week 9.	Lecture: Polymers in Dentistry - polymers for denture base. Chemical characteristics of polymethylmethacrylate. Polymer separation (heat-curing, chemical-curing, light-curing, microwave curing). Polymerization regimes of heat-curing acrylates. PMMA materials and milling equipment.	3
Week 10.	Lecture: Restorative materials - dental amalgams. History of dental amalgams. Composition and function of certain metals in the composition of dental amalgam. Mechanical properties and dimensional stability of dental amalgams. Clinical manipulation. Biocompatibility of dental amalgams, contemporary dilemma.	3
Week 11.	Lecture: Contemporary aesthetic restorative materials - historical development of composite materials. Chemical composition of basic components of composite materials. One-component and two-component systems of composite restorative materials; Dentin adhesives.	3
Week 12.	Lecture: Basic principles of adhesive dentistry. Biological basis of the connection between hard tooth tissue and restorative material - a hybrid layer.	3
Week 13.	Lecture: Dental Cements - properties and classification. Cements as dentin wound protection materials. Cements for temporary restorations.	3
Week 14.	Lecture: Materials in preventive dentistry with special reference to fluoride. Physicochemical properties, metabolism of fluorine ions from fluoride. The role and mechanism of action of fluoride in caries prevention. Methods of applications fluoride in dentistry.	3
Week 15.	Lecture: Abrasive materials, laboratory work. Types of abrasives. Cleaning materials, polishing pastes. The importance of polishing dental restorations. Processing and polishing equipment Disinfection and sterilization in dental medicine	3

Item code: SFSOS2032E	**Course Title: CARIESOLOGY**		
Cycle: integrated	**Year: II**	**Semestar: III**	**Number of ECTS credits:** 2
Status: obligatory		**Total number of hours: 15** **Lectures** 15 **Exercises** 0	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [d**o not enter names in this section. Leave the wording as indicated in this sectio**n]		
Prerequisite for enrollment:	All students enrolled in the 2nd year of study		
Aim (objectives) of the course:	The aim of the course is to provide the student with a theoretical basis on the etiology, biology, pathogenesis, clinical and pathohistological picture of caries and caries control.		

Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Biological basis of caries 2. Clinical and pathohistological appearance of carious lesion 3. Caries control
Learning outcomes:	After the end of the third semester of the course Cariesology, the student will be able to: - describe the etiology and classification of caries, - explain the formation of plaque and its role in the development of caries and describe the processes of demineralization and remineralization, - explain the clinical and pathohistological picture of caries of enamel, dentin and cement, - explain caries control methods.
Teaching methods:	- interactive lectures, - consultations.
Assessment methods with assessment structure:	The exam consists of a partial exam during the semester and a final exam, which are taken in writing. Each exam carries 50 points. A partial exam is considered passed if the student has achieved a minimum of 28 points. At the final exam, the student must achieve a minimum of 55% correct answers. The final grade is formed by adding up the points achieved through the partial and final exam, as follows: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Fejerskov O, Kidd E. Zubni karijes: Bolest i klinički postupci. Naklada Slap, 2011. 2. Kidd E. Osnovi zubnog karijesa: bolest i tretiranje. Data Status, Beograd, 2010. Additional: 3. Šutalo i saradnici. Patologija i terapija tvrdih zubnih tkiva. Naklada Zadro, Zagreb, 1994. 4. Kobašlija i sar. Karijes zuba- primarna prevencija i kontrola., Stomatološki fakultet, Sarajevo 2010. 5. Kobašlija S. i sar. Minimalna invazivna terapija. Dobra knjiga, Sarajevo, 2012.

Plan of the course Cariesology

Week	Teaching and learning methods	Number of hours
Week 1.	1. Lecture: Introductory class (introduction to the course, the way of teaching, exams and literature)	1 0

Week 2.	2. Lecture: Etiology, epidemiology, caries classification and caries hypotheses	10
Week 3.	3. Lecture: The role of microorganisms in the development of carious lesions	10
Week 4.	4. Lecture: Demineralization and remineralization of teeth	10
Week 5.	5. Lecture: The role of saliva in the development of caries	10
Week 6.	6. Lecture: Clinical and pathohistological picture of enamel caries; white spot	10
Week 7.	7. Partial exam	
Week 8.	8. Lecture: Clinical and pathohistological picture of dentin and cementum caries	10
Week 9.	9. Lecture: Assessment of individual caries risk	10
Week 10.	10. Lecture: The role of oral hygiene in caries control	10
Week 11.	11. Lecture: The role of fluoride in caries control	10
Week 12.	12. Lecture: The role of nutrition in caries control	10
Week 13.	13. Lecture: The role of antimicrobial agents in caries control	10
Week 14.	14. Lecture: Interactive recapitulation of materials	10
Week 15.	15. Lecture: Interactive recapitulation of materials	10
Week 16.	Final exam, Remedial exam	
Week 17.	Remedial exam	

Code: SFSOM2041E	**COURSE TITLE: HUMAN PHYSIOLOGY II**		
Level: undergraduate	**Year: II**	**Semester: IV**	**ECTS:3**
Course status: obligatory		**Total classes: 60 hours, weekly (2+2)** - Lectures 30 hours (2 hours per week) - Exercises 30 hours (2 hours per week)	
Teaching staff	**Teachers and assistants named/entitled for teaching/research area /subject**		
Entry requirements:	**general requirements for entry in second year of study**		
Course objectives	Getting knowledge and skills in the field of: a) physiology of the kidney and body fluids, b) physiology of endocrine glands, c) neurophysiology and f) physiology of special senses.		

Lectures/ Exercises	**Lectures 30 hours (2 hours per week)** - Functional organization of the urinary system. Nephron, renal blood flow. Blood flow through the kidney and processes of urine production (glomerular filtration). Mechanisms of their regulation. - Tubular reabsorption and tubular secretion and their regulation. Reflex of micturition. -Control of osmolality and concentration of sodium ions in ECF. Thirst. Isotonia. Isoionia. Isovolemia. Control of potassium concentration in ECF. Regulation of acid-base status. - General organization of the nervous system, sensory and motor axis of the nervous system. Synapses, neurotransmitters and modulators. Sensitive receptors. Receptor potential. Somatic sensations. - Pain physiology (oral cavity receptors - pressure, pain, temperature; sensitive transmission through the dental tissues; pain caused by dental factors, vascular pain, muscular pain, salivary glands and pain, pain theories) - Thermal sensations - Sense of smell and taste. Sense of hearing and balance. - Sense of vision. Optics of vision. Neurophysiology of vision. - Motor functions of spinal cord. - Cortical and brainstem control of motor functions. - Motor functions of cerebellum and basal ganglia. - The roles of the nervous system in intellectual functions, limbic system. - Vegetative nervous system, functional organization: sympathicus and parasympathicus. - Functional organization of the endocrine system, hormones, control and regulation of secretion. - Neuroendocrine connection: hypothalamus and pituitary gland. -Thyroid gland. Endocrine pancreas. Isoglycemia. - Parathyroid glands. Adrenal glands. - Male and female sex hormones. **Exercises (2 hours per week)** - Analysis of renal function in a simulated model. Glomerular filtration (CD presentation, A.D.A.M.) - Calculation of net filtration and net reabsorption pressure. - Clearance - Acid-base equilibrium-assessment of efficiency of physiological mechanisms in the compensation of acidosis disorders. - Examination of tactile sensitivity to the skin. Threshold for differentiation of two points in the sense of touch. Adaptation of temperature receptors. - Testing the sensation of taste. - Conducting sounds through the bone: Rinne and Weber test. Localization of the sound source. - Recognizing lenses. - Visus - Proving the existence of a blind spot (Marriott test). - Accommodation (Scheiner experiment). Determination of accommodation capacity and accommodation width. Direct pupillary reflex and consensual reaction to light. - Examination of reflexes - Electroencephalography - Determination of blood glucose concentration. Glucose tolerance test. - Pregnancy test - The influence of thyroid hormones on the intensity of basal metabolism.
Learning outcomes	Student who fulfills all requirements and passes exam, he will have very good knowledge of physiological mechanisms in the field of: a) physiology of the kidney and body fluids, b) physiology of endocrine glands, c) neurophysiology and f) physiology of special senses, needed for doctor of dental medicine. Student will also be able to do all tests to assess functions of organs mentioned above.
Learning methods	Lectures: (oral/online presentation) Exercises: laboratory exercises

<table>
<tr><td>Methods of student knowledge assessment</td><td>
<table>
<tr><td>Colloquia (Exercises)

Colloquium I (physiology of the kidney and body fluids, and physiology of special senses)

Colloquium II (Neurophysiology)</td><td>ECTS points

20 (minimum 11 points to pass)

20 (minimum 11 points to pass)</td></tr>
<tr><td>Partial exam I (physiology of the kidney and body fluids and physiology of endocrine glands, Neurophysiology and physiology of special senses)</td><td>60 (minimum 33 points to pass)</td></tr>
</table>

On final exam, student will be evaluated only for colloquium or partial exam which he did not pass over teaching process.

According to accumulated ECTS points student gets a grade listed in the table:
<table>
<tr><td>0-53</td><td>five (5) F</td></tr>
<tr><td>54-63</td><td>six (6) E</td></tr>
<tr><td>64-73</td><td>seven (7) D</td></tr>
<tr><td>74-83</td><td>eight (8) C</td></tr>
<tr><td>84-93</td><td>nine (9) B</td></tr>
<tr><td>94-100</td><td>ten (10) A</td></tr>
</table>
</td></tr>
<tr><td>Literature[36]:</td><td>Obligatory:
1. Arthur C. Guyton, John E. Hall: Medical physiology, 14th edition. Medicinska naklada, Zagreb 2021
2. Babić N, Huskić J, Avdagić N, Začiragić A, Valjevac A, Lepara O, Dervišević A, Spahić S. PRAKTIKUM ZA FIZIOLOGIJU ČOVJEKA I DIO, Sarajevo, 2020.
3. Avdagić N, Huskić J, Babić N, Začiragić A, Valjevac A, Lepara O, Dervišević A, Spahić S. PRAKTIKUM ZA FIZIOLOGIJU ČOVJEKA II DIO, Sarajevo, 2022.
Additional:
1. Ganong WF.Review of Medical Physiology. Lange Medical Publications, Los Altos 2003.
2. Boron WF.: Boulpaep E.L. Medical physiology, Elsevier Saunders 2005.</td></tr>
</table>

Course Code: SFSOM0401E	**Course Title: PATHOLOGY**		
Cycle: integrated	**Academic Year: II**	**Semester: IV**	**Number of ECTS credits: 8**
Status: obligatory		**Total number of hours: 90** **Lectures 60**	

	Exercises 30
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**
Prerequisite for enrollment:	All students enrolled in the 2nd year of study.
Course objective(s):	The aim of the course Pathology is to provide students with knowledge about the mechanisms of damage to cells, tissues and organs and introduce them to morphological changes that underlie diseases. lectures and gaining their own experiences in exercises with the help of a visual overview of morphological changes caused by the disease.
Thematic units: ***(If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)***	**P1 - CELL PATHOLOGY:** Causes of cell damage. Reversible cell damage. Excessive accumulation of metabolites and other substances. Cellular adaptations. Irreversible cell damage: Apoptosis. Necrosis. Calcification. Aging. (Chapter 1). **P2 - INFLAMMATION:** Types of inflammation. Classic signs of inflammation. Components of the inflammatory reaction. Cells in the inflammatory reaction. Chemical mediators of inflammation. Acute inflammation. Leukocyte function disorders. The outcome of acute inflammation. Wound healing. Chronic inflammation. Morphological forms of acute and chronic inflammation. Systemic signs of inflammation. (Chapter 2). **P3 - BODY FLUID DISORDERS AND HEMODYNAMICS:** Edema. Dehydration. Hyperemia. Congestion. Bleeding. Thrombosis. Embolism. Heart attack, Shock. (Chapter 4). **P4 - IMMUNE SYSTEM DISORDERS:** Hypersensitivity reactions. Transplant reaction. Autoimmune diseases. Immunodeficiency states. Amyloidosis. (Chapter 3). **P5 - NEOPLASIA:** Division of neoplasm's. Biology of tumor growth. Epidemiology. Carcinogenesis and carcinogens. Tumor immunity. Clinical features of neoplasms Laboratory diagnosis of neoplasms. (Chapter 5). **P6 - DEVELOPMENTAL AND GENETIC DISEASES:** Fundamentals of teratology. Morphogenesis errors. Chromosomal abnormalities. Genetic disorders. Disorders with multifactorial inheritance. Diseases of the newborn. Childbirth injuries, fetal erythroblastosis, sudden infant death syndrome, childhood diseases. (Chapter 6). **PATHOLOGY OF ORGANIC SYSTEMS** **P7 - BLOOD VESSEL DISEASES:** Arteriosclerosis. Aneurysms. Vein diseases, tumors of blood and lymph vessels. (Chapter 7, pp. 227-236; 245-253). **P8 - HEART DISEASES:** Heart failure, ischemic heart disease, hypertensive heart disease, pulmonary heart disease (Chapters 8, pp. 255-260, 266-277). Endocardial and valvular diseases, myocardial diseases, pericardial diseases. (Chapter 8, pp. 277-300). **P9 - DISEASES OF THE RESPIRATORY SYSTEM:** (Chapter of the head and neck) - Diseases of the nose and paranasal sinuses. Throat diseases. Laryngeal diseases. (Chapter 10, pp. 355- 364). (Chapter respiratory system) Pulmonary atelectasis, vascular and circulatory lung diseases, pneumonia (Chapter 11, pp. 382-398). Obstructive pulmonary disease, lung tumors. (Chapters 11, pp. 399-404; 410-415).

	P10 - DISEASES OF HEMATOPORIC ORGANS AND LYMPH NODES: Anemia. (Chapter 9, pp. 311-327). Bleeding diseases, White blood cell disorders, Malignant bone marrow diseases. (Chapter 9, pp. 327-340). Lymphadenitis, lymphadenopathy, non-Hodgkin's lymphoma, Hodgkin's disease (Chapter 9, pp. 340-351). **P11 - DISEASES OF THE ORAL CAVITY:** (Basic pathology, 9th Edition, Kumar, Cotran, Robbins) - the chapter will be available to all students in writing form. **P12 - GASTROINTESTINAL SYSTEM:** Esophageal varices, reflux esophagitis, Barrett's esophagus, esophageal tumors, gastritis, peptic ulcer, gastric cancer. (Chapters 12, pp. 423-428, 428-436). Malabsorption syndromes - celiac disease, Inflammatory bowel disease, Neoplasms. (Chapters 12, pp. 446-447, 448-460). **P13 - LIVER AND BILIARY SYSTEM DISEASES:** Clinical evaluation of liver and liver disease. Infectious inflammatory liver diseases. Chronic hepatitis. Alcoholic liver disease (Chapters 13, pp. 465-476, 477-487). Liver cirrhosis. Hepatocellular carcinoma, cholangiocarcinoma. (Chapter 13, pp. 492-497, 497-502). **P14 - Diabetes** (Chapter 14, pp. 516-522). Skin tumors (Chapter 20, pp. 718-728). **P15 - Osteomyelitis and bone tumors** (Chapter 21, pp. 734-735, 739-748). **Increased intracranial pressure, brain herniation, cerebrovascular disease, and CNS tumors (**Chapter 23, pp. 792-794, 804-814, 831-840).
Learning outcomes:	**Knowledge:** (MEMORY, UNDERSTANDING, APPLICATION, ANALYSIS AND SYNTHESIS) measurable outcomes: (1) explain the concepts of pathological-anatomical terminology, (2) describe the similarities and distinguish the peculiarities of the morphology of changes caused by disease, (3) apply basic knowledge of pathology to specific clinical situations, (4) to connect the knowledge of pathology and the principles of physical examination of patients. **Skills:** The acquired knowledge and skills should enable a better understanding of the causes and mechanisms of disease, and facilitate the overcoming of the functional consequences of morphological changes. **Competences:** General: - List and describe the basic theoretical changes caused by diseases of organs and organ systems. - Apply general pathological-anatomical principles and concepts on organs and organ systems. Specific: - Describe the importance of continuous renewal of knowledge of pathological anatomy for mastering teaching units in clinical and dental medicine (in the final years of study). - Recognize the importance of continuous renewal of knowledge of morphological changes of organs and organ systems in order to better protect, prevent and rehabilitate oral health during professional work. **Opinions:** (ACCEPTANCE, RESPONSE, ACQUISITION OF VALUES) measurable outcomes:

	(1) recognize and recognize the difference of pathological-anatomical changes (2) to accept the existence of pathological-anatomical anomalies and differences in relation to textbook descriptions of the so-called "Standardized morphological description", (3) to adapt to practical work for computer exercises of macroscopic and microscopic representations of diseases for the future of studies and professional careers.
Teaching methods:	Classes are held in the form of: - lectures (60 hours) for all students - exercises (30 hours) for all students Exercises-supervised learning on imaging pathological-anatomical preparations, with prior testing of student knowledge for certain macroscopic and microscopic changes.
Assessment methods with assessment structure:	Students are required to take part in all forms of evaluation during the semester. When evaluating, the following is taken into account: 1. CONTINUOUS KNOWLEDGE EVALUATION – 100 points: a. HISTOPATHOLOGY EXAMINATION 1 (Histopathology exercise 1-6) The evaluation scale has a maximum of 10 points. The student gets 3 microscopic slides. The minimal requirement for completing this part of the exam is recognition and correct description of 2 microscopic slides (minimum score of 6 points). Students need to recognize the lesion, write the correct diagnosis in Latin, and correctly describe the morphological changes. b. FIRST PARTIAL EXAM (basic pathology) (Module 1-5) Partial exam 1 is designed as an essay with 4 questions with a grading scale of 40 points maximum. To pass the exam, the student must meet the minimum criteria and score 22 points. Each question is worth 10 points. Since each question includes one module (topic), it is necessary to give a positive answer (to score at least 5.5 points for each question). c. HISTOPATHOLOGY EXAMINATION 2 (Histopathology exercise 7-12) The evaluation scale has a maximum of 10 points. The student gets 3 microscopic slides. The minimal requirement for completing this part of the exam is recognition and correct description of 2 microscopic slides (minimum score of 6 points). Students need to recognize the lesion, write the correct diagnosis in Latin, and correctly describe the morphological changes. d. SECOND PARTIAL EXAM (Special pathology) (Module 6-13) Partial exam 2 is designed as an essay with 4 questions with a grading scale of 40 points maximum. To pass the exam, the student must meet the minimum criteria and score 22 points. Each question is worth 10 points. Since each question includes one module (topic), it is necessary to give a positive answer (to score at least 5.5 points for each question). 2. FINAL AND RE-SIT EXAM If the student did not complete one of the forms of continued evaluation during the semester, the same happens in the final exam as follows: - for microscopic evaluation, 3 microscopic slides for each Histopathology exam (Histopathology Exercises 1-6 and/or Histopathology Exercises 7-12) are worth 10 points maximum for each; the minimal requirement for completing this part of the exam is recognition and correct description of 2 microscopic slides (minimum score of 6 points) for each Histopathology exam. Students need to recognize the lesion, write the correct diagnosis in Latin, and correctly describe the morphological changes. - if the student did not complete the FIRST PARTIAL EXAM (MODULE 1-5) on the final exam gets 4 essay questions, each question is worth 10 points; the maximum score is 40 points;

	Since each question includes one module (topic), it is necessary to give a positive answer (to score at least 5.5 points) for each question, and to score a minimum of 22 points; -if the student did not complete the SECOND PARTIAL EXAM (MODULE 6-13) on the final exam gets 4 essay questions, each question is worth 10 points; the maximum score is 40 points; Since each question includes one module (topic), it is necessary to give a positive answer (to score at least 5.5 points) for each question, and to score a minimum of 22 points; - if the student did not complete ANY OF PARTIAL EXAMS (MODULE 1-13) on the final exam gets 8 essay questions, each question is worth 10 points; the maximum score is 80 points; Since each question includes one module (topic), it is necessary to give a positive answer (to score at least 5.5 points) to all 8 questions, and to score a minimum of 44 points. NOTE: For students who did not complete partial exams, the final exam is integral, i.e. failure in one segment of the exam is eliminatory. The final exam can also be taken by students who are not satisfied with the number of points obtained during the continuous knowledge assessment, in which case they submit a written request to the Department to cancel the passed partial or complete exam (in which case only the number of points obtained in the repeated exam is recognized). The final grade is determined based on the following criteria: Grade10 (A) – total score: 95-100 points; Grade 9 (B) – total score: 85-94 points; Grade 8 (C) – total score: 75- 84 points; Grade 7 (D) – total score: 65-74 points; Grade 6 (E) – total score: 55-64 points; Grade 5 (F, FX) – total score: less than 55 points.
Literature:	**Mandatory:** • Damjanov I, Seiwerth S, Jukić S, Nola N. Pathology, IV edition, Medicinska naklada Zagreb 2014. • Teaching CD (for computer exercises) • Basic pathology, 7th Edition, Kumar, Cotran, Robbins; Chapter: Diseases of the oral cavity • Written lecture materials **Additional:** • Mladen Belitza: Autopsy Diagnostics, II supplemented edition

Item code: SFSOM0402E	**Course Title: Pathopshyology**		
Cycle: integrated	**Year: II**	**Semester: IV**	**Number of ECTS credits: 8**
Status: obligatory		**Total number of hours:90** Optionally develop the distribution of hours by type: **Lectures 60** **Exercises 30**	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	general requirements for entry in second year of study		

Aim (objectives) of the course:	The aim of the course is to enable students to get acquainted with the pathological function of certain organ systems, as well as etiopathogenetic mechanisms that lead to dysfunction and disease, by applying previously acquired knowledge from all subjects of the first year of study, especially Physiology.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Etiology, etiological factors, pathogenesis 2. Immune and local blood flow disorders 3. Metabolic disorder 4. Dysfunction of the blood and blood-forming organs 5. Disorder of the cardiovascular system 6. Endocrine system disorder 7. Respiratory disorders 8. Pathophysiology of the gastrointestinal system 9. Renal dysfunction 10. Pathophysiology of the nervous system
Learning outcomes:	Adopting knowledge and skills in the field of pathophysiology necessary for the successful continuation of dentistry studies and acquiring the professional title of a doctor of dental medicine.
Teaching methods:	-Lectures - with pre-prepared topics and active student participation -exercises - mastering the skills necessary in the diagnosis and treatment of various pathophysiological disorders
Assessment methods with assessment structure:	**First partial exam** This exam is in written form, and consists MCQ questions. The student can score a maximum of 30 points. The exam is passed if the student achieves at least 55% of points (16,5 points). The exam takes place in the seventh week after first three modules are processed. **Second partial exam** This exam is in written form, and consists of 30 MCQ questions. The number of points is multiplied by 1.5, so that the student can score a maximum of 45 points. The exam is passed if the student achieves 55% of the correct answers. The exam takes place in the 15th week after modules 4-10 **Final exam** This exam is in written form, and consists MCQ questions. The student can score a maximum of 40 points. The exam is passed if the student achieves at least 55% of points (22 points). The exam takes place in the 15th week after modules 4-10. **Final exam** This exam is in written form and consists MCQ questions. A student who has passed both partial exams does not have to take the final exam. In case that one of partial exams has been passed, student have to take the other one within the final exam. A student who has not passed any of the partial exams at the final exam has both partial exams and the final exam is passed if the student achieves 55% of the correct answers from both parts. If not, final exam in this form will not be considered as passed. **Examination of the practical part** Checking the acquired skills through practical exercises will be carried out through the colloquium. The total number of points that can be achieved is 30. The colloquium is considered passed if the student has achieved at least 55% of points (16,5 points). The colloquium place in the 15th week. Final exam: Students who did not pass the colloquium during the regular course must do it through the final exam, where the student must score 55% of

	the maximum number of points for the practical exam to be considered as passed.
Literature:	1. McPhee SJ, Lingappa VR, Ganong WP. Pathopysiology of disease. An introduction to clinical medicine. New York: Lange MedicalBooks/McGraw Hill; 2014. 2. Mccance LK, Huether ES. Pathophysiology: The Biologic Basis for Disease in Adults & Children. 6th ed. Mosby; 2010. 3. Almir Fajkic. A textbook of practical pathophysiology. Faculty of Medicine. University of Sarajevo. 2018.

Course syllabus Pathophysiology

Week	Form of teaching and materials	Number of hours
Week 1.	Lecture: The place and role of pathological physiology in medical science and practice. Sickness and death. General etiology and pathogenesis. Pathophysiology of inflammation and pain Exercises: Functional testing of the cardiovascular system Cardiovascular function tests: Harvard - Step test, Scellong I, Schellong II	
Week 2.	Lecture: The action of thermal factors of the environment. General hyperthermia. Local hyperthermia. Pathophysiology of fever. The effect of electric current on the body. The effect of radiation on the body Exercises: Electrocardiography-characteristics of normal electrocardiogram, disorders of the middle electrical axis. Impulse generation disorders: nomotopic disorders.	
Week 3.	Lecture: The effects of xenobiotics. The role of hereditary factors in the development of the disease. Exercises: Electrocardiography. Impulse generation disorders: heterotopic disorders.	
Week 4.	Lecture: Hypoxia. Effect of altered atmospheric pressure: reduced and increased atmospheric pressure. Allergic reaction and disease. Autoimmune diseases. Immunodeficiency. Exercises: Electrocardiography: Impulse conduction disorders	
Week 5.	Lecture: Disorder of local blood circulation. Energy traffic disruption; starvation, obesity. Exercises: Electrocardiography. Electrocardiographic characteristics of cardiac hypertrophy	
Week 6.	Lecture: Disorder of carbohydrate metabolism. Disorder of protein metabolism. Disorder of fat metabolism. Atherosclerosis. Exercises: Functional testing of the cardiovascular system Electrocardiography. Electrocardiographic characteristics of coronary syndrome	
Week 7.	Lecture: Disorder of water and electrolyte metabolism; types and significance of edema Disorders of calcium (Ca) and phosphorus metabolism Exercises: Hemostasis disorders. Basic hemostasis tests: Bleeding time according to Duke, Ivy, Coagulation time according to Burker, Lee-White, Quick, Howel, Capillary resistance test - Rumpel-Leede, Platelet staining and counting	
Week 8.	Lecture: Blood function disorder - red blood cell lineage: polycythemia and erythrocytosis. Anemia. Adaptation mechanisms of the organism to anemia. Leukocyte count disorder. Malignant alteration of lymphopoiesis and myelopoiesis-leukemia cells. Quantitative and qualitative platelet disorders. Hemorrhagic syndrome. Exercises: Red blood cell disorders. Erythrocyte development disorders. Morphological changes,erythrocytes: shape, color and size. Sedimentation disorders.	
Week 9.	Lecture: Pathological physiology of the cardiovascular system. Hemodynamics in heart defects. Heart rhythm disorders. Cardiac decompensation. Pathophysiology of coronary insufficiency. Arterial hypertension and hypotension.	

	Exercises: Anemia: Examination of blood regenerative abilities in anemia. Determination of reticulocytes. Determination of basophilically punctured and polychromatophilic erythrocytes. Laboratory diagnosis of anemia.	
Week 10.	Lecture: Pathophysiology endocrinopathy. Anterior and posterior lobe dysfunction pituitary gland. Thyroid dysfunction. Disorder of the adrenal cortex and marrow. Parathyroid dysfunction. Disorders of endocrine function of the testes and ovaries. Exercises: White blood cell disorders. Disorders in the development of leukocytes. Leukocyte changes peripheral blood. Differential blood cell disorders.	
Week 11.	Lecture: Pathological physiology of respiration. Ventilation disorders. Pathogenesis of pulmonary edema. Pathological physiology of respiration. Pulmonary embolism. Pathogenesis of pneumothorax and atelectasis. Respiratory rhythm disorders. Disorders of non-respiratory lung function. Pulmonary insufficiency. Exercises: Malignant diseases of the leukocyte lineage: Acute and chronic leukosis.	
Week 12.	Lecture: Pathological physiology of digestion. Disorders of motor skills, digestion and secretion Acute pancreatitis, chronic pancreatitis. Hepatobiliary disorders; disorder of biotransformation mechanisms, impaired blood flow through the liver; portal hypertension, pathogenesis of ascites. Bile secretion disorder. Exercises: Spirometry. Pulmonary ventilation testing, Obstructive and restrictive ventilation disorders.	
Week 13.	Lecture: Disorders of glomerular function of the kidneys. Nephrotic syndrome. Vascular diseases of the kidneys. Tubulointerstitial kidney disease. Postrenal causes of renal dysfunction. Acute and chronic renal failure. Diuresis disorders. Disorders of urine composition. Exercises: Functional examination of the uropoietic system. Physical and chemical examination of urine. Examination of pathological constituents of urine sediment.	
Week 14.	Lecture: Nerve transmission disorder, peripheral motoneuron dysfunction, neuromuscular junction disorder. Corticospinal tract disorders. Extrapyramidal system disorders. Pathophysiology of epilepsy. Disorder of blood flow to the CNS; Disorders of consciousness and behavior, disorders of memory and recollection. Cerebrospinal fluid disorder. Exercises: Disorders of concentration and dilution. Volhard's test. Determination of renal clearance.	
Week 15.	II PARTIAL EXAM	
Week 17.	Final exam	
19.	Final exam-retake	

Code: SFSOS0403	**Course Title: : GNATHOLOGY**		
Level: Integrated study	**Year: II**	**Semester: IV**	**Number of ECTS credits: 6**
Status: Obligatory		**Total number of hours: 45** Optionally develop the distribution of hours by type: Lecture 15	

	Exercise 30
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** **Department of Prosthodontics with Dental Implantology**
Prerequisite for enrollment:	Prerequisites for course attendance are regulated by the Rules of Studies for the Integrated Study Program of the first and second cycles in establishments of higher education at Sarajevo University
Aim (objectives) of the course:	- to teach basic theoretical and practical knowledge of gnathology - to get familiarized with and acquire knowledge of complex relationships between components of the stomatognathic system in rest and during function - introduction basic terms and elements of occlusion, different occlusal concepts and articulation - to get familiarized with and modern gnathologic techniques, - to teach how select and use articulators
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Introduction to gnathology; stomatognathic system 2. Anatomic foundations from the gnathologic perspective; craniomandibular joint connection 3. Muscles of the stomatognathic system from the gnathologic perspective 4. Physiologic regulation of jaw movements 5. Centric regulation of jaw movements 6. Mandibular reference positions 7. Articulators 8. Biostatics of occlusion 9. Biostatics of stomatognathic system 10. Antropomorfic model, position of the head in space, coordinate system and cefalometrics 11. Mandibular movements 12. Functional movements of the lower jaw; Anatomic determinants of jaw movements 13. Articulator and facebow 14. Criteria for optimal functional occlusion **15.** Features of non-physiologic occlusion
Learning outcomes:	Knowledge: - terminology and definitions of occlusion, - physiology and determinants of mandible movements - role, types, components and different opportunities of articulator - role and components of facebow - mandibular reference positions and technique of registering reference positions - features of physiologic and non-physiologic occlusion. Skills: - analysis of morphology of dental arches on the casts - the transfer technique of the upper and lower jaw cast into the

	average value articulator - analysis of occlusion on casts in articulator - modelling of occlusal morphology using gnathological wax. Competenciens: - to master methodology of the analysis occlusal relationship in centric and eccentric mandibular positions.
Teaching methods:	- ex catedra lectures for all students - practical exercises - written exercises
Assessment methods with assessment structure:	The acquired knowledge and skills are tested continually during the semester. In the structure of the total number of points, the student can achieve for activities and knowledge tests: exercise activity - maximum 10 points, minimum 6 points partial exam (in the form of a test from 8-10 weeks of the semester) - maximum 40 points, minimum 22 points final exam - maximum 50 points, minimum 27, 5 points The final exam consists of practical and theoretical (in the form of a test) part of the exam. The student takes the practical part of the exam in the 15th week of classes as part of practical exercises. The condition for taking the final exam tests is passing the practical part of the exam. The passed practical part of the exam is valid for one academic year. Tests for the partial and final exams are compiled for each exam period and are divided into groups A, B (if necessary, C, D). The partial and final exam can only be scored if each test has at least 55% correct answers. All questions in the test do not have to be evaluated with the same number of points. The decision on the method of scoring questions from the test is made by subject teachers before the test is administered. A student who did not pass the partial knowledge test takes the entire material - integrally on the final exam. The passing score level on the exam is 55%. In accordance with the above, the grade scale is as follows: a) 10(A) - exceptional success without errors or with insignificant errors - 95-100 points b) 9(B) - above average with few errors- 85-94 points; c) 8 (C) - average with noticeable errors - 75 -84 points; d) 7(D) - generally good but with significant errors- 65-74 points; e) 6(E) - meets the minimum criteria - 55-64 points; f) 5 (F, FX) – does not meet the minimum criteria, less than 55 points.

Literature:	Required: 1. Okeson JP. Management of Temporomandibular Disorders and Occlusion. 5th Edition Mosby Elsevier, 2005. 2. Dos Santos J, Occlusion- Principles & Concepts. Ishiyaku EuroAmerica, 1996. Recommended: 1. Dos Santos J, Occlusion- Principles & Treatment. 1st Edition Quintessence 2007.

COURSE SYLLABUS: GNATHOLOGY

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lecture, exercises)
Week 1.	Lecture topic: Introduction to gnathology; definition, field of study, aims, history; Stomatognathic system; components, functions of the system- functional unity Exercises: Taking of anatomic impression of the lower jaw with a full dental arch on training model and cast making.	1 2
Week 2.	Lecture: Anatomic foundations from the gnathological perspective Craniomandibular joint connection (ATM) – anatomic and functional specifics of joint in relation to gnathological concept Exercises: Taking of anatomic impression of the upper jaw with a full dental arch on training model and cast making.	1 2
Week 3.	Lecture: Muscles of the stomatognathic system from the gnathological perspective - masticatory muscles - mimic muscles - tongue and neck muscles - blood veins and muscles of the upper and lower jaws Exercises: Anatomic specifics of temporomandibular joint Reference points, lines, planes: Frankfurt plane, Spee's curve, Monson's curve, Camper's line, occlusal plane, prosthetic plane.	1 2
Week 4.	Lecture: Physiologic regulation of jaw movements Nerves and nerve synapses structure, nerve synapse, neuromuscular connection, generation of action potential and stimulus transfer through nerve tissues, receptors - function specifics of particular receptors, receptor potential, reception of stimuli in the stomatognathic system, proprioception – deep sensibility, muscle spin, Golgi's tendon organs, mechanic receptors of the periodontium, neuromuscle feedback Exercises: Cast analysis, analysis of the morphology of dental arches, horizontal and vertical overlap.	1 2

Week 5.	Lecture: Centric regulation of jaw movements, cerebrum cortex, role of basal ganglions, role of cerebellum, nucleus of cranial nerves, reflexes of the stomatognathic system, elements of the reflex pathway, monosynaptic and polysynaptic reflexes, mouth closure reflex, mouth opening reflex, linguohypoglossal reflex Exercises: Cast transfer into the average-value articulator	1 2
Week 6.	Lecture: Mandibular reference positions -physiologic rest position (FR) of the lower jaw, mechanisms which keep the mandible in rest position, factors which impact on the rest position, free Interocclusal space, clinically and electromiographically determined rest position (FR) - centric relation (CR), definition, position of condyles and muscles in CR position, centric relation and hinge movement, CR to maximum intercuspation slide maximum intercuspation (MI or Ikp), occlusal relationship of the teeth at maximum intercuspation, relationship of the anterior teeth at maximum intercuspation. Exercises: Centric relation and position of maximum intercuspation, analysis of Angle's class maxillomandibular relationships.	1 2
Week 7.	Lecture: Articulators - components, selection, classification - classification of articulators according to condyle mechanism position, transfer of a cast into the articulator without a facebow Exercises: Types of articulator, components of articulator	1 2
Week 8.	Lecture: Biostatics of occlusion: functional anatomy of occlusal surfaces, interrelationship of the maxillary and mandibular dental arches at maximum intercuspation, periodontal organ from gnathological perspective, masticatory pressure (physiologic transfer on the periodontium, face and head bones) Exercises: Analysis of occlusal surfaces Marking (registering) of: cusp top, cusp basis, central fissure, mesial and distal marginal ridge, triangular ridge etc.	1 2
Week 9.	Lecture: Biostatics of stomatognathic system: impact of the oral cavity forces on the position of teeth in a set of teeth, didactic presentation of the system biostatics, occlusion: definition, basic concepts, occlusion terminology, static and dynamic occlusion (occlusion concepts) Exercises: Analysis of occlusion on casts in articulator (in maximum intercuspation): relationship of the anterior and lateral teeth in MO (anteriorposterior, buccolingual relationship), centric occlusal contacts.	1 2

Week 10.	Lecture: Anthropomorphic model, position of the head in space, coordinate system and cephalometry: human body planes, craniometric dots, reference planes, importance of inclination of the occlusal plane and its position in space, importance of prosthetic plane and its position in space, system statics and transfer of masticatory load Exercises: Analysis and marking of occlusal contacts in MO on a scheme.	1 2
Week 11.	Lecture: Mandibular movements; rotation and translation Classification of mandibular movements - opening and closure of the mouth – anterior and posterior border opening of the mouth, habitual opening and closure of the mouth.	1
	Relationship of rotation and translation during habitual opening and closure of the mouth. Movements of habitual opening and closure of the mouth in relation to the spiral axis - protrusion, RCP-ICP slide - retrusion - lateral mandibular movements - gothic arch Exercises: Analysis of occlusion on casts in articulator: relationship of the anterior and lateral teeth in eccentric mandibular movements, relationship of the anterior teeth in eccentric movements, ways of leading the mandible, protrusion, laterotrusion and mediotrusion pathways of the supporting cusps of the lateral teeth; contacts of the lateral teeth in eccentric mandibular movements- occlusal interferences, analysis on gnathological casts in the articulator.	2
Week 12.	Lecture: Functional movements of the lower jaw - chewing (mastication), mastication phases, mastication cycle, mastication sequence, occlusal contacts during mastication, mastication forces, mastication efficiency, muscle activity during mastication - swallowing, swallowing phases - speech Anatomic determinants of jaw movements; posterior (joint) guidance, sagittal and lateral condylar path; anterior (occlusal) guidance: influence of the anterior teeth on mandible movements, influence of the lateral teeth on mandible movements, leading by a group of teeth (group function), canine guidance Exercises: Facebow transfer (demonstration and individual work), transfer of the upper jaw cast into the articulator by means of a facebow and transfer of the lower jaw cast	1 2

Week 13.	Lecture: Articulator and facebow - facebow – use, types, components, facebow registrate, functions - cast transfer into the articulator with a facebow - registration of centric relation, fabrication of registrates of maximum intercuspation and of lateral interocclusal registrate - adjustment of eccentric movements of the lower jaw- registration of protrusion and lateral position of the mandible adjustment of articular and incisal guidance in the non-arcon type of articulator Exercises: Semi-adjustable articulators; simulation of eccentric mandibular movements in articulator; adjustment of articular and incisal guide on a semi-adjustable articulator by means of protrusion registrate (laterotrusion).	1 2

Week 14.	Lecture: Criteria for optimal functional occlusion - physiologically optimal position of condyles in joint fossae - optimal tooth contacts in the complete occlusal position of the mandible, load distribution, axial loading, centric contacts - optimal contact relationship of the teeth in eccentric mandibular movements - interocclusal distance in the physiological rest position of the mandible Exercises: Modelling of occlusal morphology according to P.K. Tomas	1 2
Week 15.	Lecture: Features of non-physiologic occlusion - impact of occlusion on the orthopedic stability of the temporomandibular joint (TMJ) - impact of occlusal interferences on muscle activity - primary and secondary traumatic occlusion, consequences of traumatic occlusion Exercises: Modelling of occlusal morphology of premolars and molars according to P.K. Tomas	1 2

Code: SFSOS1016E	**Course Title: Ethics in dental medicine**		
Level: integrated	**Year: I**	**Semester: I**	**No ECTS credits:** 2
Status: Obligatory		Total classes: 30 Lectures 2 (30) Practical exercise 0 (0)	
Teaching participant	**Teachers and associates selected in the field to which the subject belongs / subject**		
Requirements for attending:	Students enrolled in the 1. Year of study		
Objectives of the course:	The main goal is to introduce students with the ethical principles that guide a doctor of dental medicine in relation to patients, colleagues, and society, as well as bioethical challenges and clinical dilemmas in the daily practice of a doctor of dental medicine.		
Thematic units:	Thematic units were formed with the aim of the student gaining an idea of medical deontology and ethical principles of the dental profession and the consequences of possible non-compliance with them. An overview of the importance of ethical principles in biomedical research was also made. The weekly lesson plan is attached.		
Outcomes:	Knowledge: Acquire knowledge about the concepts of morality, ethics and bioethics, get to know the codes of ethics and deontology in dental medicine. Skills: Master the ethical principles important for a doctor of dental medicine. Competencies: To be able to apply ethical and deontological principles in daily dental practice		
Teaching methods	Interactive lectures Seminars		
Assessment methods with mark structure:	Acquired knowledge is assessed through a partial knowledge test and a final exam. Knowledge assessment and final exam are in a form of a		

	written test. In order for the test to be considered passed and scored, it must contain a minimum of 60% correct answers. The final grade is formed according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, and carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: Ahmić A. i sar. Uvod u stomatologiju s historijom i etikom. Sarajevo: Izdavač Stomatološki fakultet Univerziteta u Sarajevu, 2018. Polgar N. Etika u dentalnoj medicini. Naklada Slap, 2019. Additional: 1. Vodanović M, Alt K et al. Essentials of Dental Medicine, Naklada Slap, 2022. 2. Williams JR. Dental Ethics Manual. France: FDI World Dental Federation;2007

Teaching plan Ethics in dental medicine

Week	Form of teaching and material	Number of hours
Week 1.	Lecture: Introductory remarks on the subject. Basic concepts: morality, ethics, medical ethics and bioethics, medical deontology	2
Week 2.	Lecture: A brief overview of the historical development of medical ethics. Medical oaths - The Hippocratic oath and the Geneva formulation of the Hippocratic oath, the Oath of F. Nightingale. Codes of medical ethics	2
Week 3.	Lecture: Basic and derived principles of medical ethics. Basic ethical principles of the doctor-patient relationship.	2
Week 4.	Lecture: Knowledge of the patient's right to information, autonomy, confidentiality, the highest level of dental assistance. A way of communication between the doctor and the patient. The patient's consent to treatment (informed, written, implicit) and refusal of treatment. The ethical attitude of the doctor towards the patient, towards colleagues, members of the dental team, towards himself, towards the social community and the family of the patient.	2
Week 5.	Lecture: Medical secrecy – unauthorized disclosure of medical secrets, criminal liability of doctors. Protection of Personal Data and Examples of Informed Consent. Informed Patient's Informed Consent.	2
Week 6.	Lecture: Medical Law – Positive Aspects of Medical Law. The moral character of the doctor, the ethical attitude of the doctor towards himself, his vocation and society.	2
Week 7.	Lecture: Errors in medicine and dentistry – the problem of negligent treatment. Vitium artis in dental practice-examples	2
Week 8.	Lecture: The Great Medical Ethical Issues of Modern Medicine. Euthanasia (active, passive, and social).	2
Week 9.	Lecture: Experiment on humans (therapeutic, biological). The Declaration of Helsinki. Good Clinical Practice – ethical and scientific standard for clinical trials. Responsibility of the researcher. The Independent Ethics Committee, its composition and tasks	2

Week 10.	Lecture: Access to information and its use. Medical and Dental Terminology and Health Literacy	2
Week 11.	Lecture: Ethics of doctors of dental medicine in digital media	2
Week 12.	Lecture: Social inequalities between patients and healthcare professionals	2
Week 13.	Lecture: Work in special and extraordinary circumstances	2
Week 14.	Lecture: Ethical dilemmas in everyday dental practice (Local anesthesia, Performing unnecessary treatments, Denying treatment,...)	2
Week 15.	Lecture: Ethical problems of private dental practice (ethical aspect of profit, self-advertising, business competition, dual work). Ethical problems in the health care institution, control of work in healthcare.	2
Week 17.	Final exam	
Week 19.	Corrective exam	

Item code: SFSIS2033E	**Course title: Dental propaedeutics and diagnostic protocol**		
Cycle: integrated	**Year: II**	**Semester: III**	**ECTS credits:** 3
Status: elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 2nd year of study who elect this course		
Aim (objectives) of the course:	Introducing students to the equipment and workplace of doctors of dental medicine. Introducing students to the diagnostic protocol in dental practice Introducing students to nomenclature and records of therapeutic procedures in dentistry.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units were formed to enable the student to conduct a diagnostic procedure and examination of the patient in dental practice, and thus be trained for clinical exercises. The plan of lectures by week is attached.		
Learning outcomes:	Knowledge: Being completely familiar with the dentist's workplace, and principles of diagnostic protocol (anamnesis, clinical examination, and additional diagnostic tools) Skills: Master the principles of performing a clinical examination important in dental medicine. Understand the possibilities of using diagnostic protocols		

	Competencies: To be able to examine a patient in everyday dental practice, refer him to additional diagnostic procedures, and triage one according to necessary treatments.
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Acquired knowledge is assessed through knowledge testing during the semester and the final exam. Knowledge assessment and final exam are in a form of a written test. In order for the test to be considered passed and scored, it must contain a minimum of 60% correct answers. The final exam carries 60% of the grade The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, and carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Topić B, Tahmišćija H. Stomatološka propedeutika; Stomatološki fakultet, Sarajevo, 2001. 2. Ahmić A. i sar. Uvod u stomatologiju s historijom i etikom. Sarajevo: Izdavač Stomatološki fakultet Univerziteta u Sarajevu; 2018. Additional: 1. Vodanović M, Alt K et al. Essentials of dental Medicine, Naklada Slap, 2022.

Teaching plan of the course Dental propaedeutics and diagnostic protocol

Week	Form of teaching and lectures	Hours
Week 1.	Lecture: Introductory remarks on the course; The concept and significance of propaedeutics and diagnostic protocol for clinical work. Exercises: Stomatognathic system.	2 1
Week 2.	Lecture: Space and basic equipment of dental office. Exercises: Introduction to the workplace of a doctor of dental medicine.	2 1
Week 3.	Lecture: Other dental practice equipment, equipment for conducting diagnostic procedures. Exercises: Recognition and ways of functioning of the devices in the dental office.	2 1
Week 4.	Lecture: Defense factors in the oral cavity, Saliva. Physiology and pathophysiology of defensive mechanisms in stomatognathic system. Exercises: Demonstration- the appearance of a healthy oral cavity.	2 1
Week 5.	Lecture: Oral pathology – recognition of hard dental tissue lesions, pulpal diseases, diseases of periodontal tissues, salivary glands, and temporomandibular junction. Exercises: Demonstration- the appearance of pathological changes in the oral cavity.	2 1
Week 6.	Lecture: Methods of examining a patient in dental practice - diagnostic procedure, elements of diagnostic procedure Exercises: Anamnesis - anamnesis of difficulties, dental anamnesis.	2 1
Week 7.	Lecture: Medically compromised patients and at-risk patients in the dental office Exercises: Anamnesis-medical, family, and social anamnesis.	2 1
Week 8.	Lecture: Clinical examination of a patient in dentistry – extraoral and intraoral. Exercises: Demonstration – extraoral examination.	2 1

Week 9.	Lecture: Tests for dental diagnostics. Exercises: Demonstration – intraoral examination.	2 1
Week 10.	Lecture: Basic remarks on radiography in the diagnostic protocol in dentistry. Exercises: Visit the X-ray room, and be introduced to radiographs in dentistry.	2 1
Week 11.	Lecture: Categorization of patients in the dental office. Exercises: Demonstration – of acute and chronic cases in dentistry.	2 1
Week 12.	Lecture: Nomenclature and content of therapeutic procedures. Exercises: Dental documentation and records	2 1
Week 13.	Lecture: Administrative work in dental office. International Classification of Diseases Exercises: Recording and entering data on diagnosis and therapy in dental records and statistical forms	2 1
Week 14.	Lecture: Ergonomics in the dental office. Prevention of professional diseases. Exercises: Demonstration - position of patient and position of the therapist during dental examination and treatment.	2 1
Week 15.	Lecture: Disinfection and sterilization in the dental office –measurements of protection for the patient and members of the dental team. Exercises: Demonstration - accidents in the dental office.	2 1
Week 17.	Final exam	
Week 19.	Corrective exam	

Item code: SFSIS2034E	**Course Title: Occupational Hazards in Dentistry**		
Cycle: integrated	**Year: II**	**Semestar: III**	**Number of ECTS credits:** 3
Status: elective		**Total number of hours: 30** **Lectures** 15 **Exercises** 15 **Seminar** 2	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	All students enrolled in the 2nd year of study		
Aim (objectives) of the course:	The aim of the course is to provide a student of the theoretical basics of health risks and professional diseases of the dentist, their prevention as well as ergonomic principles		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Health risks in dentistry, 2. Professional Diseases of the Dentist with the aspect of Physical Medicine, 3. The danger of radiation in the dental office and protection measures, 4. Professional Diseases of Dentist - Hepatitis B and C, 5. Occupational injuries in the dental office, 6. Ergonomic principles		
Learning outcomes:	After completing teaching from this course, a student will: - gain knowledge of health risks and professional diseases of the dentist, - gain knowledge of the risk of radiation in the dental office and protection measures, - to overcome ergonomic principles of work.		
Teaching methods:	- interactive lectures, - consultations.		

Assessment methods with assessment structure:	The exam consists of a partial exam during the semester and a final exam, which are taken in writing. Each exam carries 50 points. A partial exam is considered passed if the student has achieved a minimum of 28 points. At the final exam, the student must achieve a minimum of 55% correct answers. The final grade is formed by adding up the points achieved through the partial and final exam, as follows: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Vodanović, Marin i suradnici. Profesionalne bolesti i bolesti vezane uz rad stomatologa. Jastrebarsko: Naklada Slap; 2015.

Item code: SFSIS0404E	**Course Title: Legal aspects of dental practice**		
Cycle: integrated	**Year: II**	**Semester: III**	**Number of ECTS credits:** 3
Status: elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	Students enrolled in the 2nd year of study who elected this course		
Aim (objectives) of the course:	The course aims to acquaint students with the meaning and role of legal regulations in dentistry to protect dentists' rights and patients' rights.		
Thematic units (If necessary, the performance plan is determined by taking into account the specifics of organizational units):	Thematic units were formed with the aim of acquainting the student with the legal legislation governing the performance of dental medicine, and sanctions in case of violations. The teaching plan is given by the week in the attachment		
Learning outcomes:	Knowledge: Acquired knowledge of human rights, medical law, and the rights and obligations of dentists Skills: Finding and proper use of sources of medical law, and adequate communication with relevant entities and institutions Competences: Will be able to deal with a dental practice under the applicable legal framework governing dental practice, and apply methods and procedures to protect the rights of dentists		

Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Acquired knowledge is assessed through knowledge testing during the semester and the final exam. Knowledge assessment and final exam are in a form of a written test. In order for the test to be considered passed and scored, it must contain a minimum of 60% correct answers. The final grade is formed according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, and carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. sources of legal norms relevant to dental practice (The Law on Health Care of Federation of Bosnia and Herzegovina, The Law on Dental Practice of Federation of Bosnia and Herzegovina, The Law on Rights, Obligations and Duties of Patients in Federation of Bosnia and Herzegovina, The Law on Records in the Field of Health, and others 2. authorized lectures - handsout 3. Smajkic A. Niksic D; Bahtijarević R. Human rights to life, health and social existence in Bosnia and Herzegovina. Fokus-medical d.d. Sarajevo, 2004 Additional: Selected Articles on Medical Deontology

Teaching plan of the course Legal aspects of dental practice

Week	Form of teaching and lectures	Hours
Week 1.	Lecture: Introductory remarks on the subject; overview of thematic units, ways of testing knowledge Exercises: Demonstration exercises - searching for sources of information and selection of relevant information	2 1
Week 2.	Lecture: The importance of knowledge of medical law for health professionals Exercises: Demonstration of law search	2 1
Week 3.	Lecture: European Convention for the Protection of Human Rights and Fundamental Human Freedoms - European and World Convention for the Protection of the Rights of Health Care Users Exercises: Questions for self-evaluation	2 1
Week 4.	Lecture: Legislation regulating the performance of dental activities in FBH: Law on Health Care, Law on Dental Activities of FBH, Law on Rights, Obligations and Duties of Patients of FBH, Law on Records in the Field of Health of FBH, Law on Medical Waste Management of FBH and others Exercises: Questions for self-evaluation	2 1
Week 5.	Lecture: Bylaws and internal legal acts in health care institutions. Health inspection Exercises: Demonstration of searching bylaws	2 1
Week 6.	Lecture: The legal nature of the dentist-patient relationship: A partnership model Exercises: Discussion of the paternalistic and partner relationship doctor-patient	2 1
Week 7.	Lecture: Basic rights of patients: the right to be informed, the right to consent or refuse treatment, the right to inspect the documentation, the right to a doctor's office, the right to medical data protection Exercises: Questions for self-evaluation	2 1

Week 8.	Lecture: Informed patient consent: ethical, legal and clinical aspects Exercises: content and formation of the informed consent form.	2 1
Week 9.	Lecture: Types and importance of dental documentation in the light of the Law on Records in the field of health and guides to good practice on keeping health records. The role and importance of dental documentation in forensic expertise Exercises: Questions for self-evaluation	2 1
Week 10.	Lecture: Responsibility of dentists in terms of teamwork Exercises: Discussion of teamwork: advantages and challenges	2 1
Week 11.	Lecture: Civil liability of dentists. Compensation for damage caused to the patient by negligent treatment Exercises: Questions for self-evaluation	2 1
Week 12.	Lecture: Medical error, negligence of dentists and failure to provide medical care. Exercises: Searching for medical error information	2 1
Week 13.	Lecture: Special cases of responsibility of dentists and members of the dental team (Spread of infection, aesthetic procedures, performing unnecessary treatments) Exercises: Questions for self-evaluation	2 1
Week 14.	Lecture: Principles of protection against patient complaints and grievances Exercises: Discussion of protection options and levels of dispute resolution with patients	2 1
Week 15.	Lecture: Dilemmas of dentists between ethical principles and legal regulations Exercises: Demonstration exercises: Accidents in the office.	2 1
Week 17.	Final exam	
Week 19.	Corrective exam	

Item code: SFSIS0406E	**Course Title: Management in Dentistry**		
Cycle: integrated	**Year: II**	**Semester: IV**	**Number of ECTS credits: 3**
Status: elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	Students enrolled in the 2nd year of study who elect this course		
Aim (objectives) of the course:	For students to acquire basic knowledge in management, marketing, and business administration, as well as about managing and quality controlling in the dental practice.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Units are created to student acquires basic knowledge of legal, economic, and financial aspects of leadership in dental practice, and to understand the importance of monitoring quality standards in the health care system.		

Learning outcomes:	Knowledge: Accepting the basic concepts in management (efficiency, effectiveness, human resources, and strategic planning). Skills: Accepting the basics of marketing required for dental services. Competencies: Understanding and applying the principles of quality management in the health care system.
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Acquired knowledge is assessed through evaluation during the semester and the final test exam as well. The final exam carries 50% of the grade. For a test to be scored, it must contain a minimum of 60% correct answers. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, and carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Metodološko uputstvo za uspostavljanje, razvijanje i održavanje Sistema poboljšanja kvaliteta i sigurnosti zdtravstvenih usluga u federaciji BiH, dostupno na http://www.akaz.ba/publikacije 2. Priručnik za menadžere zdravstvenih ustanova, dostupno na http://www.akaz.ba/publikacije Additional: Gutić Dragutin. Menadžment u zdravstvu. Osijek, 2015.

Teaching plan of the course Management in dentistry

Week	Form of teaching and lectures	Hours
Week 1.	Lecture: Introduction about the subject; Overview of thematic units, Models of testing knowledge, the importance of management in the healthcare system. Exercises: Demonstration- Searching for information sources.	2 1
Week 2.	Lecture: Management- definition, history, basic functions, and terminology Exercises: Self-evaluation questions.	2 1
Week 3.	Lecture: Doctor of dental medicine as a health manager- health manager basic skills Exercises: Self-evaluation questions.	2 1
Week 4.	Lecture: Models of organization in dentistry- simple (entrepreneurial), complex (professional), and innovative model. Exercises: Self-evaluation questions.	2 1
Week 5.	Lecture: Quality in the healthcare system, definitions, and terms. Quality documentation. Quality management of dental health care. Exercises: Examples of quality documentation	2 1
Week 6.	Lecture: Organization of business processes in dentistry. Processes division and resources. Exercises: Self-evaluation questions	2 1
Week 7.	Lecture: Innovative management, teamwork, and motivation in dental medicine. Time management. Exercises: Survey and motivation assessment	2 1
Week 8.	Lecture: Economics and financing of dental institutions. Exercises: Understanding the financial reports of a dental office	2 1
Week 9.	Lecture: Products and services management in dental medicine. Exercises: Self-evaluation questions	2 1

Week 10.	Lecture: Entrepreneurship in dental medicine- managing of a dental office, risk management. Exercises: Software for dental office management	2 1
Week 11.	Lecture: Project management-project documentation, budget planning, time frame, project completion. Exercises: A project evaluation	2 1
Week 12.	Lecture: Strategic and operational planning and marketing management in dentistry. Exercises: Self-evaluation questions	2 1
Week 13.	Lecture: Marketing management services in dental medicine. Exercises: Self-evaluation questions	2 1
Week 14.	Lecture: Ethical and legal aspects of marketing in dentistry. Exercises: Discussion of ethical dilemmas	2 1
Week 15.	Lecture: Information technologies, multimedia communications, and PR in dentistry. Exercises: Role of social media in marketing	2 1
Week 17.	Final exam	
Week 19.	Corrective exam	

Item code: SFSIO0405E	**Course Title: DATA PROCESSING IN DENTISTRY**		
Cycle: integrated	**Year: II**	**Semester: IV**	**Number of ECTS credits:3**
Status: elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** **Exercises**	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	entry requirements correspond to the legal regulations of studying in University of Sarajevo		
Aim (objectives) of the course:	The objective of the course is that students through theoretical and practical work overwhelm the practical application of all previously acquired knowledge in informatics, and the ways of data processing in information systems.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)			
Learning outcomes:	Students will acquire the following knowledge and skills: 1. Identification of possible units and types of data and basic data operations 2. Learn about the possible applications of data processing for scientific and commercial purposes 3. Learn about methods of data collection, data input, data processing and data processing elements		

	4. Learn about the usual models and methods of modeling, statistical analysis of data, organization and presentation of data 5. Reporting and graphic representation and visualization of data processing results of the system 6. Learn what are the threats, vulnerabilities and risks of data security, and the ways in which these risks can be managed 7. Acquire practical knowledge in the field of database management which includes database creation, tables, data manipulation, creation of forms for data entry, and creation of reports. 8. Practical work with the MS Access tool
Teaching methods:	
Assessment methods with assessment structure:	The final knowledge assessment will be carried out by a test that will include questions from all dental disciplines where practical exercises are processed, in a proportion according to the number of classes. The final exam is passed if the student gives at least 55% correct answers to the questions. A student can score a maximum of 100 points. Final grade is formed as follows: 10 (A) - 95-100 points; 9 (B) - 85-94 points; 8 (C) - 75-84 points; 7 (D) - 65-74 points; 6 (E) - 55-64 points; 5 (F,) - under 55 points.
Literature:	1. lectures handouts 2. Fry B. Visualizing Data: Exploring and Explaining Data with the Processing Environment. O'Reilly Media; 2008 3. Wu MS. Introduction to Computer Data Processing. Harcourt College Pub; 1979. 4. Roman S. Access Database Design & Programming. 3rd Edition.O'Reilly Media; 2009. 5. Whitehorn M, Marklyn B. Accessible Access 2003. Springer; 2005.

Course syllabus Data processing in dentistry

Week	Form of teaching and materials	Number of hours
Week 1.	Lectures: Informatics in dentistry Presentation of the basics necessary for listening to the subject and presentation of the goals of informatics in dentistry and data processing in dentistry. Exercises: MS Access and work with MS Access Introduction to the techniques of laboratory work for the subject Data processing in dentistry and how to work with the tool MS Access	
Week 2.	Lectures: Development of data processing Presenting the development of data processing as a basis for understanding the importance and need for data processing Exercises: Creating a database and tables Creating databases and tables using MS Access	
Week 3.	Lectures: Units and types of data Introducing students to the basic units and types of data that could be used for data processing. Exercises: Working with tables Laboratory training in working with tables using MS Access	

Week 4.	Lectures: Basic data operations Presentation of basic mechanisms of data operation Exercises: Data entry and working with table columns Laboratory training in data entry methods and working with columns of tables using MS Access	
Week 5.	Lectures: Scientific and commercial data processing Presenting data processing as a tool for different uses Exercises: Data entry masks Creating data entry masks using MS Access	
Week 6.	Lectures: Methods of data collection and input Presentation of possible ways of collecting and entering data Exercises: Editing records Edit records in the database using MS Access	
Week 7.	Lectures: Data verification Presentation of possible ways to check the correctness of data during entry and processing Exercises: Designing a data table Formatting a data table using MS Access	
Week 8.	Lectures: Data processing and data processing elements (Summarization, Aggregation, Validation, Data tabulation) Presentation of possible ways and elements of data processing Exercises: Displaying data Displaying data using MS Access	
Week 9.	Lectures: Data models and modeling Presentation of possible models and ways of data modeling Exercises: Primary key and relation between tables Setting the primary key and relationships between tables using MS Access	
Week 10.	Lectures: Statistical Data Analysis Presentation of possible ways of statistical data analysis Exercises: Inquiries Creating queries using MS Access	
Week 11.	Lectures: Organization and presentation of data Presentation of possible ways of organization, visualization and presentation of data as a tool for achieving the goals of data processing. Exercise Forms Creating forms using MS Access	
Week 12.	Lectures: Reporting and graphical presentation of processing results data system Presentation of possible ways of reporting and graphical presentation of system data processing results Exercises: Work and formatting from forms Work and format from forms using MS Access	
Week 13.	Lectures: Databases and data warehouses Presentation of possible practical realizations of database and data warehouse Exercises: Reports Creating reports using MS Access	
Week 14.	Lectures: Information systems design Presentation of possibilities and purposes of information design system Exercises: Adding fields to reports Add fields to reports using MS Access	
Week 15.	Lectures: Data Security Presenting data security risks and possible ways to prevent possible consequences Exercises: Database management Database management using MS Access	

	Practical testing of knowledge through practical problem solving with the help of computers and testing of knowledge from theoretical foundations	
Week 17-20.	Final exam	

THIRD YEAR OF STUDY

Course code: SFSOM0505E	**Course name: PHARMACOLOGY**		
Cycle: Undergraduate	**Year: III**	**Semester: V**	**Number of ECTS credits: 4**
Status: obligatory		**Total number of hours: 75** Lectures: 15 hours Seminar: 30 hours Exercises: 30 hours	
Teaching participants	Professors and associates selected for the area to which the subject belongs/the subject		
Prerequisite for enrollment:	All students enrolled in the 3rd year of study		
Objective(s) of the course:	The aim of the class is for the student to acquire knowledge about the general principles of pharmacology and the basic characteristics of drugs used in the treatment of infections, malignant diseases, allergies, autoimmune diseases, diseases of the vegetative nervous system, central nervous system, cardiovascular system, blood, respiratory system, gastrointestinal system, endocrine system, and about the basic principles of drug selection. Within the framework of toxicology, the aim of the course is for students to become familiar with the problem of abuse of psychoactive substances, and to acquire knowledge about the characteristics and treatment of the most common poisonings.		
Thematic units:	**LECTURES and SEMINARS** - THEORETICAL TEACHING: Thematic unit 1: GENERAL PHARMACOLOGY: Objective: introduction to the drug concept, general principles of pharmacology, basics of pharmacodynamics and pharmacokinetics. Thematic unit 2: CHEMOTHERAPY Objective: familiarization with drugs in the treatment of infections and malignant diseases. Thematic unit 3: PHARMACOLOGY OF THE VEGETATIVE NERVOUS SYSTEM Objective: familiarization with drugs that act on the vegetative nervous system: cholinomimetics and cholinolytics, adrenomimetics and adrenolytics. Thematic unit 4: PHARMACOLOGY OF THE CENTRAL NERVOUS SYSTEM Objective: familiarization with the mechanisms of action of drugs in the CNS, and the basic characteristics of the following therapeutic groups of drugs: general and local anesthetics, analgesics, anxiolytics, sedatives, hypnotics, antipsychotics, antidepressants, antiepileptics, antiparkinsonian drugs. Thematic unit 5: IMMUNOPHARMACOLOGY Objective: to acquaint students with drugs in the treatment of allergic and autoimmune diseases. Thematic unit 6: TOXICOLOGY Objective: familiarization with the problems of drug abuse and other psychoactive substances, drug overdose, and the most common poisonings. Thematic unit 7: PHARMACOLOGY OF THE RESPIRATORY SYSTEM Objective: to acquaint students with drugs used in obstructive diseases and in the treatment of cough.		

	Thematic unit 8: PHARMACOLOGY OF THE CARDIOVASCULAR SYSTEM Objective: to acquaint students with the drugs used in the treatment of heart failure, arrhythmias, hypertension and hypotension, and in the treatment of myocardial ischemia. Thematic unit 9: PHARMACOLOGY OF BLOOD Objective: to acquaint students with drugs used in sideropenic anemia, or drugs that affect blood coagulation. Thematic unit 10: PHARMACOLOGY OF THE GASTROINTESTINAL SYSTEM Objective: to acquaint students with the drugs used in the treatment of ulcer disease, nausea, and intestinal peristalsis disorders. Thematic unit 11: PHARMACOLOGY OF THE ENDOCRINE SYSTEM Objective: to acquaint students with hormones as drugs, and drugs used in diseases of the adrenal gland, thyroid gland, in the treatment of diabetes mellitus, and with basic methods of contraception, and the risks of drug use in special population groups. **PRACTICAL LESSONS - EXERCISES:** Thematic unit 1: Legal provisions on medicines Objective: to acquaint students with the legal provisions on the circulation, prescribing and dispensing of medicines, poisons and narcotic drugs, as well as basic sources of information on medicines. Thematic unit 2: Pharmacography Objective: to acquaint students with the basic pharmacographic rules of prescribing and issuing prescriptions for different pharmaceutical forms of drugs Thematic unit 3: Factors influencing the action of drugs Objective: to acquaint students with various internal and external factors that result in a modified response to the drug Thematic unit 4: Rational pharmacotherapy Objective: to acquaint students with the basic principles of rational pharmacotherapy and the basic principles of choosing an L-drug Thematic unit 5: Selection of L medicine for different conditions Objective: to acquaint the student with the method of choosing L-medicine for the most common conditions in practice Topic of unit 6: Treatment of anaphylactic shock Objective: to acquaint the student with the symptoms and prevention of the development of anaphylactic shock, as well as its treatment Thematic unit 7: Overdose and overdose treatments Objective: to acquaint students with the recognition of poisoning symptoms, care measures and overdose treatment for various conditions.
Learning outcomes:	Knowledge: The student will have the basis of knowledge necessary to master the material from clinical subjects, as well as for practical work. Acquisition of knowledge and skills in prescribing different pharmaceutical forms. Skills: To analyze the therapy available today for certain diseases of the organic systems. To relate the actions of different drugs and to evaluate their possible interaction. Anticipate and recommend a way to avoid unwanted effects and interactions. Competencies: Application of professional knowledge and skills in counseling on rational pharmacotherapy; Selection of therapy and prescription; Informing and counseling patients about the pharmacological action and proper use of drugs; Monitoring the course and outcome of therapy; Recognition of clinically significant drug interactions and their prevention; Reporting of adverse reactions to the drug/s.
Teaching methods:	1. Lectures 2. Seminars 3. Exercises

Methods of checking knowledge with a grade structure:	**METHODS OF CHECKING KNOWLEDGE:** Knowledge testing is provided through 2 colloquia, 2 partial exams and a final exam for students who did not pass the colloquia and partial exams during continuous knowledge testing. Knowledge test structure and scoring: • **Partial exam I** - It is written and consists of 30 MCQ questions. - The correct answer to the question is only if the student circles only correct statements. - The maximum number of points is 30. The exam is passed if the student gets 55% of the correct answers. - The exam is taken in the 9th week of classes. • **Partial exam II** - It is written and consists of 30 MCQ questions. - The correct answer to the question is only if the student circles only correct statements. - The maximum number of points is 30. The exam is passed if the student gets 55% of the correct answers. - The exam is taken in the 15th week of classes. • **Seminar work** - While attending the teaching process, students are nominated for seminar paper topics. • **Final exam** - The final exam for students who did not pass one of the partial exams includes an oral exam that covers the material in the partial exam that was not passed, or an integral oral exam if no partial exam was passed. The final exam includes 5 oral questions each from partial exam 1 and partial exam 2. If one of the questions is not answered, the student has not met the minimum criteria. The condition for taking the final exam is to pass colloquium I and colloquium II. • **Repeated exam** - It is taken in the same way as the defined final exam. **EXAM FROM THE PRACTICAL PART** The verification of acquired skills through practical exercises will be carried out continuously during the semester through two colloquiums: • **Colloquium I** - It is taken in writing and consists of the teaching units "Legal Provisions in Prescribing Medicines" and "Pharmacography". - The maximum number of points is 20, and the colloquium is passed if the student gets 55% of the correct answers. - It is taken in the 8th week of classes after the mentioned teaching units have been covered • **Colloquium II** - It is taken in writing and consists of the teaching units "Rational pharmacotherapy" and "Overdose". - The maximum number of points is 20, and the colloquium is passed if the student gets 55% of the correct answers. - It is taken in the 14th week of classes after the mentioned teaching units have been covered Only students who have passed the complete practical exam (both colloquiums) can take the final and repeated exams. - On the final exam, the student must obtain 55% of the maximum number of points from each colloquium not previously passed. If the student has two failed colloquia and does not meet the required number of points for each failed colloquium, the practical exam will not be considered passed.

	After successfully obtaining the minimum or higher number of points for each segment of the test, the final grade for the subject is formed, according to the criteria: Sum of points Numerical and letter grade 95 – 100 10 (A) 85–94 9 (B) 75 – 84 8 (C) 65–74 7 (D) 55–64 6 (E) < 55 5 (F, FX)
Literature:	**Mandatory:** • General and special pharmacology. Kapić E, Kusturica J. High School of Health, Sarajevo, 2007. • Pharmacological handbook for dental students. Kusturica J, Rakanović-Todić M. Faculty of Medicine, University of Sarajevo, 2011. **Additional:** • Pharmacology for dentists, Linčir I. Medicinska naklada, Zagreb, 2011.

Implementation plan for the course Pharmacology

Week	Form of teaching and materials	Number of hours
Week 1.	Lecture: Introduction to pharmacology (Definition of drugs and poisons, origin and names of drugs, methods of drug administration). Pharmacodynamics of drugs (mechanism and action of drugs, drug interactions, side effects of drugs). Pharmacokinetics of drugs (absorption, drug transport, distribution, metabolism and elimination) Exercises: Definition of medicine, development of medicine; sources of information about the drug. Legal provisions on the circulation, prescribing and dispensing of medicines, poisons, and narcotic drugs.	3 2
Week 2.	Lecture: Chemotherapy (Anti-infective drugs). Seminar: Penicillins and cephalosporins, Aminoglycosides, Chloramphenicol, Tetracyclines). Macrolides, Sulfonamides, Quinolones, Antifungal drugs, Antiviral drugs, Amoebicidal drugs. Exercises: Parts and contents of a recipe. Pharmacography - tablets and capsules	1 2 2
Week 3.	Lecture: Chemotherapy of malignant diseases. Seminar: Antineoplastic drugs and side effects in the oral cavity. Topicals for the oral cavity, preparations used in endodontics, astringents, resins, mucus - case reports Exercises: Pharmacography - suppositories, enemas, injections and infusions	1 2 2
Week 4.	Lecture: Pharmacology of the vegetative nervous system. Cholinomimetics and cholinolytics. Adrenomimetics and adrenolytics. Seminar: Oral hygiene preparations. Antiseptics and disinfectants in dentistry. Exercises: Pharmacography - solutions and drops for internal use	1 2 2
Week 5.	Lecture: Opiate analgesics. Anxiolytics, sedatives, hypnotics. Seminar: General anesthetics, Local anesthetics. Side effects of local anesthetics. Exercises: Pharmacography - solutions and drops for external use	1 2 2
Week 6.	Lecture: Antipsychotics, Antidepressants, Antiepileptics, Antiparkinsonian drugs. Seminar: Analgesics-antipyretics. Non-steroidal anti-inflammatory drugs.	1 2

	Exercises: Pharmacography - powders for internal and external use.	2
Week 7.	Lecture: Pharmacology of the respiratory system. Oxygen therapy. Seminar: Expectorants. Bronchodilators. Cough medicines. Exercises: Pharmacography - ointments, pastes. Pharmacography – Inhalations.	1 2 2
Week 8.	Lecture: Immunopharmacology. Immunosuppressants. Seminar: Immunostimulants, H1 antihistamines **Colloquium I.**	1 2 3
Week 9.	**Partial exam I** Exercises: Basic principles of rational pharmacotherapy. Principle of selection of P-drug. Factors affecting the effect of drugs (doses of drugs, doses for children, special conditions, therapeutic range)	3 2
Week 10.	Lecture: Pharmacology of the cardiovascular system. Medicines in the treatment of heart failure. Seminar: Drug overdose Exercises: Selection of L-medicine for certain painful conditions	1 2 2
Week 11.	Lecture: Antiarrhythmic drugs. Antihypertensive drugs. Seminar: Medicines for the treatment of myocardial ischemia Exercises: Choice of L-medicine in the treatment of infections in the oral cavity	1 2 2
Week 12.	Lecture: Pharmacology of blood. Medications for anemia Seminar: Medicines that affect blood coagulation. Exercises: Procedures for bleeding disorders in dental practice. Anaphylactic shock; treatment of anaphylactic shock	1 2 2
Week 13.	Lecture: Pharmacology of the gastrointestinal system. Medicines in the treatment of ulcer disease. Seminar: Antiemetics, emetics, laxatives, antidiarrheals Exercises: Overdose (types of overdose, clinical picture and treatment of overdose). Analgesic overdose. Overdose with psychoactive substances. Case report - simulated patient	1 2 2
Week 14.	Lecture: Pharmacology of the endocrine system. Adrenal and thyroid hormones. Sex hormones. Contraception. Seminar: Medicines in the treatment of diabetes mellitus. Use of drugs in pregnant and lactating women, risks of using certain drugs **Colloquium II**	1 2 3
Week 15.	**Partial exam II.**	3
Week 17.	Final exam	
Week 19.	Repeated exam	

Item code:	**Course Title: Biomedical foundations of Dental practice**		
Cycle: integrated	**Year: II**	**Semester: IV**	**Number of ECTS credits:** 3
Status: elective		**Total number of hours: 30** Optionally develop the distribution of hours by type: **Lectures** 1 (15) **Exercises** 1(15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	Choosing the course as an elective		
Aim (objectives) of the course:	Elective course aims to provide dental students with essential knowledge from the basic medical sciences – physiology, microbiology, pathology,		

	and immunology – applied directly to dental practice. Students will learn how systemic processes influence oral health and how medical foundations support safe and effective dental treatment. The emphasis is on bridging theory with practical examples relevant to everyday dentistry.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Biomedical foundations as the basis of dental practice Anatomical foundations of pathological processes in the oral region Basic physiological processes relevant to oral health Homeostasis and disorders in the context of dentistry Normal microflora of the oral cavity Pathogenic microorganisms and oral infections Basics of immunology – the immune system and the oral cavity Immunological disorders and oral manifestations Basics of oral pathology
Learning outcomes:	Knowledge: After finishing the course, the student should understand fundamental physiological, microbiological, pathological, and immunological processes relevant to oral health. Skills: On successful completion of this module students will be able to: - Explain and relate physiological and immunological processes to oral conditions. - Identify microorganisms, immune responses, and pathogenetic mechanisms that lead to the development of oral diseases. - Analyze and evaluate homeostasis and infection mechanisms in dental practice Competences: On successful completion of this module, students will be able to: - Apply biomedical knowledge in the diagnosis and manage oral health conditions. - Integrate systemic health understanding into safe and effective dental treatment planning.

Teaching methods:	• Lectures • Practical courses – in student's groups according to standard • Interactive learning for all students (during lectures and practical courses)
Assessment methods with assessment structure[1]:	Mandatory attendance and participation in classes account for 20 points (it will be considered that the student has met this criterion if they have a justified absence from no more than 20% of classes). Partial exam accounts for 40 points of the grade. Final exam accounts for 40 points of the grade. A student can achieve a maximum of 100 points. Grading scale : 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points.

[1] The structure of points and point criteria for each subject is determined by the council of the organizational unit before the beginning of the academic year in which the subject is taught following Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

	9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature[2]:	Mandatory: Authorized Lectures, Course Materials Bajrić E (urednik) i autori. Osnove preventivne stomatologije sa kliničkom primjenom u praksi. Odabrana poglavlja. Stomatološki fakultet sa klinikama. Sarajevo 2024;

[2] The Senate of the higher education institution as an institution or the council of the organizational unit of the higher education institution as a public institution determines mandatory and recommended textbooks and manuals, as well as other recommended literature based on which it prepares and takes the exam as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton

Course Implementation Plan: Biomedical Foundations of Dental Practice

Week	Course form and content	Number of hours
Week 1.	Lectures: Biomedical foundations as the basis of dental practice Exercise: Course content follows lectures – case analysis	1 1
Week 2.	Lectures: Anatomical Basis of Dental Practice Exercise: Course content follows lectures – case analysis	1 1
Week 3.	Lectures: Histological Basis of Dental Practice Exercise: Course content follows lectures – case analysis	1 1
Week 4.	Lectures: Teeth and Supporting Tissues Exercise: Course content follows lectures – case analysis	1 1
Week 5.	Predavanje: Functions of the Oral Mucosa Exercise: Course content follows lectures – case analysis	1 1
Week 6.	Lectures:: Oral Biological Fluids Exercise: Course content follows lectures – case analysis	1 1
Week 7.	Partial exam	2
Week 8.	Lectures: Basic Physiological Processes Relevant to Oral Health. Exercise: Course content follows lectures – case analysis	1 1
Week 9.	Predavanje: Homeostasis and disorders in the context of dentistry Exercise: Course content follows lectures – case analysis	1 1
Week 10.	Lectures: Normal microflora of the oral cavity Exercise: Course content follows lectures – case analysis	1 1
Week 11.	Lectures: Pathogenic microorganisms and oral infections Exercise: Course content follows lectures – case analysis	1 1
Week 12.	Predavanje: Oral Biofilm and Dental Plaque Exercise: Course content follows lectures – case analysis	1 1
Week 13.	Lectures: The immune system and the oral cavity Exercise: Course content follows lectures – case analysis	1 1
Week 14.	Lectures: Immunological Background of Pathological Processes in the Oral Cavity Exercise: Course content follows lectures – case analysis	1 1
Week 15.	Lectures:Inflammation and Tissue Repair in the Oral Cavity Exercise: Course content follows lectures – case analysis	1 1
Week 17.	Final Exam I	
Sedmica 19.	Final Exam II	

Item code: SFSOS3051E	**Course Title: PRECLINICAL AND LABORATORY REMOVABLE PROSTHODONTICS**		
Cycle: integrated	**Year: III**	**Semester: V**	**Number of ECTS credits: 5**
Status: obligatory		**Total number of hours: 90 (30+60)** Lectures 30 Exercises 60	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** **Department of Prosthodontics with Dental Implantology**
Prerequisite for enrollment:	All students enrolled in the 3th year of study
Aim (objectives) of the course:	The aim of the course Preclinical and laboratory removable prosthodontics is to teach students fundamental biomedical and technological knowledge and skills on which clinical and laboratory work in the therapy of complete or partial edentulism with removable prosthetic restorations is based. Preclinical and laboratory removable prosthodontics allow students to adopt and connect the knowledge and skills of the clinical and laboratory parts of complete and partial denture making, which is a prerequisite for performing clinical procedures on patients. By acquiring the aforementioned knowledge and practical skills, students gain an understanding of the complexities of prosthodontic therapy, which is dependent on the success of clinical and laboratory procedures at the same time.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. General terms in relation to complete and partial edentulism, removable prosthetic restorations types; Conventional complete denture workflow; Anatomical impression of an edentulous jaw; Preliminary cast 2. Custom tray, final (functional) impression, master cast 3. Record bases and occlusion rims 4. Determining maxillomandibular relations and transferring master casts to an articulator 5. Selection and setting of anterior artificial teeth 6. Selection and setting of posterior artificial teeth; wax denture try-in 7. Final procedures in the fabrication of conventional complete dentures; Complete denture delivery 8. Remounting, selective grinding, repairs, and relinings of complete dentures 9. Partial edentulism: causes, consequences, forms, classifications; Indications for different types of partial dentures with an overview of contemporary materials 10. Interim partial denture 11. Removable partial denture components, fundaments of planning, and kinetics 12. Fabrication of cast removable partial denture (first part); Dental parallelometer 13. Fabrication of cast removable partial denture (second part); Repair and relining of partial dentures 14. Immediate dentures and overdentures 15. The fabrication of digital dentures

Learning outcomes:	Knowledge: After successfully completing the course, the student will have knowledge of: different therapeutic options for the rehabilitation of complete and partial edentulism with removable prosthetic restorations; laboratory and basic clinical procedures, as well as their interconnectedness in the fabrication of removable prosthetic restorations; use of materials, instruments, equipment, and devices in the laboratory part of conventional complete and partial denture making; application of digital technologies in the fabrication of removable prosthetic restorations; and procedures that re-establish the functionality of removable prosthetic restorations. Skills: After successfully completing the course, the student will have the skills to perform independently: anatomical impressions of complete and partial edentulous jaws (on the phantom head); pouring impressions and making
	master/study casts of complete and partial edentulous jaws; fabrication of custom trays, upper and lower bite rims; preparations and mounting of the master casts on an articulator; preparations and settings up of anterior and posterior artificial teeth; analyzing casts of partial edentulous jaws; determining the class of partial edentulism; analyzing the abutment teeth morphology; making of wire clasp; surveying with a dental parallelometer; planning design of cast metal removable partial dentures for various classes of partial edentulism; preparation of abutment teeth on gypsum casts. Competences: After successfully completing the course, the student will be able to: assess the quality and accuracy of impressions and gypsum casts of complete and partial edentulous jaws; evaluate the quality of laboratory production of the custom trays, bite rims, wire clasps, cast metal framework, setting of artificial teeth, and finished complete/partial dentures; plan the therapy of a complete and partial edentulous patient at the basic level.
Teaching methods:	Lectures for all students Practical exercises in groups

Assessment methods with assessment structure:	The acquired knowledge and skills are tested continually during the semester. In the structure of the total number of points, the student can achieve for activities and knowledge tests: - exercise activity - maximum 10 points, minimum 6 points - partial exam (in the form of a test from 8-10 weeks of the semester) - maximum 40 points, minimum 22 points - final exam - maximum 50 points, minimum 27,5 points. The final exam consists of practical and theoretical (in the form of a test) part of the exam. The student takes the practical part of the exam in the 15th week of classes as part of practical exercises. The condition for taking the final exam is passing the practical part of the exam. The passed practical part of the exam is valid for one academic year. Tests for the partial and final exams are compiled for each exam period and are divided into groups A, B (if necessary, C, D). The partial and final exam can only be scored if each test has at least 55% correct answers. All questions in the test do not have to be evaluated with the same number of points. The decision on the method of scoring questions from the test is made by subject teachers before the test is administered. A student who did not pass the partial knowledge test takes the entire material - integrally on the final exam. The passing score level on the exam is 55%. In accordance with the above, the grade scale is as follows: - 10(A) - exceptional success without errors or with insignificant errors - 95-100 points - 9(B) - above average with few errors- 85-94 points; - 8 (C) - average with noticeable errors - 75 -84 points; - 7(D) - generally good but with significant errors- 65-74 points; - 6(E) - meets the minimum criteria - 55-64 points; - 5 (F, FX) – does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Lakshmi S. Preclinical Manual of Prosthodontics. 3rd ed. New Delhi: Elsevier India; 2018. 2. Phoenix RD, Cagna DR, DeFreest CF. Stewart's Clinical Removable Partial Prosthodontics. 4th ed. Chicago: Quintessence Publishing; 2008. 3. Carr AB, Brown DT. McCracken's Removable Partial Prosthodontics. 14th ed. St. Louis: Elsevier; 2019. 4. Tamimi F, Hirayama H, editors. Digital Restorative Dentistry: A Guide to Materials, Equipment, and Clinical Procedures. Cham: Springer; 2019.

COURSE SYLLABUS PRECLINICAL AND LABORATORY REMOVABLE PROSTHODONTICS

Week	Form of teaching and materials (lectures, exercises)	Number of hours

Week 1.	Lectures: General terms in relation to complete and partial edentulism, removable prosthetic restorations types; General terms in relation to complete denture (definition, roles, surfaces, and components of the denture, bearing area of upper and lower complete dentures); Review of clinical and laboratory procedures in the fabrication of conventional complete dentures; Preliminary (anatomical) impression in complete denture fabrication: definition, selection of impression trays and materials, impression taking procedure, impression quality evaluation; Pouring of preliminary impression and making a preliminary (anatomical, working) cast, separating preliminary cast from the impression material, cast trimming	2
	Exercises: Introductory class with demonstration and practical work of the student: Selection of impression trays for preliminary impressions of edentulous jaws, the procedure of making anatomical impressions of the phantom head, preliminary impressions pouring and making of lower and upper working casts, casts trimming	4
Week 2.	Lectures: Custom tray: fabrication of close-fit custom tray, fabrication of custom tray with spacer; Final (functional) impression: border extension of the upper jaw impression, border extension of the lower jaw impression, the procedure of making a functional impression with selective compression (border molding and making the final impression); Beading and boxing of the final (functional) impression, pouring master cast	2
	Exercises: Introductory class with demonstration and practical work of the student: Analysis of structures on working casts, marking the custom tray border with a pencil on the working casts of the upper and lower jaw, fabrication of close-fit custom tray, custom tray trimming with laboratory burs	4
Week 3.	Lectures: Record bases and occlusion rims: cast preparation, record base fabrication procedures with different materials (temporary and definitive bases), fabrication of wax occlusion rims	2
	Exercises: Demonstration: Custom tray with spacer fabrication, functional impression making, beading and boxing of the final (functional) impression, pouring master cast	4
Week 4.	Lectures: Determining maxillomandibular relations in edentulous mouths and transferring master casts to an articulator (preparation of articulators and casts, mounting casts with/without average axis facebow)	2
	Exercises: Introductory class with demonstration and practical work of the student: Fabrication of upper and lower record bases and wax occlusion rims	4
Week 5.	Lectures: Determining the position of the anterior artificial teeth (Class I skeletal): guidelines for proper positioning of upper and lower anterior teeth, selection of teeth size, shape, and color, the procedure of setting up the anterior teeth, the relationship of anterior teeth in a centric relation position	2
	Exercises: Introductory class with demonstration and practical work of the student: Maxillomandibular relationship record, preparing and mounting the master casts on an articulator	4
Week 6.	Lectures: Determining the position of the posterior artificial teeth (Class I skeletal): guidelines for proper preliminary setting of posterior teeth (I phase), selection of posterior teeth, the procedure of setting up the upper and lower posterior teeth, the relationship of posterior teeth in a maximal intercuspation position, complete denture occlusion concepts; Setting of posterior teeth	2
	according to the requirements of balanced occlusion (phase II): principles of balanced occlusion on complete dentures, definitive setting up of posterior teeth (phase II)- achieving balance in propulsion and lateral occlusal position; Wax denture try-in	
	Exercises: Introductory class with demonstration and practical work of the student: Marking of the casts and setting up of the upper and lower anterior teeth	4
Week 7.	Lectures: Final procedures in the fabrication of conventional complete dentures: waxing, flasking, different techniques of preparation, packing, pressing, and polymerization of acrylate, finishing, and polishing of complete dentures; Complete denture delivery	2
	Exercises: Introductory class with demonstration and practical work of the student: Set up of upper and lower posterior teeth, waxing of complete dentures	4

Week 8.	Lectures: Remounting and selective grinding of complete dentures (on articulator); Repairs of complete dentures: base repair, tooth repair, repair procedure; Relining of complete dentures: types of relining, indications, indirect relining procedure Exercises: Introductory class with demonstration: Final procedures in the fabrication of complete dentures, repairs of complete dentures (base repair technique, tooth repair technique), indirect complete denture relining-laboratory procedure	2 4
Week 9.	Lectures: Causes and consequences of partial edentulism, forms, and classification of partial edentulism, bearing tissues of partial dentures, tooth-, mucosa-, and combine-supported dentures, indications for partial dentures, an overview of contemporary materials for fabrication of partial dentures Exercises: Introductory class with demonstration and practical work of the student: Analysis of the cast of a partial edentulous jaw, determination of class of partial edentulism, analysis of the abutment teeth morphology, planning of partial dentures with regard to the possibility of tissue support	2 4
Week 10.	Lectures: Interim partial denture: denture parts and their role, types of wire clasps, basic principles in denture planning, clinical and laboratory procedures of fabrication Exercises: Introductory class with demonstration and practical work of the student: Selection of impression trays, taking an anatomical impression of the upper/lower partial edentulous jaw, and pouring of the upper/lower working cast; Demonstration of custom tray fabrication, and the making of a combined/functional impression for a partial denture	2 4
Week 11.	Lectures: Removable partial denture: denture components (gingival part, dental part, the connection between the gingival and dental part), fundaments of planning, and kinetics Exercises: Introductory class with demonstration and practical work of the student: Fabrication of wire clasp; Demonstration of fabrication of bite rim for an interim partial denture, specifics of tooth selection and setting, preparation of cast for flasking	2 4
Week 12.	Lectures: Dental parallelometer: analysis of the cast in a dental parallelometer, cast position, path of insertion and movement of the denture, finding of the prosthetic equator, measuring of undercuts, denture plan; Fabrication of cast metal removable partial denture: impression and working cast, master cast preparation and duplication, making and hardening of investment cast, wax-up of the removable partial denture, spruing Exercises: Analysis of the upper (lower) Kennedy Class I diagnostic cast, planning the denture construction in a dental parallelometer and drawing the plan on the cast; Analysis of the upper (lower) Kennedy Class II diagnostic cast, planning the denture construction in a dental parallelometer and drawing the plan on the cast; Preparation of abutment teeth on a gypsum cast.	2 4
Week 13.	Lectures: Fabrication of cast metal removable partial denture: investing, preheating, burnout, casting of metal framework, deflasking, finishing, and polishing of cast metal framework, cast metal framework try-in, occlusal rim fabrication, determining maxillomandibular relations, selection and setting up of artificial teeth, trial denture try-in, final waxing, replacement of wax parts with acrylate, denture delivery; Repairs and relining of partial dentures Exercises: Analysis of the upper (lower) Kennedy Class III diagnostic cast, planning the denture construction in a dental parallelometer and drawing the plan on the cast; Analysis of the upper	2 4
	(lower) Kennedy Class IV diagnostic cast, planning the denture construction in a dental parallelometer and drawing the plan on the cast; Preparation of abutment teeth on a gypsum cast.	
Week 14.	Lectures: Immediate denture: definition, advantages, and drawbacks, specifics of fabrication procedures; Overdentures and overdenture retention elements Exercises: Introductory class with demonstration: Preparing and duplicating the master cast, making and hardening the investment cast, wax-up the removable partial denture, spruing	2 4
Week 15.	Lectures: The fabrication of digital removable prosthetic restorations Exercises: Introductory class with demonstration: Making a refractory block and casting of a metal framework, finishing and polishing of cast metal framework, occlusal rim fabrication, replacement of wax denture parts with acrylate	2 4

Week 17.	Final exam	
Week 19.	Corrective exam	

Item code: SFSOM0503E	**Course Title: INTERNAL MEDICINE**		
Cycle: integrated	**Year: III**	**Semester: V**	**Number of ECTS credits:** 8
Status: obligatory		**Total number of hours: 105** **Lectures** 45 **Exercises** 60	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	All students enrolled in the 3th year of study		
Aim (objectives) of the course:	Introduce the student with: the causes that lead to diseases of the internal organs (pulmonary diseases, heart diseases, digestive tract diseases, hepatobiliary tract and pancreas, kidney diseases, diseases of the blood vessels, connective tissue diseases, endocrine diseases and hematological diseases): - pathogenic processes leading to the development of these diseases - clinical manifestations of internal organs disease - rational diagnostics based on physical findings (anamnesis and clinical examination) and targeted diagnostic methods - modern principles of prevention and treatment of internal organs diseases.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Anamnesis (current disease, earlier diseses, personal history, family and social history, epidemiological survey, decursus morbi and epicrisis). Basic methods of physical examination of an internistic patient. General patient status (status praesens). Head and neck examination. 2. Symptomatology and physical examination in cardiac diseases. Diagnostic methods in cardiology. Angina pectoris. Myocardial infarction. Heart rhythm disorders. 3. Arterial hypertension. Myocarditis. Pericarditis. Cardiac insufficiency. Cardiopulmonary resuscitation. 4. Congenital cardiac defects, division into groups. Acquired heart defects. Lecture: Symptoms and signs of connective tissue disease. Diagnostic methods in rheumatology. Chronic rheumatic joint disease. Metabolic diseases of the joints and bones. Systemic connective tissue diseases.		

	5. Symptoms and signs in pulmonary diseases. Diagnostic methods in pulmonology. Typical and atypical inflammations of lower respiratory tract and pulmonary parenchyma with complications 6. Tuberculosis of the lungs. Pulmonary thromboembolism. Chronic obstructive pulmonary disease (COPD). Bronchial asthma. Chronic respiratory insufficiency. Emergency conditions in pulmonology 7. Symptoms and signs of digestive tube diseases, hepatobiliary system and pancreas. Diseases of the esophagus. Ulcer disease. 8. Bleedings in the gastrointestinal system. Bowel diseases Chronic hepatitis (etiology, epidemiology, clinical picture, diagnosis and therapy). Cirrhosis of the liver. Transplantation of the liver. Diseases of gallbladder and biliary system. Pancreatic diseases. 9. Avitaminosis. Pituitary gland diseases. Diseases of neurohypophysis. Diseases of the thyroid gland (hyperthyroidism, hypothyroidism). 10. Parathyroid gland disorders. Diseases of the adrenal glands. Diabetes mellitus (etiology, pathogenesis, clinical picture, diagnosis, therapy). Acute and chronic complications. 11. Symptoms and signs in kidney diseases, physical examination. Diagnostic methods in nephrology. Urinary infections. Pyelonephritis. Glomerulonephritis. Acute renal insufficiency. Chronic renal insufficiency. Dialysis. Transplantation of the kidney. 12. Clinical characteristics of hematologic patients. Diagnostic methods in hematology. Diseases of the erythrocytes. Diseases of the granulocyte blood cell line. Myeloproliferative diseases. Diseases of platelets. Coagulation disorders. Transfusion medicine. 13. Methods of peripheral blood vessel examination, atherosclerosis, peripheral circulation diseases. 14. Tumors of the head and neck. Principles of diagnostics, staging and treatment. Practical exercises: they are conducted by internal medicine sections according to the advertised schedule. 15.
Learning outcomes:	Through the classes of this course, student will overwhelm the following skills, which are needed to know to practically perform (knows how, and does): 1. Take the correct anamnesis of the disease. 2. Apply methods of physical examination of the patient's head and neck 3. Basic thoracic physical examination methods 4. Inspection and palpation of the abdomen 5. Inspection and succussion of lumbar departments 6. Basic physical examination of joints and extremities 7. Interpretation of laboratory analysis of peripheral blood 8. Interpretation of urine analysis Skills that a student needs to know (knows how): 1. Diagnostic methods in pulmonology - spirometry - gas analysis of arterial blood - examination of sputum - PA X-ray image, CT and MRI scans of lungs - bronchoscopy

	- pleural puncture - transthoracic pleura and lung biopsy 2. Diagnostic methods in cardiology - echocardiography - ergometry - holter monitoring - coronarography 3. Diagnostic methods in gastroenterology - esophagogastroscopy - colonoscopy - ultrasound of the liver, bile, bile duct and pancreas - native abdominal X ray image - endoscopic retrograde cholecysto pancreatography - CT and MRI abdomen scans - endoscopic biopsies and liver biopsy 4. Diagnostic methods in endocrinology - endocrine glands ultrasound - X ray imaging of sella turcica - CT and MRI imaging of pituitary gland and glands with internal secretion - hormonal status of the glands with internal secretion - determining the glycemic profile, HbA1c, fructosamine, insulin 5. Diagnostic and therapeutic methods in nephrology - ultrasound of the kidneys and urinary bladder - kidney scintigraphy - doppler analysis of blood vessels of the kidneys - CT and MRI kidney imaging - micturition cystogram - renal biopsy - peritoneal dialysis - hemodialysis - kidney transplantation 6. Diagnostic methods in hematology - sternal puncture and sternal puncture smear layer sampling-bone biopsy - puncture of the lymph node - lymph node biopsy 7. Diagnostic methods in angiology - color-doppler blood vessel analysis - angiography 8. Diagnostic methods in rheumatology - X-ray diagnostics of bones and joints - ultrasound and MRI diagnostics - immunological tests in rheumatology 9. Diagnostic methods in oncology - staging methods of head and neck tumors - principles of chemotherapy and radiotherapy After attending classes, the student should adopt the following attitudes: - Dentist should be familiar with the basic methods of physical internistic examination and diagnostics of the disease. - Integrating data from a history and physical examination with laboratory and radiological findings helps the physician to distinguish certain diseases. - The correct diagnosis determines the type of treatment of the patient, where the decision of the physician could influence the further course of the disease and the quality of life of the patient.

Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Students' knowledge testing will be carried out continuously during the semester and as a final exam. Continuous knowledge testing It includes first and second part of practical exam and first and second part of partial exam. First part of practical exam It includes the assessment of the acquired skills processed through modules 1-17 in the field of head and neck propedeutics, cardiology, rheumatology, pulmonology, gastroenterology. Evaluation of adopted skills is done by fulfilling the tasks previously defined in the checklist. Each task carries the appropriate number of points. The maximum number of points a student can score is 10. In order to pass this exam, the student must score at least 5.5 points. The scored number of points is added to the other points in forming of the final grade. First part of the partial exam It is in a written form, by test with 50 MCQ questions, which examine the knowledge adopted through modules 1-17. The student can score a total of 50 points (1 point for each correct answer to the MCQ question). In order to pass the exam, the student must score at least 27 points on this MCQ test. The scored number of points is added to the other points in forming of the final grade. If the student did not pass the first part partial exam, it has to be retaken on the final exam. Second part of the practical exam It includes the assessment of the acquired skills processed through modules 18-30 in the field of endocrinology, nephrology, hematology, angiology and oncology. Evaluation of adopted skills is done by fulfilling the tasks previously defined in the checklist. Each task carries the appropriate number of points. The maximum number of points a student can score is 10. In order to pass this exam, the student must score at least 5.5 points. The scored number of points is added to the other points in forming of the final grade. Second part of the partial exam It is in a written form, by test with 30 MCQ questions, which examine the knowledge adopted through modules 18-30. The student can score a total of 30 points (1 point for each correct answer to the MCQ question). In order to pass the exam, the student must score at least 16 points on this MCQ test. The scored number of points is added to the other points in forming of the final grade. If the student did not pass the second part partial exam, it has to be retaken on the final exam. Final exam The student passes only the course content that he/she has not passed in previous examinations of knowledge and skills. The condition for taking the written part of the final exam was previously passed the practical part of the exam. From each form of knowledge and skills assessment, a student must score at least 55% of the predicted score for that part of the exam. The number of points scored thus is added to the other points in forming of the final grade. Final grade is formed as follows: 10 (A) - 95-100 points, 9 (B) - 85-94 points, 8 (C) - 75-84 points, 7 (D) - 65 - 74 points, 6 (E) - 55-64 points,

	5 (F) - below 55 points.
Literature:	1. Harrison's Principles of Internal Medicine Publisher McGraw Hill / Medical; **21st edition (March 28, 2022)** 2. Bonow R (ed). Braunswald's Heart Disease: A Textbook of Cardiovascular Medicine. Philadelphia: Saunders; 2011. 3. Rajagopulan S, Dean SM, Mohler ER, Mukhetjee (eds). ; Manual of Vascular Diseases. Philadelphia: Lippincott Williams & Wilkins; 2012. 4. Klippel JH, Dieppe PA. Rheumatology. 6th edition, Mosby International; 2014.

Implementation plan for the course Internal medicine

Week	Form of teaching and curriculum	Number of hours
Week 1	Lecture: Anamnesis (current disease, earlier diseses, personal history, family and social history, epidemiological survey, decursus morbi and epicrisis). Basic methods of physical examination of an internistic patient. General patient status (status praesens). Head and neck examination. Practical exercises: they are conducted by internal medicine sections according to the advertised schedule.	3 4
Week 2	Lecture: Symptomatology and physical examination in cardiac diseases. Diagnostic methods in cardiology. Angina pectoris. Myocardial infarction. Heart rhythm disorders. Practical exercises: they are conducted by internal medicine sections according to the advertised schedule.	3 4
Week 3	Lecture: Arterial hypertension. Myocarditis. Pericarditis. Cardiac insufficiency. Cardiopulmonary resuscitation. Practical exercises: they are conducted by internal medicine sections according to the advertised schedule.	3 4
Week 4	Lecture: Congenital cardiac defects, division into groups. Acquired heart defects. Lecture: Symptoms and signs of connective tissue disease. Diagnostic methods in rheumatology. Chronic rheumatic joint disease. Metabolic diseases of the joints and bones. Systemic connective tissue diseases. Practical exercises: they are conducted by internal medicine sections according to the advertised schedule.	2 1 4
Week 5	Lecture: Symptoms and signs in pulmonary diseases. Diagnostic methods in pulmonology. Typical and atypical inflammations of lower respiratory tract and pulmonary parenchyma with complications. Practical exercises: they are conducted by internal medicine sections according to the advertised schedule	3 4
Week 6	Lecture: Tuberculosis of the lungs. Pulmonary thromboembolism. Chronic obstructive pulmonary disease (COPD). Bronchial asthma. Chronic respiratory insufficiency. Emergency conditions in pulmonology Practical exercises: they are conducted by internal medicine sections according to the advertised schedule.	3 4
Week 7	Lecture: Symptoms and signs of digestive tube diseases, hepatobiliary system and pancreas. Diseases of the esophagus. Ulcer disease. Practical exercises: they are conducted by internal medicine sections according to the advertised schedule.	3 4
Week 8	Lecture: Bleedings in the gastrointestinal system. Bowel diseases Chronic hepatitis (etiology, epidemiology, clinical picture, diagnosis and therapy). Cirrhosis of the liver.	3

	Transplantation of the liver. Diseases of gallbladder and biliary system. Pancreatic diseases. Practical exercises: they are conducted by internal medicine sections according to the advertised schedule.	4
Week 9	Lecture: First part of partial exam Lecture: Avitaminosis. Pituitary gland diseases. Diseases of neurohypophysis. Diseases of the thyroid gland (hyperthyroidism, hypothyroidism). Practical exercises: First part of practical exam	3 4
Week 10	Lecture: Parathyroid gland disorders. Diseases of the adrenal glands. Diabetes mellitus (etiology, pathogenesis, clinical picture, diagnosis, therapy). Acute and chronic complications. Practical exercises: they are conducted by internal medicine sections according to the advertised schedule.	3 4
Week 11	Lecture: Symptoms and signs in kidney diseases, physical examination. Diagnostic methods in nephrology. Urinary infections. Pyelonephritis. Glomerulonephritis. Acute renal insufficiency. Chronic renal insufficiency. Dialysis. Transplantation of the kidney. Practical exercises: they are conducted by internal medicine sections according to the advertised schedule.	3 4
Week 12	Lecture: Clinical characteristics of hematologic patients. Diagnostic methods in hematology. Diseases of the erythrocytes. Diseases of the granulocyte blood cell line. Myeloproliferative diseases. Diseases of platelets. Coagulation disorders. Transfusion medicine. Practical exercises: they are conducted by internal medicine sections according to the advertised schedule.	3 4
Week 13	Lecture: Methods of peripheral blood vessel examination, atherosclerosis, peripheral circulation diseases. Practical exercises: they are conducted by internal medicine sections according to the advertised schedule.	3 4
Week 14	Lecture: Tumors of the head and neck. Principles of diagnostics, staging and treatment. Practical exercises: they are conducted by internal medicine sections according to the advertised schedule.	3 4
Week 15	Lecture: Second part of partial exam Practical exercises: second part of practical exam	3 4
Week 17	Final exam (Oral exam)	
Week 19	Makeup exam date for students who have not passed the final exam	

Item code: SFSOM0504E	**Course Title: BASICS OF RADIOLOGY**		
Cycle: integrated	**Year: III**	**Semester: V**	**Number of ECTS credits:** 4
Status: obligatory		**Total number of hours: 75** **Lectures** 45 **Exercises** 30	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs /**		
Prerequisite for enrollment:	All students enrolled in the 3th year of study		
Aim (objectives) of the course:	Introduce third year students within the course content about the basics of special or clinical radiology with the radiological presentation of individual diseases of the central nervous system, neck, thorax, abdomen,		

	urogenital tract and musculoskeletal system and algorithms of diagnostic methods in certain diseases of the mentioned systems.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Central and peripheral nervous system: examination methods, examination algorithm, central nervous system (CNS) diseases 2. Spine and neck diseases: methods of examination, examination algorithm, spine and neck diseases from the base of the skull to the upper thoracic aperture and along the spine 3. Respiratory system: criteria for satisfactory X-ray imaging, appearance of normal thorax structure, examination methods, examination algorithms, pulmonary segments, pulmonary diseases (malignant, inflammatory and interstitial, circulatory). 4. Respiratory system: criteria for satisfactory X-ray imaging, appearance of normal thorax structure, examination methods, examination algorithms, pulmonary segments, pulmonary diseases (malignant, inflammatory and interstitial, circulatory). 5. Cardiovascular system: examination methods, cardiac diascopy, teleradiography, cardiac angiocardiography, ultrasound, MSCT, MRI, PET, SPECT, congenital heart disease and diseases of large blood vessels, acquired heart diseases 6. Cardiovascular system: examination methods, cardiac diascopy, teleradiography, cardiac angiocardiography, ultrasound, MSCT, MRI, PET, SPECT, congenital heart disease and diseases of large blood vessels, acquired heart diseases 7. Mediastinal diseases: methods of examination of classical and digital radiography, mediastinal diseases (inflammatory, congenital and malignant). 8. Gastrointestinal tract diseases, examination methods, radioscopy, radiography, double contrast technique, x-ray examination of the esophagus and gastroduodenum, parietography, pneumoperitoneum, hypotonisation, examination of the duodenal flexure, passage of the intestines, pharmacological passage, examination of the small intestine with the probe. Diseases of the esophagus, gastric diseases, duodenal diseases, malabsorption diseases. Small intestine: anomalies, regional enteritis, other diseases of the small intestine, small intestine neoplasms. X-ray imaging of acute abdomen, ultrasound and CT imaging of acute abdomen. Colon: colon anomalies, length anomalies, position changes, colonic hernias, colonic inflammation, ulcerative colitis, diverticular colon, papillary lesions, colon malignancies, rare colony lesions. Postoperative conditions: esophagectomy, stomach and small intestine surgery procedures, colon surgery. Arteriography, splenoportography, CT and MRI imaging examinations of the digestive tract. Examination algorithms, interventional procedures. 9. Gastrointestinal tract diseases, examination methods, radioscopy, radiography, double contrast technique, x-ray examination of the esophagus and gastroduodenum, parietography, pneumoperitoneum, hypotonisation, examination of the duodenal flexure, passage of the intestines, pharmacological passage, examination of the small intestine with the probe. Diseases of the esophagus, gastric diseases, duodenal diseases, malabsorption diseases. Small intestine: anomalies, regional enteritis, other diseases of the small intestine, small intestine neoplasms. X-ray imaging of acute abdomen, ultrasound and CT imaging of acute abdomen. Colon: colon anomalies, length anomalies, position changes, colonic hernias, colonic inflammation, ulcerative colitis, diverticular colon,

	papillary lesions, colon malignancies, rare colony lesions. Postoperative conditions: esophagectomy, stomach and small intestine surgery procedures, colon surgery. Arteriography, splenoportography, CT and MRI imaging examinations of the digestive tract. Examination algorithms, interventional procedures. 10. Diagnostics of hepatopancreatobiliary system with spleen, utilities of available methods of examination: classical; native and contrasting, digital (ultrasound, CT, MRI, DSA), invasive and interventional. Diseases of the liver, pancreas, biliary tract, and spleen: congenital, acquired - vascular diseases, inflammatory, tumors, trauma. Biliary tract - congenital anomalies, acquired diseases - cholelithiasis, choledocholithiasis, inflammatory diseases, tumors, cholecystosis and dyskinesia. 11. Diagnostics of hepatopancreatobiliary system with spleen, utilities of available methods of examination: classical; native and contrasting, digital (ultrasound, CT, MRI, DSA), invasive and interventional. Diseases of the liver, pancreas, biliary tract, and spleen: congenital, acquired - vascular diseases, inflammatory, tumors, trauma. Biliary tract - congenital anomalies, acquired diseases - cholelithiasis, choledocholithiasis, inflammatory diseases, tumors, cholecystosis and dyskinesia. 12. Urinary system and adrenal glands: classical and digital methods of radiologic examination, congenital anomalies, calculosis, urinary tract infections, kidney tumors, urinary tract trauma, urinary bladder and adrenal glands 13. Reproductive system: Female and male pelvis, inflammations, congenital anomalies, malignant diseases, breast diseases 14. Musculoskeletal diagnostics, available methods of examination, classic X-ray imaging: native, standard and special imaging, contrast methods, digital radiological methods, interventional radiological methods. Algorithm of radiological diagnostic examinations, interventional radiological methods. Inflammatory processes on bones: Xray, tomography (TMG), CT, MRI. Spine: degenerative diseases, fistulography, scintigraphy, xeroradiography, Xray, TMG, CT, CT biopsy, MRI. Tumor processes: X-ray, CT, MRI, scintigraphy, angiography, ultrasound, CT biopsy, pathological vascularization. Trauma: X-ray, TMG, arteriography, MRI and MRA, CT and CTA, ultrasound. Degenerative bone processes: X-ray, CT, MRI, osteodensitometry, TMG, xeroradiography, aortography, myography. Coxarthrosis. Metabolic and hormonal processes on bones: X-ray, osteodensitometry, CT, ultrasound, MRI. Osteomalacia of hip. Vascular processes on blood vessels of the extremities: angiography, phlebography, CT, MRI, intervention procedures. Congenital anomalies of the bone system: X-ray, CT, MRI, spina bifida. 15. Musculoskeletal diagnostics, available methods of examination, classic X-ray imaging: native, standard and special imaging, contrast methods, digital radiological methods, interventional radiological methods. Algorithm of radiological diagnostic examinations, interventional radiological methods. Inflammatory processes on bones: Xray, tomography (TMG), CT, MRI. Spine: degenerative diseases, fistulography, scintigraphy, xeroradiography, Xray, TMG, CT, CT biopsy, MRI. Tumor processes: X-ray, CT, MRI, scintigraphy, angiography, ultrasound, CT biopsy, pathological vascularization. Trauma: X-ray, TMG, arteriography, MRI and MRA, CT and CTA, ultrasound. Degenerative bone processes: X-ray, CT, MRI, osteodensitometry, TMG, xeroradiography, aortography, myography. Coxarthrosis. Metabolic and hormonal processes on bones: X-ray,

	osteodensitometry, CT, ultrasound, MRI. Osteomalacia of hip. Vascular processes on blood vessels of the extremities: angiography, phlebography, CT, MRI, intervention procedures. Congenital anomalies of the bone system: X-ray, CT, MRI, spina bifida.
Learning outcomes:	Through this course students will adopt the following knowledge: - introduce students to the definition, division and location of clinical radiology, the importance of laboratory and clinics in classical and digital imaging techniques, and their advantages and disadvantages. -student will receives information on radiography of the central nervous system, skeleton, diascopy and radiographs of the lungs and hearts, digestive tract radiologic searches, and special radiological methods, as well as contrast radiographs of other areas where contrast media are used, with basic information on contrast media, digital and interventional techniques, and anesthesia in radiology. -student will know how to use radiological protection, with units used in radiology for the evaluation of radiation effects, and legal regulations essential for the professional protection of persons exposed to radioactive radiation and patients. The skills that the student should adopt and be able to practically perform: 1. Description of the organization, structure and equipment of the Institute 2. Identification of radiological equipment (classical and digital equipment) 3. Identification of photographic material (film, cassette, chamber, dry view laser imager system). 4. Differentiation of protective agents in radiology. 5. Identification and description of the thoracic radiography and native abdominal radiography, skeleton radiography and special recordings (classic tomography, tomosynthesis, mammography, xeroradiography, seriography, X-ray cinematography). 6. Perform radioscopy of thoracic organs. 7. Performing contrast radiological tests (angiography, esophageal and gastroduodenal passage, myelography, hysterosalpingography). 8. Perform a digital method examination 9. Performing emergency procedures in radiology.
Teaching methods:	Interactive lectures Practical exercises Seminars
Assessment methods with assessment structure:	Methods of student knowledge assessment: Regular attendance in the classes - 5 points Continuous assessment of knowledge during lectures and on practical exercises Seminars - 10 points Oral exam or written test Oral exam - 5 questions (answer to 3 questions and partially on the others = 6; answer to 4 questions and partially to the others = 7-9; answer to 5 questions = 8- 10) With seminar and regular attendance at lectures. Written test - 20 questions (answer to 12 questions and partial answer to other questions = 6; answer to 13-16 questions and partial to other

	questions = 7-8; answer 16-18 questions and partial to other = 9; answer to 18-20 questions = 10). With seminar and regular attendance at lectures. Final grade is formed as follows: 10 (A) - 95-100 points, 9 (B) - 85-94 points, 8 (C) - 75-84 points, 7 (D) - 65 - 74 points, 6 (E) - 55-64 points, 5 (F) - below 55 points.
Literature:	1. Gunderman R. Essential Radiology, Clinical Presentation, Pathophysiology, Imaging. Thieme; 2006. 2. Richardson M. Fundamentals of Diagnostic Radiology. Baltimore: Williams&Wilkins; 2003.

Implementation plan for the course Basics of radiology

Week	Form of teaching and curriculum	Number of hours
Week 1	Lecture: Central and peripheral nervous system: examination methods, examination algorithm, central nervous system (CNS) diseases Practical exercises: Introduction with the standard and digital radiologic techniques of the CNS examination Seminars	3 2
Week 2	Lecture: Spine and neck diseases: methods of examination, examination algorithm, spine and neck diseases from the base of the skull to the upper thoracic aperture and along the spine Practical exercises: Introduction with standard and digital radiologic techniques for examining the neck and its structures Seminars	3 2
Week 3	Lecture: Respiratory system: criteria for satisfactory X-ray imaging, appearance of normal thorax structure, examination methods, examination algorithms, pulmonary segments, pulmonary diseases (malignant, inflammatory and interstitial, circulatory). Practical exercises: Radioscopy of the thoracic organs, radiography, digital radiologic methods of pulmonary disease examination Seminars	3 2
Week 4	Lecture: Respiratory system: criteria for satisfactory X-ray imaging, appearance of normal thorax structure, examination methods, examination algorithms, pulmonary segments, pulmonary diseases (malignant, inflammatory and interstitial, circulatory). Practical exercises: Radioscopy of the thoracic organs, radiography, digital radiologic methods of pulmonary disease examination Seminars	3 2
Week 5	Lecture: Cardiovascular system: examination methods, cardiac diascopy, teleradiography, cardiac angiocardiography, ultrasound, MSCT, MRI, PET, SPECT, congenital heart disease and diseases of large blood vessels, acquired heart diseases Practical exercises: Presentation of images and methods of examination of the cardiovascular system (classical TMG, radiophotography, mammography, xeroradiography, seriography, X-ray imaging, sialography, CT, MRI, ultrasound). Seminars	3 2
Week 6	Lecture: Cardiovascular system: examination methods, cardiac diascopy, teleradiography, cardiac	3

	angiocardiography, ultrasound, MSCT, MRI, PET, SPECT, congenital heart disease and diseases of large blood vessels, acquired heart diseases Practical exercises: Presentation of images and methods of examination of the cardiovascular system (classical TMG, radiophotography, mammography, xeroradiography, seriography, X-ray imaging, sialography, CT, MRI, ultrasound). Seminars	2
Week 7	Lecture: Mediastinal diseases: methods of examination of classical and digital radiography, mediastinal diseases (inflammatory, congenital and malignant). Practical exercises: Presentation of mediastinal diseases with radiological, ultrasound, CT and MRI images and angiographic examinations. Examination algorithms and intervention procedures. Seminars	3 2
Week 8	Lecture: Gastrointestinal tract diseases, examination methods, radioscopy, radiography, double contrast technique, x-ray examination of the esophagus and gastroduodenum, parietography, pneumoperitoneum, hypotonisation, examination of the duodenal flexure, passage of the intestines, pharmacological passage, examination of the small intestine with the probe. Diseases of the esophagus, gastric diseases, duodenal diseases, malabsorption diseases. Small intestine: anomalies, regional enteritis, other diseases of the small intestine, small intestine neoplasms. X-ray imaging of acute abdomen, ultrasound and CT imaging of acute abdomen. Colon: colon anomalies, length anomalies, position changes, colonic hernias, colonic inflammation, ulcerative colitis, diverticular colon, papillary lesions, colon malignancies, rare colony lesions. Postoperative conditions: esophagectomy, stomach and small intestine surgery procedures, colon surgery. Arteriography, splenoportography, CT and MRI imaging examinations of the digestive tract. Examination algorithms, interventional procedures. Practical exercises: Presentation of gastrointestinal tract diseases with radiological, ultrasound, CT and MRI images and angiographic examination. Examination algorithms and intervention procedures. Seminars	3 2
Week 9	Lecture: Gastrointestinal tract diseases, examination methods, radioscopy, radiography, double contrast technique, x-ray examination of the esophagus and gastroduodenum, parietography, pneumoperitoneum, hypotonisation, examination of the duodenal flexure, passage of the intestines, pharmacological passage, examination of the small intestine with the probe. Diseases of the esophagus, gastric diseases, duodenal diseases, malabsorption diseases. Small intestine: anomalies, regional enteritis, other diseases of the small intestine, small intestine neoplasms. X-ray imaging of acute abdomen, ultrasound and CT imaging of acute abdomen. Colon: colon anomalies, length anomalies, position changes, colonic hernias, colonic inflammation, ulcerative colitis, diverticular colon, papillary lesions, colon malignancies, rare colony lesions. Postoperative conditions: esophagectomy, stomach and small intestine surgery procedures, colon surgery. Arteriography, splenoportography, CT and MRI imaging examinations of the digestive tract. Examination algorithms, interventional procedures. Practical exercises: Presentation of gastrointestinal tract diseases with radiological, ultrasound, CT and MRI images and angiographic examination. Examination algorithms and intervention procedures. Seminars	3 2
Week 10	Lecture: Diagnostics of hepatopancreatobiliary system with spleen, utilities of available methods of examination: classical; native and contrasting, digital (ultrasound, CT, MRI, DSA), invasive and interventional. Diseases of the liver, pancreas, biliary tract, and spleen: congenital, acquired - vascular diseases, inflammatory, tumors, trauma. Biliary tract - congenital anomalies, acquired diseases - cholelithiasis, choledocholithiasis, inflammatory diseases, tumors, cholecystosis and dyskinesia. Practical exercises: Presentation of pathological conditions on the hepatopancreatobiliary tract, spleen, urogenital and reproductive tract with breast pathology.	3 2

	Seminars	
Week 11	Lecture: Diagnostics of hepatopancreatobiliary system with spleen, utilities of available methods of examination: classical; native and contrasting, digital (ultrasound, CT, MRI, DSA), invasive and interventional. Diseases of the liver, pancreas, biliary tract, and spleen: congenital, acquired - vascular diseases, inflammatory, tumors, trauma. Biliary tract - congenital anomalies, acquired diseases - cholelithiasis, choledocholithiasis, inflammatory diseases, tumors, cholecystosis and dyskinesia. Practical exercises: Presentation of pathological conditions on the hepatopancreatobiliary tract, spleen, urogenital and reproductive tract with breast pathology. Seminars	3 2
Week 12	Lecture: Urinary system and adrenal glands: classical and digital methods of radiologic examination, congenital anomalies, calculosis, urinary tract infections, kidney tumors, urinary tract trauma, urinary bladder and adrenal glands Practical exercises: Imaging presentation of pathological conditions on the urinary tract from the area of the kidneys, urinary bladder, adrenal glands. Seminars	3 2
Week 13	Lecture: Reproductive system: Female and male pelvis, inflammations, congenital anomalies, malignant diseases, breast diseases Practical exercises: Presentation of reproductive system diseases with radiological, ultrasound, CT and MRI images and angiographic examination. Examination algorithms and intervention procedures. Seminars	3 2
Week 14	Lecture: Musculoskeletal diagnostics, available methods of examination, classic X-ray imaging: native, standard and special imaging, contrast methods, digital radiological methods, interventional radiological methods. Algorithm of radiological diagnostic examinations, interventional radiological methods. Inflammatory processes on bones: Xray, tomography (TMG), CT, MRI. Spine: degenerative diseases, fistulography, scintigraphy, xeroradiography, Xray, TMG, CT, CT biopsy, MRI. Tumor processes: X-ray, CT, MRI, scintigraphy, angiography, ultrasound, CT biopsy, pathological vascularization. Trauma: X-ray, TMG, arteriography, MRI and MRA, CT and CTA, ultrasound. Degenerative bone processes: X-ray, CT, MRI, osteodensitometry, TMG, xeroradiography, aortography, myography. Coxarthrosis. Metabolic and hormonal processes on bones: X-ray, osteodensitometry, CT, ultrasound, MRI. Osteomalacia of hip. Vascular processes on blood vessels of the extremities: angiography, phlebography, CT, MRI, intervention procedures. Congenital anomalies of the bone system: X-ray, CT, MRI, spina bifida. Practical exercises: Presentation of diseases of the musculoskeletal system with radiological imaging, X-ray, ultrasound, CT, MRI, angiography, examination algorithms and intervention procedures. Seminars	3 2
Week 15	Lecture: Musculoskeletal diagnostics, available methods of examination, classic X-ray imaging: native, standard and special imaging, contrast methods, digital radiological methods, interventional radiological methods. Algorithm of radiological diagnostic examinations, interventional radiological methods. Inflammatory processes on bones: Xray, tomography (TMG), CT, MRI. Spine: degenerative diseases, fistulography, scintigraphy, xeroradiography, Xray, TMG, CT, CT biopsy, MRI. Tumor processes: X-ray, CT, MRI, scintigraphy, angiography, ultrasound, CT biopsy, pathological vascularization. Trauma: X-ray, TMG, arteriography, MRI and MRA, CT and CTA, ultrasound. Degenerative bone processes: X-ray, CT, MRI, osteodensitometry, TMG, xeroradiography, aortography, myography. Coxarthrosis. Metabolic and hormonal processes on bones: X-ray, osteodensitometry, CT, ultrasound, MRI. Osteomalacia of hip. Vascular processes on blood vessels of the extremities: angiography, phlebography, CT, MRI, intervention procedures. Congenital anomalies of the bone system: X-ray, CT, MRI, spina bifida.	3

	Practical exercises: Presentation of diseases of the musculoskeletal system with radiological imaging, X-ray, ultrasound, CT, MRI, angiography, examination algorithms and intervention procedures. Seminars	2
Week 17	Final exam (Oral exam)	
Week 19	Makeup exam date for students who have not passed the final exam	

Item code: SFSOM0506E	**Course Title : Anesthesiology and resuscitation**		
Cycle: Integrated	**Year : III**	**Semestar: V**	**Number of ECTS credits: 3**
Status: Obligatory		**Total number of hours: 30** **Lectures: 15** **Exercises: 15**	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	All students enrolled in the 3rd year of study		
Aim (objectives) of the course:	Students should: -understand the procedure of preoperative preparation of the patient for anesthesia and surgical procedures with the aim of reducing the risk of complications -acquire the knowledge and skills necessary for basic and advanced life support including establishing and maintaining an airway and breathing, venous access and basic monitoring of vital functions -acquire knowledge about pharmacological therapy in anesthesiology and resuscitation -recognize risk factors that can affect the performance of anesthesiology procedures		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units were formed with the aim that the student learns the basic knowledge about: -Preoperative preparation and premedication -Anesthesiology procedure -Medicines in anesthesiology -Basic principles of monitoring -Reanimation of children and newborns, resuscitation of pregnant women - Possible complications of general anesthesia - Procedures for maintaining the airway -Principles of mechanical ventilation -Advanced life support and post-resuscitation syndrome -Intensive medicine in surgical patients -Electrolyte disturbance, volume replacement and blood products -Hospital infections; Sepsis and MOF -The influence of anesthesia on organic systems -Regional anesthesia and local anesthetics		
Learning outcomes:	Students will master the following: -state and explain the procedures of preoperative patient preparation		

	- recognize the risk of preoperative complications -list the types of anesthesia and their indications and contraindications -state the techniques of performing general and regional anesthesia -list the properties of drugs used in anesthesiology that are including analgesics, anesthetics, muscle relaxants, antidotes, vasporessors and inotropes, infusion solutions, blood products and others -list all methods of monitoring vital functions used during the anesthetic procedure and in the intensive care unit Skills: -establish basic supervision of the patient -independently establish peripheral venous route -list basic and advanced life support procedures -independently carryout basic life support procedures -state the ways of caring for a circulatoryally unstable patient Competencies: -define sepsis list the causes and methods of treatment -define shock and list different types of shock and treatments -define respiratory failure, ARDS and describe the principles and indication for mechanical ventilation -describe the principles of gas delivery for anesthesia procedures -list all techniques for establishing and maintaining the airway
Teaching methods:	Teaching is conducted in the for of: - lectures - exercises – groups of 6-8 students Teaching methods: Interactive, theoretical and practical teaching
Assessment methods with assessment structure :	The student´s knowledge will be tested throughout the semester and at the final exam. All parts of the exam will be covered by the evaluation. Continuous of knowledge includes partial exam 1 and 2 in the 7th and 15th week of classes, and a practical exam that is taken at the end of the semester. A student is considered to have past the partial exam if he has achieved the minimum number of points for passing (55 points out of 100). Failed parts of the exam will be evaluated on the final exam. A student who passes partial 1 and 2 is required to pass the practical part of the exam in order to gain the right to final grade. Attendance and activity in class - 5 points, partial exam 1 – 40 points, partial exam 2 – 40 points, practical part of the exam – 15 points. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: S. Mihaljević and associates. „Anesthesiology, resuscitation and intensive tretment of surgical patients“ textbook, Zagreb, Medical publishing house, 2023. Supplementary: J. Butterworth and associates „Morgan and Mikhail's Clinical Anesthesiology, 7th Edition“, textbook, McGraw Hill, 2022. P. L. Marino „Marino's ICU Book“, textbook, LWW, 2014

Item code: SFSOS3051E	**Course Title: PRECLINICAL RESTORATIVE DENTISTRY I**		
Cycle: integrated	**Year: III**	**Semester: V**	**Number of ECTS credits:** 4
Status: obligatory		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 1 (15) **Exercises 2** (30)	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**
Prerequisite for enrollment:	All students enrolled in the 3th year of study
Aim (objectives) of the course:	Students will acquire basic knowledge encompassing work place and instruments, diagnostics and treatment planning, work field isolation and basic and contemporary principles of cavity preparation.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Work place and instruments 2. Diagnostics and treatment planning, 3. Work field isolation 4. Basic and contemporary principles of cavity preparation.
Learning outcomes:	The goal of preclinical practicals is to prepare a student for future work with patients. Therefore, students will acquire basic knowledge encompassing work place and instruments, diagnostics and treatment planning, work field isolation. Students are performing all types of cavity preparations on models of teeth on the phantom..
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Acquired knowledge is assessed through partial assessment and final exam. The partial knowledge test carries a maximum of 30 points, for a test to be scored, it must contain a minimum of 17points. Through a practical exam, the application of instruments and the preparation of cavities on the phantom are evaluated and it carrries a total of 20 points. At the final exam the student must achieve a minimum of 55% correct answers. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Živković i saradnici. Osnove restaurativne stomatologije. Data Status, Beograd 2009 2. Šutalo i saradnici. Patologija I terapija tvrdih zubnih tkiva. Naklada Zadro, Zagreb, 1994 3. Karadžov I saradnici. Preparacija kaviteta. Grifon, Beograd, 1999 Additional:

	1. Mount GJ, Hume WR. Preservation and restoration of tooth structure. Mosby International Ltd. 1998. 2. Summit JB, Robbins JW, Hilton TJ, Schwartz RS. Fundamentals of operative dentistry: a contemporary approach: Quintessence Publishing Co Inc, 2013.

Course syllabus

Week	Teaching and learning methods	Number of hours
Week 1.	Lecture: Introduction. Tooth Nomenclature. Tooth numbering systems. Practicals: Introduction	1 2
Week 2.	Lecture: Dental workplace elements and organization. Operator position. Practicals: Tooth numbering systems.	1 2
Week 3.	Lecture: Hand instruments in restorative procedures. Practicals: Introduction with dental simulated working place (Phantom) and operator position.	1 2
Week 4.	Lecture: Rotary instruments Practicals: working with hand instruments	1 2
Week 5.	Lecture: Basic principles of cavity preparation (Black's principles) practicals: working with rotary instruments (burrs)	1 2
Week 6.	Lecture: Class I cavity preparation (Black's principles)- instructions. practicals: Rotary instruments in restorative procedures.	1 2
Week 7.	Partial exam	1 2
Week 8.	Lecture: Class II cavity preparation (Black's principles)- instructions. practicals: Class I cavity preparation for amalgam, on phantom's tooth.	1 2
Week 9.	Lecture: Class V cavity preparation (Black's principles)- instructions. practicals: Class II cavity preparation for amalgam, on phantom's tooth	1 2
Week 10.	Lecture: Contemporary principles of cavity preparation. Adhesive cavities. Special preclinical practicals: Class V cavity preparation for amalgam, on phantom's tooth	1 2
Week 11.	Lecture: Class I and II cavity preparation instructions (adhesive cavities). Special preclinical practicals: Specific class I cavity preparation on phantom' tooth	1 2
Week 12.	Lecture: Class V cavity preparation instructions (adhesive cavities). Special preclinical practicals: Class I preparation for composite, on phantom's tooth	1 2
Week 13.	Lecture: Class III and IV cavity preparation instructions (adhesive cavities) practicals: Class II preparation for composite, on phantom's tooth	1 2
Week 14.	Lecture: Indirect restaurations (Inlay, onlay, overlay). practicals: Class III preparation for composite, on phantom's tooth	1 2
Week 15.	Lecture: Interactive repetition practicals: Practical exam	1 2
Week 17.	Final Exam / Remedial	
Week 19.	Remedial	

Item code SFSOS3061E	**Course Title: PRECLINICAL AND LABORATORY FIXED PROSTHODONTICS**		
Cycle: Integrated	**Year: III**	**Semester: VI**	**Number of ECTS 4**
Status: Obligatory		**Total number of hours: 90 (30+60)** Lectures 30 Exercises 60	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** **Department of Prosthodontics with Dental Implantology**
Prerequisite for enrollment:	All students enrolled in the 3rd year of study
Aim (objectives) of the course:	Acquisition of theoretical and practical knowledge about the technique and technology of making fixed dental restorations.
Thematic units: (If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)	1. Types of fixed prosthetic restorations. Indications. 2. Crowns and dental bridges - types of crowns and bridges 3. Indications and contraindications for making fixed prosthetic works. 4. Tooth preparations. 5. Impression techniques in fixed prosthetics, conventional and digital. 6. Creation of conventional and digital working model. 7. Techniques of bite transfer to analog and digital articulator. 8. Procedure of conventional and digital crown modeling. 9. Investing in refractory mass. Casting fixed restorations. 10. Processing and polishing of cast fixed restorations. 11. The procedure for making metal and metal-free fixed restorations with a CAD/CAM milling machine from different dental materials - part 1. 12. The procedure for making metal and metal-free fixed restorations with a CAD/CAM milling machine from different dental materials - part 2. 13. Applying esthetic material. 14. Preparation of the root canal for the production of post and core. 15. Specifics of laboratory production of implant prosthetic structures.
Learning outcomes:	Knowledge: 1. Know the instruments and equipment in the laboratory for fixed prosthetics. 2. Know the complete procedure of laboratory production of fixed prosthetic restorations through the use of equipment and materials. 3. Know the procedure for investing fixed prosthetic restorations in the investment mass. 4. Know the procedure for casting fixed prosthetic restorations. 5. Know the procedure for processing fixed prosthetic restorations. 6. Know the procedure for ceramic layering technique. 7. Know the procedure for scanning models and impressions and designing prosthetic restorations with CAD / CAM system. 8. Know the procedure of 3D printing Skills:

	1. Select instruments, equipment and materials for laboratory production of fixed prosthetic restorations. 2. Cast working model. 3. Prepare a working model independently. 4. Mount working models in the dental articulator. 5. Model in wax - crown and bridge full anatomical shape, substructure for crown and bridge, cut-back shape for crown and dowel core. Competences: 1. To be fully acquainted with preclinical procedures for the production of fixed prosthetic restorations rations by stages of production. 2. Independently recognize errors that occur during improper production of fixed prosthetic restorations. 3. Know the importance of communication between the laboratory and the dentist in the office.
Teaching methods:	- lectures for all students - practical classes - exercises in groups according to the standard
Assessment methods with assessment structure:	The acquired knowledge and skills are tested continually during the semester. In the structure of the total number of points, the student can achieve for activities and knowledge tests: - exercise activity - maximum 10 points, minimum 6 points - partial exam (in the form of a test from 8-10 weeks of the semester) - maximum 40 points, minimum 22 points - final exam - maximum 50 points, minimum 27,5 points. The final exam consists of practical and theoretical (in the form of a test) part of the exam. The student takes the practical part of the exam in the 15th week of classes as part of practical exercises. The condition for taking the final exam is passing the practical part of the exam. The passed practical part of the exam is valid for one academic year. Tests for the partial and final exams are compiled for each exam period and are divided into groups A, B (if necessary, C, D). The partial and final exam can only be scored if each test has at least 55% correct answers. All questions in the test do not have to be evaluated with the same number of points. The decision on the method of scoring questions from the test is made by subject teachers before the test is administered. A student who did not pass the partial knowledge test takes the entire material - integrally on the final exam. The passing score level on the exam is 55%. In accordance with the above, the grade scale is as follows: - 10(A) - exceptional success without errors or with insignificant errors - 95-100 points - 9(B) - above average with few errors- 85-94 points; - 8 (C) - average with noticeable errors - 75 -84 points; - 7(D) - generally good but with significant errors- 65-74 points; - 6(E) - meets the minimum criteria - 55-64 points; - 5 (F, FX) – does not meet the minimum criteria, less than 55 points.

Literature:	Mandatory: 1. Schillinburg TH, Sather DA, Wilson EL, Cain JR, Mitchell DL, Blanco JL, Kessler JC. Fundamentals of Fixed Prosthodontics, 4th edition. Quintessence Publishing Co, Inc; 2012. 2. Rosenstiel SF, Land MF, Fujimoto J. Contemporary fixed prosthodontics, 5th edition. Elsevier, 2015. 3. Ferencz JL, Silva NRFA. Fundamentals of CAD/CAM dentistry, 1th edition. American College of Prosthodontists; 2019.

COURSE SYLLABUS: PRECLINICAL AND LABORATORY FIXED PROSTHODONTICS

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lectures, exercises)
Week 1.	Lecture: Types of fixed prosthetic restorations. Indications for making fixed prosthetic works - crowns, bridges and post and cores. Practical classes: Introductory class – Demonstration of tooth preparation and introduction with equipment and materials. Student's work - Taking an alginate impression of the antagonist's teeth and pouring out working model of the antagonist's teeth.	2 4
Week 2.	Lecture: Crowns and dental bridges - types of bridges, parts of the bridge. Dental bridge anchors. Body of the bridge and relationship to the gingiva. Practical classes: Introductory Class – Demonstration of casting a working model from a definitive impression. Student work - Pouring a working model from a definitive impression.	2 4
Week 3.	Lecture: Indications and contraindications for making fixed prosthetic restorations: crowns, bridges and post and cores. Practical classes: Introductory class – Demonstration of preparation for mounting in an articulator, making a split cast model. Student's work - Preparation for mounting in an articulator, making a split cast model.	2 4
Week 4.	Lecture: Tooth preparations. Burs for preparation. Principles of tooth preparation. The shape of the marginal preparation and its relation to the soft tissues. Preparation errors. Practical classes: Introductory class - Demonstration of mounting working models in the articulator without a standard facebow and with a facebow with the help of a portable table. Student's work - Mounting working models in the articulator.	2 4
Week 5.	Lecture: Impression techniques in fixed prosthetics, conventional and digital. Registration of intermaxillary relation, conventionally and digitally. Practical classes: Introductory class -Demonstration of making a movable working model, processing and marking the preparation margine. Student work - cutting movable working models, processing movable working models and marking the preparation margine.	2 4

Week 6.	Lecture: Laboratory scanning procedure. Creation of a conventional working model by casting in plaster, a digital working model by 3D printing and CAD/CAM milling. Practical classes: Introductory class - Modeling a crown in a full anatomy shape and modeling it in a CUT-BACK shape. Student's work - Modeling of a crown with in a full anatomy shape.	2 4
Week 7.	Lecture: Analog and digital articulators. Bite transfer techniques to analog and digital articulator. Digital overlay. Processing of special working models. Marking of the preparation margine, applying distance varnish. Practical classes: Student's work - Completing the modeling of the crown in a full anatomy shape and modeling it in a CUT-BACK shape.	2 4
Week 8.	Lecture: Procedure of conventional and digital crown modeling. Instrumentation for modeling and digital tools for modeling crowns and bridges in full anatomical form, reduced form, cut back form and substructures. The procedure for making models of fixed restorations with a CAD/CAM milling machine in PMMA material. Practical classes: Introductory class – Modeling of the substructure for a dental bridge. Student work - Modeling the substructure for a dental bridge.	2 4
Week 9.	Lecture: Preparation of models of fixed restorations, obtained by conventional and digital manufacturing methods, for investment in refractory mass. Specifics in investment, elimination of wax and casting of substructures of fixed dental alloy restorations. Casting of fixed restorations from ceramic material. Practical classes: Student's work - Completing the modeling of the substructure for the dental bridge.	2 4
Week 10.	Lecture: Processing and polishing of cast fixed restorations. Practical classes: Demonstration - Digital modeling and digital modeling tools. The procedure for making models of fixed restorations with a CAD/CAM milling machine in PMMA material.	2 4
Week 11.	Lecture: The procedure for making metal and metal-free fixed restorations with a CAD/CAM milling machine. Types of CAD/CAM milling machines, types of blocks and discs of different dental materials from which fixed prosthetic restorations are made. Practical classes: Demonstration - Preparation and procedure of investment in refractory mass and casting of models of fixed prosthetic work. Processing and polishing of cast fixed restorations.	2 4
Week 12.	Lecture: The procedure for making metal and metal-free fixed restorations with a CAD/CAM milling machine. Types of CAD/CAM milling machines, types of blocks and discs of different dental materials from which fixed prosthetic restorations are made. Practical classes: Demonstration - The process of making metal and metal-free fixed restorations with a CAD/CAM milling machine from different dental materials.	2 4
Week 13.	Lecture: Layering of esthetic material to substructures, reduced shapes, CUT-BACK shapes. Arrangement of effects, individualization (characterization) of fixed prosthetic works. Practical classes: Demonstration - Applying esthetic material to substructures, reduced shapes, CUT-BACK shapes. Arrangement of effects, individualization (characterization) of fixed prosthetic works.	2 4
Week 14.	Lecture: Preparation of the root canal for the production of post and core. Production of a post and core. Practical classes: Demonstration - Production of a post and core.	2 4
Week 15.	Lecture: Specifics of laboratory production of implant-supported prosthetic restorations.	2 4

	Practical classes: Demonstration - Laboratory production of implant-supported prosthetic restorations.	
Week 17.	Final exam	
Week 19.	Remedial exam	

Item code: SFSOS3062E	**Course Title: PRECLINICAL RESTORATIVE DENTISTRY II**		
Cycle: integrated	**Year: III**	**Semester: VI**	**Number of ECTS credits:** 4
Status: obligatory		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 1 (15) **Exercises 2** (30)	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]
Prerequisite for enrollment:	All students enrolled in the3 year of study
Aim (objectives) of the course:	The aim of the course is to acquaint students with the properties and use of materials for reintegration and protection of pulpodentine complex, properties and use of materials for temporary filling of cavities as well as composite and amalgam restorative materials.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Materials for reintegration of the pulpo-dentin complex 2. Cavity lining materials. 3. Dental amalgam-composition, properties and clinical application 4. Adhesive systems. 5. Dental composites-composition, properties or clinical application
Learning outcomes:	At the end of the 6th semester, students will be able to: - discuss materials for reintegration of the pulpo-dentinal complex, liners and materials for temporary cavity filling. - explain the clinical application of amalgams and composites - explain the principles of adhesion, hybrid layer and adhesive systems - explain the application of glass ionomer cements - discuss the choice of restorative material - independently reconstruct the defect on the phantom with appropriate restorative material.
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Acquired knowledge is assessed through partial assessment and final exam. The partial knowledge test carries a maximum of 30 points, for a test to be scored, it must contain a minimum of 17points. Through a practical exam, the exam evaluates the proper protection of the pulpo-dentinal complex, the restoration of the defect of the hard dental tissue on the phantom and carries 20 points. At the final exam the student must achieve a minimum of 55% correct answers. .The final grade is formed based on points won and according to the scale of points:

	10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 4. Živković i saradnici. Osnove restaurativne stomatologije. Data Status, Beograd 2009 5. Šutalo i saradnici. Patologija I terapija tvrdih zubnih tkiva. Naklada Zadro, Zagreb, 1994 6. Karadžov i saradnici. Preparacija kaviteta. Grifon, Beograd, 1999 Additional: 1. Mount GJ, Hume WR. Preservation and restoration of tooth structure. Mosby International Ltd. 1998. 2. Summit JB, Robbins JW, Hilton TJ, Schwartz RS. Fundamentals of operative dentistry: a contemporary approach: Quintessence Publishing Co Inc, 2013.

Course syllabus

Week	Teaching and learning methods	Number of hours
Week 1.	Lecture: Materials or pulp-dentin complex reintegration. Special preclinical practicals: Introduction	1 2
Week 2.	Lecture: Cavity liners Special preclinical practicals: Placement materials for reintegration of the pulpo-dentin complex	1 2
Week 3.	Lecture: Dental amalgam. Physical and chemical components and properties. Special preclinical practicals: Cavity lining on premolars and molars	1 2
Week 4.	Lecture: Dental amalgam. Practical clinical application. Special preclinical practicals: Cavity lining on incisors and canine.	1 2
Week 5.	Lecture: Adhesion to Enamel and Dentin Special preclinical practicals: Matricing systems and interdental wedges (Ivory 1)	1 2
Week 6.	Lecture: Adhesive systems Special preclinical practicals: Matricing systems and interdental wedges.	1 2
Week 7.	Partial exam	1 2
Week 8.	Lecture: Dental composites. Physical and chemical components and properties. Special preclinical practicals: Class I amalgam restoration.	1 2
Week 9.	Lecture: Clinical application of dental composites. Special preclinical practicals: Class II amalgam restoration.	1 2
Week 10.	Lecture: Glass ionomer cements in restorative procedures. Special preclinical practicals: Class V restorations. Amalgam restoration finishing and polishing.	1 2

Week 11.	Lecture: Temporary cavity filling materials. Special preclinical practicals: Direct composite restauration of class I cavity	1 2
Week 12.	Lecture: Complex restorations Special preclinical practical: Direct composite restauration of class II cavity	1 2
Week 13.	Lecture: Decision making in restorative material choice. Special preclinical practicals: Direct composite restauration of class III cavity	1 2
Week 14.	Lecture: Interactive repetition Special preclinical practicals: Direct composite restauration of class V cavity	1 2
Week 15.	Lecture: Interactive repetition Special preclinical practicals: Practical exam	1 2
Week 17.	Final exam/retake	
Week 19.	Retake/ remedial	

Item code: SFSOM0601E	**Course Title: SURGERY**		
Cycle: integrated	**Year: III**	**Semester: VI**	**Number of ECTS credits: 9**
Status: obligatory		**Total number of hours: 90** Optionally develop the distribution of hours by type: **Lectures** 45 **Exercises 45**	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 3 year of study		
Aim (objectives) of the course:	The purpose of teaching course is to introduce students to the basic surgical principles, elements of the surgical diagnostics and therapy, symptoms of the surgical pathology, specific way of recognizing surgical diseases and injuries, and basic concepts of the procedures in anesthesiology and reanimatology as well.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)			
Learning outcomes:	Course contents and outcomes Student has to capture basic knowledge and skills : 1.General surgery: Aseptic and antiseptic; Sterilization; Wound and healing process; War wounds; Surgical infections; Burns; Shock, and treatments of all kinds of shock; Bleeding;		

	Hemostasis; Transfusion; Surgical immunology; Surgical oncology; Ischemic syndrome; Bandages and immobilization; Emergency and war surgery. 2. Anesthesiology and reanimation General, local and regional anesthesia; Pain treatment; Cardiopulmonal reanimation, Basics of the fluid treatment and minerals management. 3. Neurosurgery Craniocerebral injuries; Intracranial tumors; Cerebrovascular ischemic disease. Spontaneous intracranial hemorrhage; Compressive neurovascular syndromes – neuralgia, The basis of the skull base surgery; Cranio –facial anomalies; Peripheral nerve injuries; Degenerative disc disease. 4. Chest surgery Chest injuries; Pneumothorax; Chest drains; Benign and malignant tumors of the lung and bronchi; Mediastinal tumors; Brest tumors; Thyroid gland tumors, and goiter. 5. Cardiac surgery Heart injuries; Ischemic heart disease; Urgent conditions in cardiac surgery; Medication and dental praxis. 6. Vascular surgery Vessel injuries; Acute and chronic arterial occlusion; Acute and chronic ischemia; Aneurismal disease; Deep vein thrombosis; Chronic vein insufficiency and varicose veins. 7. Abdominal surgery Abdominal injuries; Syndrome of an acute abdomen; Hernias of the abdominal wall; Basics of the gastro-intestinal; hepatic, and bile surgery; Colon-rectal surgery. 8. Urology Injuries in urology; Surgery of urodynamic and disorders; Erectile dysfunction; Tumors of urinary and genital tract. 9. Orthopedic and trauma surgery Politrauma; Osteo-articular congenital and acquired anomalies; General characteristics of fracture and bone healing; Fracture treatment; Osteosynthesis. 10. Plastic and reconstructive surgery Transplants, lobes; Aesthetic surgery; Epithelial skin tumors; Melanoma 11. Pediatric surgery Surgery of the congenital anomalies. Acute conditions in pediatric surgery patients.
Teaching methods:	The course will be realised through: - Lectures (45 hours) - Practicals (45 hours) Teaching metods: – interactive, theoretical and practical teaching – small groups of students

	– "Peyton's 4-steps approach" (problem based learning), and OSCE method (an objective structured clinical examination) will be applied for practical teaching. - A continuous knowledge assessment is planned within calculated number of teaching hours (Practical exam 1; Practical exam 2, as well as Partial theoretical exam 1, and Partial theoretical exam 2).
Assessment methods with assessment structure:	Knowledge assessment is will be conducted continuously through the semester and on the Final exam. All parts of the exam have to be realized and evaluated. **Continuous knowledge assessment** Continuous knowledge assessment includes: **Partial exam 1** (subject matters from Course block 1: General surgery, Anesthesiology, Neurosurgery, Chest surgery; Cardiac surgery), Partial exam 2 (subject matters from Course block 2: Vascular surgery, Abdominal surgery, Urology, Orthopedic and trauma surgery; Plastic and reconstructive surgery; and Pediatric surgery), and Practical exam 1 and Practical exam 2. Parts of the exam which student did not pass have to be evaluated on the Final exam. Practical exam 1 implies assessment of the acquired skills from the following subject matters: General surgery, Anesthesiology, Neurosurgery, Chest surgery; Cardiac surgery. The acquired skills will be evaluated through the solving the tasks that are previously defined on the check list. Student will get one check list from the each subject matter: - General surgery – 8 questions (maximal score 4 points, minimal score 2.5 points) - Anesthesiology and reanimat. – 6 questions (maximal score 3 points, minimal score 2 points) - Neurosurgery – 5 questions (maximal score 2.5 points, minimal score 1.5 points) - Chest surgery – 3 questions (maximal score 1.5 points, minimal score 1 point) - Cardiac surgery –3 questions (maximal score 1.5 points, minimal score 1 point) Each successfully solved task carries 0.5 points. Practical exam 2 implies assessment of the acquired skills from the following subject matters: Vascular surgery, Abdominal surgery, Urology, Orthopedic and trauma surgery; Plastic and reconstructive surgery; and Pediatric surgery. The acquired skills will be evaluated through the solving the tasks that are previously defined on the check list. Student will get one check list from the each subject matter: - Vascular surgery – 3 questions (maximal score 1.5 points, minimal score 1 point) - Abdominal surgery – 8 questions (maximal score 4 points, minimal score 2.5 points) - Urology – 3 questions (maximal score 1.5 points, minimal score 1 point) - Orthopedic and trauma surgery – 6 questions (maximal score 3 points, minimal score 2 points) - Plastic and reconstructive surgery – 6 questions (maximal score 3 points, minimal 2 points) - Pediatric surgery – 4 questions (maximal score 2 points, minimal score 1.5 points) Each successfully solved task carries 0.5 points.

	Maximal score that could be achieved on Practical exam 1 is 12.5 points, and minimal 8 points. Maximal score that could be achieved on Practical exam 2 is 15 points, and minimal 10 points. Total sum of points that could be captured on this part of continuous knowledge assessment is 27.5 points. At least over-half score out of each subject matter has to be captured to pass the exam. Points from this part of exam will be added to the points realized on the other parts of the exam to form the final mark. Partial exam 1 is formed as a written test within 70 „multiple choice" questions (MCQ): General surgery – 20 MCQ (maximal score 10 points, minimal 5.5 points), Anesthesiology and reanimat. – 15 MCQ (maximal score 7.5 points, minimal 4 points) Neurosurgery – 15 MCQ (maximal score 7.5 points, minimal 4 points), Chest surgery – 10 MCQ (maximal score 5 points, minimal 3 points), and Cardiac surgery – 10 MCQ (maximal score 5 points, minimal 3 points). Maximal score that could be achieved on Partial exam 1 is 35 points. Student has to capture at least 19.5 points, and at least over-half score out of each subject matter. Partial exam 2 is formed as a written test within 75 MCQ as it follows: Vascular surgery – 10 MCQ (maximal score 5 points, minimal 3 points), Abdominal surgery – 20 MCQ (maximal 10 points, minimal 6 points), Urology – 10 MCQ (maximal score 5 points, minimal 3 points), Orthopedics and trauma surgery – 15 MCQ (maximal score 7.5 points, minimal 4 points), Plastic and reconstructive surgery – 10 MCQ (maximal score 5 points, minimal 3 points), and Pediatric surgery – 10 MCQ (maximal score 5 points, minimal 3 points). Maximal score that could be achieved on Partial exam 2 is 37.5 points. Student has to capture at least 22 5 points, and at least over-half score out of each subject matter. Final exam Final exam is oral test of knowledge from those areas that have not been passed on the previous exam parts. Complete practical exam has to be passed to approach to the Final exam. Parts of the practical exam that have not been passed should be realized according to the previously presented principles of the acquired skills evaluation. Oral exam and evaluation of knowledge is based on answers to questions printed on certified test card. All test cards are in the deck and students randomly choose one of them. Questions are arranged and distributed according to blocks of teaching areas: Student which did not pass Partial exam 1 draw the card from the deck of "Block I" with questions from the subject matters: General surgery (3 questions; maximal score 10 points, minimal 5.5 points); Anesthesiology and reanimatology (2 questions; maximal score 7.5 points, minimal 4 points); Neurosurgery (2 questions; maximal score 7.5 points, minimal 4 points); Chest surgery (1 question; maximal score 5 points, minimal 3 points); Cardiac surgery (1 question; maximal score 5 points, minimal 3 points). Maximal score responds to maximal score of Partial exam 1 and it is 35 points. Student has to capture at least 19.5 (at least over-half score out of each subject matter). Student which did not pass Partial exam 2 draw the card from the deck of "Block 2" with questions from the subject matters: Vascular surgery (1 question; maximal score 5 points, minimal 3 points); Abdominal surgery (3 questions; maximal score 10 points, minimal 6 points); Urology (1 question; maximal score 5 points, minimal 3 points); Orthopedic and trauma surgery (2questions; maximal score 7.5 points, minimal 4 points); Plastic and reconstructive surgery (1 question; maximal score 5 points, minimal 3 points), and Pediatric surgery (1 question; maximal score 5 points, minimal 3 points). Maximal score responds to

	maximal score of Partial exam 2 and it is 37,5 points. Student has to capture at least 22 points (at least over-half score out of each subject matter). Repeated and Remedial exam Parts of the exam that student have not passed are evaluated orally on the Repeated and Remedial exam according the rules of Final exam. Evaluation of the results, grade and marks Total number of points captured through the all kinds of knowledge assessment translates in a final result as it is shown: Mark-grade Total points Description 10 (A) 95-100 Exceptional and remarkable success without or with insignificant faults 9 (B) 85-94 Above standard, with some faults 8 (C) 75-84 Average, with notable faults 7 (D) 65-74 Generally good, but with significant faults 6 (E) 55-64 Meets the minimum criteria 5 (F, FX) <55 Does not meet the minimum criteria
Literature:	**Mandatory:** - Schwartz. Principles of surgery**,** McGraw Hill education 2015. Tenth edition. ISBN: 978-0-07-180092-1 (e-book) **Additional**: - Greenfield's Surgery: Scientific Principles and Practice Editor: Mulholland, Michael W.; Lillemoe, Keith D.; Doherty, Gerard M.; Maier, Ronald V.; Upchurch, Gilbert R. Publisher: Lippincott Williams & Wilkins Edition: 4th Edition ISBN: 0781756243 (e-book)

Course syllabus Surgery

Week	Form of teaching and materials	Number of hours
Week 1.	Lecture: Introduce; History of the surgery; Surgery in the peace and wartime; Modern directions and perspectives of surgery; Aseptic and antiseptic, sterilization methods. Practice: Indications and contraindications for surgery. Introducing to aseptic work; surgical scrubbing; sterilization equipment. Operation room elements; Behavior in operation room.	3 3
Week 2.	Lecture: - The wound and wound healing. Classification and management of wound, principle of wound healing, principles of primary and secondary wound management, complications during wound healing. Surgical management of snake, insects and mammals stings and bites. Practice: -Surgical instruments; Sewing material, type of sutures; Wound treatment (simulation). Removing stitches from the skin sutures	
Week 3.	Lecture:- Surgical infections. Factors and causes of aerobic and anaerobic infections in surgery. Treatment of surgical Infections. (panaritium, paronychium, phlegmone, cellulitis, furunculus, carbuncles, necrotizing fasciitis, gas-gangrene...). Importance of the tooth health and oral cavity in prevention of the surgical complications. Practice:	3 3

	Incisions, drainage. Peripheral vein puncture. Infusion system preparation; transfusion kit. Intravenous and muscular injection. Antibiotic administration.	
Week 4.	Lecture: -Burns, Shock, Bleeding, Transfusion; Crush and blast syndrome; Surgical drains; Bandage; Immobilization. Practice: -Catheterization of the bladder. Surgical knots tying. Small burns management. Biopsy technique. Wound and skin cultures taking. Drainage measurement and control.	3 3
Week 5.	Lecture: Basics of surgical oncology. Basics of surgical immunology. Implants and transplantation principles. Practice: Technique of bandaging; Principles and technique of immobilization.	2 2
Week 6.	Anesthesiology and reanimation Lecture: -General anesthesia, local and regional anesthesia, Pain control and therapy. Cardio-pulmonary reanimation. Specificity of metabolism and nutrition of surgical patients. Practice: -Local and regional anesthesia in practice manner. Anesthetists anamnesis, introducing in general anesthesia. Technique of endotracheal intubation. Monitoring of the patients in intensive care unit. Parenteral nutrition. Interpretation of the laboratory results. Basics of the cardio-pulmonary reanimation. Defibrillation. Coma position.	3 3
Week 7.	Neurosurgery Lecture: -Craniocerebral and spinal injuries. Degenerative disc disease. Cerebrovascular ischemic disease. Spontaneous intracranial hemorrhages. Intracranial aneurisms. Vascular malformations of the brain. Compressive neurovascular syndromes – neuralgias. Intracranial and spinal neurooncology. Surgery of the basis of the skull. Cranial-facial anomalies. Multimodal monitoring of the patients. Surgery of the peripheral nerves. Practice: -Basics of the ambulatory examination in neurosurgery. Glasgow coma score. Approach to the coma – patient. Interpretation of the clinical signs of the increased intracranial pressure. Demonstration of the focal neurological deficit. Meningeal signs. Demonstration of the signs of the cerebral death. Neurological examination of the patient with degenerative disc disease. Lumbar puncture. Interpretation of the acute paraplegia. Paresis and paralysis of the cranial nerves - clinical signs. Clinical signs of the trigeminal neuralgia. Clinical signs of the brain tumor. Peripheral nerve injury – clinical signs. Interpretation of the diagnostic procedures in intracranial hemorrhage, and mass effect on MRI/CT of the brain.	3 3
Week 8.	Chest surgery Lecture: -Chest injuries. Tracheal disease. Benign and malignant tumors of the lung. Bronchial tumors. , Surgical infections of the pleura. Mediastinal tumors. Pneumothorax and hemothorax. Breast surgery. Thyroid surgery. Practice: -Auscultation and percussion of the chest. Pleural puncture and drainage. Management of the pneumothorax. Monitoring of the chest drains. Breast examination. Thyroid examination.	3 2
Week 9.	Cardiac surgery Lecture: -Congenital anomalies of the heart. Mitral and tricuspid stenosis /insufficiency. Aneurysm of the thoracic aorta. Pulmonary valve insufficiency. Surgery of the ischemic heart disease. Pericardial surgery. Disorders of the heart rhythm.	3

	Practice: - Principles of the extracorporeal circulation, invasive cardiology. EKG interpretation. Specific cardiac surgery instruments. Principles of the sternotomy. Urgent decompressive operations and punctures. Specific medications in dental practice. Practical exam 1 Partial exam 1	 2 1 1
Week 10.	Vascular surgery Lecture: -Vascular injuries. Acute and chronic ischemic syndrome. Compressive syndromes. Arterial aneurysms. Basics of the surgical phlebology. Lymphoedema. Practice: -Technique of the vascular examination. Interpretation of the clinical signs and diagnostic procedures. Simulation of the surgical procedures on synthetic vessels.	3 3
Week 11.	Abdominal surgery Lecture: -Abdominal injuries. Acute abdomen syndrome. Gastro - esophageal reflux disease. Gastric surgery. Bile tract surgery. Hernias of the abdominal wall. Ileus. Mesenterial thrombosis. Small bowel and large bowel tumors. Acute appendicitis. Anal-rectal fistula and abscesses. Hemorrhoids. Ileostoma; colostoma. Liver and pancreatic surgery. Portal hypertension. Practice: -Examination of the patient with abdominal pain. Interpretation of the diagnostic procedures in abdominal surgery. Digital – rectal examination. Gastric tube placement. Gastric lavage. Inguinal channel digital examination. Enema – clyster. Rectal tube placement. Anus praeternaturalis care.	3 3
Week 12.	Urology Lecture: -injuries of the urinary tract. Infections of the urinary tract. Tumors of the urinary tract and retroperitoneal space. Testicular tumors. Suprarenal tumors. Benign prostatic hyperplasia. Urinary tract stones. Acute scrotum syndrome. Acute retention of urine. Acute and chronic renal insufficiency. Hemodialysis. Kidney transplantation. Practice: -Examination of the patient. Palpation of the testicles. Translumination of the scrotum. Bladder catheterization. Suprapubic puncture of the bladder.	3 3
Week 13.	Orthopedics and trauma surgery Lecture: -Congenital deformities of the foot and hip. Tumors of the locomotor system. Morbus Perthes. Inflammatory diseases of the bones and joints. Characteristics of the fractures. Bone healing patopysiology. Principles of the conservative treatment of the fracture. Osteosynthesis. Fracture and dislocation of the clavicle. Humeral fracture. Elbow dislocation. Fracture of the forearm. Hand injuries. Pelvic fracture. Femoral fracture. Hip dislocation. Knee injuries. Crural fractures. Foot injuries. Practice: -Examination of the locomotor system. Interpretation of the basic radiodiagnostics of the osteo-articular system. Plaster and extensional immobilization. Ingrown nail removement. Principles of the treatment and technique of the fracture and dislocation. Evacuation of the hematoma	3 3
Week 14.	Plastic and reconstructive surgery Lecture: -Free skin transplants. Local grafts , muscular free graft. Hand surgery. Aesthetic surgery. Malignant melanoma. Malignant epithelial skin tumors. Practice: -Surgical treatment of the pressure ulcers. Local treatment of the burns. Principles of the fluid replacement in patients with burns. Clinical presentation of the epithelial skin tumors. Principles	3

	of the malignant melanoma excision. Indications for the basic aesthetic surgical procedures. Demonstration of the basic procedures in hand surgery. Practical presentation of skin grafting and transplantation.	3
Week 15.	Pediatric surgery Lecture: -Congenital anomalies of the head and neck. Ileus in pediatric age. Congenital defect of the abdominal wall. Congenital malformation of the urinary tract. Anal and rectal malformations. Hirschprungs disease. Achalasia. Tumors in pediatric age. Appendicitis and Meckels diverticle. Hernias in children. Practice: -Technique of the examination. Wound dressing. Gastric tube and bladder catheterization of the pediatric patient. Enema in children.	3 3
Week 16.	Practical exam 2 Partial exam 2	1 1
Week 17.	Final exam	

Item code: SFSIS2045E	**Course Title: Psychology**		
Cycle: integrated	**Year: III**	**Semestar: VI**	**Number of ECTS credits:** 3
Status: obligatory		**Total number of hours: 32** **Lectures** 15 **Exercises** 15 **Seminar** 2	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	All students enrolled in the 3 year of study		
Aim (objectives) of the course:	The aim of the course is to provide a student at the theoretical basis on the aesthetic significance of the mouth and teeth to the mental development of individuals. The course introduces students to dental anxiety, dental fear, and their prevention		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Introduction to psychology 2. Stes and psychosomatics 3. The individual and the environment 4. Language and communication 5. Ethics in psychology 6. Doctor-patient/patient-doctor relationship. 7. Psychological significance of aesthetics in dentistry, 8. Pain and fear, 9. Stress, prevention and treatment.		
Learning outcomes:	After completing course of Psychology in dental practice, the student will acquire the theoretical knowledge of the importance of the interaction of the dentist and the patient, the importance of dental aesthetics for a person's psychological development, Patient treatment with dental anxiety, fear and prevention of these conditions.		
Teaching methods:	- interactive lectures, practice and seminars, - consultations.		

Assessment methods with assessment structure:	The exam consists of a partial exam during the semester and a final exam, which are taken in writing. Each written exam carries 40 points. A exam is considered passed if the student has achieved a minimum of 21 points. Seminars carry 10 points maximum each. At the final score, the student must achieve a minimum of 55% of points. The final grade is formed by adding up the points achieved through the partial and final exam, as follows: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Zarevski P, Škrinjarić I, Vranić A. Psihologija za stomatologe. Zagreb: Naklada Slap; 2012. 2. Jurić H, i sur. Dječja dentalna medicina. Zagreb: Naklada Slap; 2015.

Item code: SFSOS0506E	**Course Title: DENTAL ANESTHESIOLOGY**		
Cycle: integrated	**Year: III**	**Semester: VI**	**Number of ECTS credits:** 5
Status: obligatory		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 30 **Exercises** 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 3th year of study		
Aim (objectives) of the course:	The aim of the course is to educate students on the basic concepts of local anesthesia, local anesthetics and techniques for applying local anesthesia in the upper and lower jaw in everyday work. Students will acquire basic knowledge about the mechanism of effect of individual local anesthetics as well as the method of determining the maximum dose for local anesthetics To acquaint students about possible local and systemic complications during and after the application of local anesthesia, how to recognize them and apply the necessary procedures in treatment.		
Thematic units:(*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units will enable the student to master the planned goals related to the chemistry of local anesthetics, local anesthesia techniques with local and systemic complications, which is described in detail in the curriculum as a separate document.		

Learning outcomes:	Through the course Dental Anesthesiology the student will acquire the following knowledge: Master the techniques of plexus and conduction anesthesia in the upper and lower jaw To acquire knowledge about possible local and systemic complications during and after the application of local anesthesia, how to recognize them and apply the necessary procedures in their treatment
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Activity – 10 points First partial examination (written knowledge assessment) – 25 points Second partial examination (written knowledge assessment) – 25 points Practical examination – 10 points Final examination (oral knowledge assessment) – 30 points The finalgrade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, 95-100 points. 9 (B) - above average, with some errors, 85-94 points 8 (C) - average, with noticeable errors, 75-84 points 7 (D) -generally good, but with significant shortcomings, 65-74 points. 6 (E) -satisfies the minimum criteria, 55-64 points. 5 (F) - does not meet the minimum criteria, less than 54 points.
Literature:	Required: 1. Šečić S., Ajanović M., Ahmić A., Zukić S., Zukanović A., Tosum S., Dervišević A. Dental anesthesiology, Sarajevo 2018. 2. Kućanski B, Sulejmanagić H, Mustagrudić D, Gojkov T. Oral surgery, I part, II edition, editor: Sulejmanagić H. Sarajevo: USBiH; 1998. 3. TodorovićLj, et al. Anesthesiology in dentistry. Beograd: Univerzitet u Beogradu; 1997. Supplementary: 1.Malamed FS. Handbook of local anesthesia, 5th edition. Mosby; 2004. 4.

Implementation plan of the course Dental Anesthesiology

Week	Teaching and learning methods	Hours
Week 1.	Lecture: Introductory discussions on local anesthetics. A brief historical overview of the development of local anesthetics. Definition, classification, indications and contraindications for the use of local anesthesia. Exercises: Following teaching content of lectures	2 1
Week 2.	Lecture: Physico-chemical characteristics, pharmacokinetics and mechanism of action of local anesthetic. Exercises: Following teaching content of lectures	2 1
Week 3.	Lecture: Properties and clinical effects of local anesthetics. Ester local anesthetics, amide local anesthetics, ampoule content of local anesthetic, choice of local anesthetic Exercises:Following teaching content of lectures	2 1
Week 4.	Lecture: Vasoconstrictors, mechanism of their action, concentrations and choice of vasoconstrictors in local anesthetic. Exercises: Following teaching content of lectures	2 1

Week 5.	Lecture: Preparation of the patient for local anesthesia (aspect of psychological preparation, premedication, preparation of the operative field. Accessories for anesthesia. Exercises: Following teaching content of lectures	2 1
Week 6.	Lecture: General anesthesia in dentistry Exercises: Following teaching content of lectures	2 1
Week 7.	Lecture: Plexus anesthesia. Techniques for performing plexus anesthesia in the upper and lower jaw. Anatomotopographic review of the structure and innervation of the upper and lower jaw. Success rate, anesthesia field and complications during and after plexus anesthesia. Exercises: Following teaching content of lectures. Clinical work of the students	2 1
Week 8.	Lecture: Conductive anesthesia in the upper jaw. Techniques for performing tuber anesthesia Techniques for performing infraorbital anesthesia (extraoral and intraoral). Anatomotopographic details necessary for knowledge of tuberculosis and infraorbital anesthesia. Success rate, anesthesia field and complications during and after anesthesia. Exercises: Following teaching content of lectures. Clinical work of the students	2 1
Week 9.	Lecture: Anesthesia technique for n.palatinus maior, n.nasopalatinus. Anatomical and topographical details necessary for knowledge. Success rate, anesthesia field and complications during and after anesthesia. Exercises: Following teaching content of lectures. Clinical work of the student	2 1
Week 10.	Lecture: Conductive anesthesia in the lower jaw. Anesthesia n.alveolaris inf. Anatomotopographic details necessary for knowledge and orientation of the site of insertion and application of local anesthetic in direct and indirect methods of mandibular block. Mandibular block techniques (extraoral and intraoral). Exercises: Following teaching content of lectures. Clinical work of the student	2 1
Week 11.	Lecture: Techniques of performing mandibular block with reference to the methods of intraoral technique. Success rate, reasons for potential application failure, anesthesia field and complications during and after anesthesia. Gow-Gates mandibular block, Vaziro-Akinosi block (techniques, indications, success rate, complications during and after application) Exercises: Following teaching content of lectures. Clinical work of the student	2 1
Week 12.	Lecture: Techniques of performing conduction anesthesia for n. lingualis. Anatomical and topographical details necessary for knowledge of this technique of conduction anesthesia. Success rate, anesthesia field and complications during and after application. Anesthesia technique for n.buccalis conduction anesthesia. Anatomical and topographical details necessary for knowledge of this anesthesia technique. Percentage of success, anesthesia field and complications during and after anesthesia for n.buccalis. Exercises: Following teaching content of lectures. Clinical work of the student	2 1
Week 13.	Lecture: Anesthesia technique for conduction anesthesia of n.mentalis, n.incisivus and anatomical and topographical details necessary for performing. Success rate, anesthesia field and complications during and after anesthesia. V technique for beard region anesthesia. Exercises: Following teaching content of lectures. Student clinical work	2 1
Week 14.	Lecture: Local complications during and after plexus and conduction anesthesia. Inadequate action of local anesthesia, pain during and after application, post-anesthesia trismus, blood vessel injury, nerve injury, diplopia, needle fracture, ischemia, xerostomia, lip injury Exercises: The teaching content is accompanied by lectures. Student clinical work	2 1
Week 15.	Lecture: Systemic complications during and after local anesthesia. (syncope, toxic reaction, allergic reaction) Exercises: Following teaching content of lectures. Student clinical work	2 1
Week 17.	Final exam	
Week 19.	Corrective exam	

Item code: SFSOM3063E	**Course Title: DERMATOVENEROLOGY**

Cycle: integrated	Year: III	Semester: VI	Number of ECTS credits: 3
Status: obligatory		**Total number of hours: 30** **Lectures** 15 **Exercises** 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrolment:	All students enrolled in the 3rd year of study		
Aim (objectives) of the course:	The aim of this course is adopting knowledge and skills from the domain of dermatovenerology, introducing students with the basic skin diseases with particular focus on those diseases that are connected to the changes in the oral mucosa. Educating students on the basics of dermatological propedeutics, laboratory examinations and tests, as well as differential diagnostic and therapeutic protocols for the most common skin and oral mucosa diseases.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Structure, form and functions of the skin 2. Efflorescence 3. Bacterial and viral skin infections 4. Skin diseases caused by fungi (dermatomycoses) 5. Allergic skin diseases I 6. Allergic skin diseases II 7. Vesicular-bullous skin diseases I 8. Vesicular-bullous skin diseases II 9. Erythematosquamous and papular dermatoses 10. Autoimmune diseases 11. Sexually transmitted diseases 12. Benign skin tumors 13. Malignant skin tumors 14. Diseases of oral cavity mucosa 15. Differential diagnosis of pathological changes in the oral mucosa		
Learning outcomes:	After completed theoretical and practical lessons the student is going to have basic knowledge about the skin and its pathological changes (efflorescence). They are going to adopt knowledge about bacterial, viral and fungal infections as well as means of preparing and interpretation of native preparations. They are going to be introduced to the clinical and laboratory, as well as pathohistological findings of autoimmune diseases, erythematosquamous, popular, and venereal diseases which have implications in the oral mucosa. They are going to know diagnostic and therapeutic protocols in the treatment of benign and malign tumors and they are going to know basic diseases of the oral cavity mucosa with differential diagnosis.		
Teaching methods:	The course is held: 1. lecture ex cathedra for all the students 2. practical exercises		
Assessment methods with assessment structure:	One of the forms of activity is lecture and practice attendance. The assessment of theoretical knowledge from the completed semester is going to be conducted in the written form – by means of a test. The total grade consists of: - regular lecture attendance - 5 points, - practice attendance – 5 points - active work in practice – 35 points, (written presentation of a clinical case – 20 points, answer to an essay question – 15 points) - final exam by means of a test – 55 points.		

	A student can acquire a maximum of 100 points. Evaluation and assessment of students' knowledge is going to be conducted according to the following system: a) 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points; b) 9 (B) - above average, with some errors, carries 85-94 points; c) 8 (C) - average, with noticeable errors, carries 75-84 points; d) 7 (D) -generally good, but with significant shortcomings, carries 65-74 points; e) 6 (E) -satisfies the minimum criteria, carries 55-64 points; f) 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Naima Mutavelić-Arslanagić, Dermatovenerology. Sarajevo, 2004. Additional: 1. Gernot Rassner, Dermatology. Naklada Slap Zagreb, 2004. 2. Šitum M, Dermatovenerology. Medicinska naklada Zagreb, 2018.

Implementation plan for the course Dermatovenerology

Week	Form of teaching and curriculum	Number of hours
Week 1	Lecture: Structure, form and functions of the skin Practice: Dermatological anamnesis and methods of efflorescence distinguishing (inspection, palpation)	1 1
Week 2	Lecture: Efflorescence Practice: Dermatological anamnesis and methods of efflorescence distinguishing (inspection, palpation)	1 1
Week 3	Lecture: Bacterial and viral skin infections Practice: Dermatological anamnesis and methods of efflorescence distinguishing (inspection, palpation)	1 1
Week 4	Lecture: Skin diseases caused by fungi (dermatomycoses) Practice: Native microscopic slide for bacteria and fungi (sampling techniques and interpretation of results)	1 1
Week 5	Lecture: Allergic skin diseases I Practice: Patient presentation, allergy tests	1 1
Week 6	Lecture: Allergic skin diseases II Practice: Patient presentation, allergy tests	1 1
Week 7	Lecture: Vesicular-bullous skin diseases I Practice: Patient presentation	1 1
Week 8	Lecture: Vesicular-bullous skin diseases II Practice: Patient presentation	1 1
Week 9	Lecture: Erythematosquamous and papular dermatoses Practice: Patient presentation	1 1
Week 10	Lecture: Autoimmune diseases Practice: Patient presentation	1 1
Week 11	Lecture: Sexually transmitted diseases Practice: Patient presentation	1 1

Week 12	Lecture: Benign skin tumors Practice: Patient presentation	1 1
Week 13	Lecture: Malignant skin tumors Practice: Patient presentation	1 1
Week 14	Lecture: Diseases of oral cavity mucosa Practice: Patient presentation	1 1
Week 15	Lecture: Differential diagnosis of pathological changes in the oral mucosa Student completes a written exam to an essay question	1 1
Week 17	Final exam (test)	
Week 19	Makeup exam date	

Item code: SFSIM3053E	**Course Title: Neurology**		
Cycle: integrated	**Year: III**	**Semester: V**	**Number of ECTS credits:** 2
Status: Elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 1 (15) **Exercises** 2 (30)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the third year of study		
Aim (objectives) of the course:	-Acceptance of basic knowledge and clinical skills in the field of neurology. -Introduce students to new knowledge about the functioning of the brain, the current possibilities of the neurological profession and enable easier understanding and access to neurological patients. Students will be introduced to the specifics of neurological propaedeutics and the basics of clinical neurological examination. -Teach dental students to know how to approach and establish contact with a neurological patient. - The aim of the course is also to acquaint students with neurological diseases, diagnostics, differential diagnosis and treatment.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Anatomy, physiology and pathophysiology of the CNS 2. Basic syndromes in neurology 3. Cerebrovascular disease 4. Infectious diseases of the CNS 5. Urgent conditions in neurology 6. Crises of consciousness, epilepsy, syncope 7. Autoimmune diseases of the CNS 8. Multiple sclerosis 9. Myasthenia 10. Headaches (idiopathic and symptomatic) 11. Migraine (epidemiology, clinical picture, therapy) 12. Intracranial pressure syndrome 13. Trauma of the nervous system 14. Neurological entities that lead to disorders of swallowing, speech and language mobility		

	15. Cranial nerves and their diseases with special reference to the head and face
Learning outcomes:	Student knowledge: Explain the concept of consciousness. Know the causes of wakefulness disorders. Be able to judge the degrees of disturbance of consciousness. Get acquainted with clinical indicators of the depth of disturbances of consciousness. Know the definition of cerebrovascular disease and division. They will know the etiology of stroke, and understand the pathophysiology of cerebral ischemia and cerebral hemorrhage. Get acquainted with the diagnosis and treatment of acute stroke. Know all 12 cerebral nerves and their function. Be able to recognize and explain the clinical picture of lesions of individual cranial nerves. Students will acquire basic theoretical knowledge in the field of neurology and enable the student of dentistry to use the learned knowledge in future practice, with the aim of recognizing neurological disorders according to the current classification system, which will help him in communication, differential diagnostic thinking and treatment of patients with dental diseases.
Teaching methods:	Lectures Practical exercises
Assessment methods with assessment structure:	The exam consists of a practical and theoretical part. The practical part of the exam involves assessing the acquired skills of taking a medical history and physical examination of a neurological patient. The evaluation of the acquired skills is done through the fulfillment of 20 tasks previously defined in the checklist. Each correct task from the checklist carries one point. The maximum number of points that a student can earn is 20. In order for a practical exam to be considered passed, the student must score at least 11 points. The number of points won is added to other points when forming the final grade. The theoretical part of the exam is a written test that contains 20 theoretical questions and carries a total of 80 points. The correct answer to each question carries 4 points. To be considered passed a student must score at least 41 points. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Dželaludin Kantardžić i suradnici. Neurologija. Svjetlost , Sarajevo 2001. Additional: 1. Suljić E. Neurološki praktikum 2. Vida Demarin, Zlatko Trkanjec, Neurologija za stomatologe, Medicinska naklada Zagreb, 2008. 3. Brinar Vesna i suradnici, Neurologija za medicinare, Medicinska naklada Zagreb,2009

Teaching plan – Neurology

Week	Course form and content	Number of hours

Week 1.	Lecture: Anatomy, physiology and pathophysiology of the CNS, History and examination of a neurological patient Practical exercises: They follow the lectures with teaching content	1 2
Week 2.	Lecture: Basic syndromes in neurology. Consciousness and disorders of consciousness Practical exercises: They follow the lectures with teaching content	1 2
Week 3.	Lecture: Cerebrovascular disease Practical exercises: They follow the lectures with teaching content	1 2
Week 4.	Lecture: Infectious diseases of the CNS Practical exercises: They follow the lectures with teaching content	1 2
Week 5.	Lecture: Urgent conditions in neurology Practical exercises: They follow the lectures with teaching content	1 2
Week 6.	Lecture: Crises of consciousness, epilepsy, syncope Practical exercises: They follow the lectures with teaching content	1 2
Week 7.	Lecture: Autoimmune diseases of the CNS Practical exercises: They follow the lectures with teaching content	1 2
Week 8.	Lecture: Multiple sclerosis Practical exercises: They follow the lectures with teaching content	1 2
Week 9.	Lecture: Myasthenia Practical exercises: They follow the lectures with teaching content	1 2
Week 10.	Lecture: Headaches (idiopathic and symptomatic) Practical exercises: They follow the lectures with teaching content	1 2
Week 11.	Lecture: Migraine (epidemiology, clinical picture, therapy) Practical exercises: They follow the lectures with teaching content	1 2
Week 12.	Lecture: Intracranial Pressure Syndrome, Tumors of the Nervous System, Degenerative and Metabolic Diseases in Neurology Practical exercises: They follow the lectures with teaching content	1 2
Week 13.	Lecture: Trauma of the nervous system, Craniocerebral injuries and consequences, Spinal cord trauma Practical exercises: They follow the lectures with teaching content	1 2
Week 14.	Lecture: Neurological entities that lead to disorders of swallowing, speech and language mobility Practical exercises: They follow the lectures with teaching content	1 2
Week 15.	Lecture: Cranial nerves and their diseases with special reference to the head and face Practical exercises: They follow the lectures with teaching content	1 2
Week 17.	Final exam, Corrective exam period.	

Item code: SFSIS0603	**Course Title: Public health**		
Cycle: integrated	**Year: III**	**Semester: V**	**Number of ECTS 2**
Status: elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 1 (15) **Exercises** 12(30)	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]
Prerequisite for enrollment:	Choosing the course as an elective
Aim (objectives) of the course:	The goal is to train the student to accept socio-medical approach of observing and researching complex phenomenas of health and disease, what is going to doctors of dental medicine to improve health care of population.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Theoretical health concept and the most important health influence factors. Population health assessment and social deseases. Health care systems and financement. Economical aspect of health and disease. Management and quality in health care. Health promotion. Motivation to preserve oral health.
Learning outcomes:	Knowledge: After finishing the course, the student should know to: - Identify population public health risk factors at local and national level, with special attention given to oral diseases; - Understand organisation, functioning and financing of health system and health care and legislative, accurate standards and normatives related to dental care; - apply principles of critical reading of scientific literature. Skills: On successful completion of this module students will be able to: - Identify and describe different types of research projects: descriptive, analytical and experimental - adopt the principles of evidence-based, clinical oral health care, be able to understand application of fact-based studies in clinical practice. Competences: On successful completion of this module, students will be: - capable of evaluating the efficiency of evidence-based clinical practice ; - able to plan, organize and conduct population-based oral health studies on local and national level - able to describe, explain and identify the most significant issues for development of a patient-centered oral health care system and fully aware and respectful of the highest principles of the health care ethic.

Teaching methods:	• Lectures • Practical courses – in student's groups according to standard • Interactive learning for all students (during lectures and practical courses)
Assessment methods with assessment structure:	After taking part in all lectures and hands-on training activities and upon completing the final exam, students can earn a maximum of 100 points. The final course grade will include the following: Points earned for student activity in practical training sessions. Students can earn a maximum of 10 points. Student activity will be observed and assessed continuously on individual basis.

	Points earned for completed partial exam: Students can earn a maximum of 60 points per completed partial exam. Written partial exams are administered in the 11thweek of the program, to assess the knowledge acquired by the student in the first 10 weeks of the program. The sitting of partial exam is not mandatory; a student may decide to instead sit a single cumulative final exam. Results of the final written exam in which a student can earn a maximum of 30 points. To pass final exam at least 55% of exam questions must be answered correctly Student can achieve maximum of 100 points. **If 70 points are earned in the activities on practical training and partial exam, it is considered that the passing grade is achieved and the student is not obliged to take the final exam, unless he/she wants to achieve a better final grade.** Final grade is formed according to grading scale: Grading scale : 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature	1. Pine C., Harris R.: „COMMUNITY ORAL HEALTH“, Quintessence Publishing, UK Catalogue, 2007 2. Murray J.J.: „PREVENTION OF ORAL DISEASES“, 4th Edition, Oxford University Press, Oxford, 2003.

Teaching plan Public oral health

Week	Course form and content	Number of hours
Week 1.	Lectures: Introduction in public health, definitions, history, development, basic therms,importance Practice: Practice and methodology description	1 2
Week 2.	Lectures: Theoretical health concept and the most important health influence factors Practice: Analyse of different health model concepts	1 2
Week 3.	Lectures: Population health assessment and social deseases Practice: Epidemiological and statistical principes in population health analyse	1 2
Week 4.	Lectures: Health care Practice: Health care of specific population groups	1 2
Week 5.	Lectures: Public health organisation Practice: Organisation and work of health institutions.	1 2
Week 6.	Lectures: Health care systems and financement. Economical aspect of health and disease Practice: Financement models of health care	1 2
Week 7.	Lectures: Classification systems in health care. International clasification of diseases, injuries and causes of deaths Practice: Classification systems in health care. International clasification of diseases, injuries and causes of deaths	1 2
Week 8.	Lectures: Quallity in health care Practice: Evaluation and control quallity in dental care	1 2

Week 9.	Lectures: Oral diseases as a public health problem Practice: Global epidemiological indicators of oral health	1 2
Week 10.	Lecture: Overweight and obesity as a public health problem Practice: Overweight and obesity as a public health problem	1 2
Week 11.	Lectures: Planning for health Practice: Resurses and equipment planning in health care institutions	1 2
Week 12.	Lectures: Health promotion Practice: Examples of individual and public motivation in oral health	1 2
Week 13	Lectures: Education in health care Practice: Content and methods of education in health care	1 2
Week 14.	Lectures: Behaviour and health Practice: Model of health behaviour as basis for educational health interventions	1 2
Week 15.	Lectures: Motivation to preserve oral health. Practice: Motivational models for maintaining oral health.	1 2
Week 17.	Final exam	
Week 19.	Final exam/retake	

Item code: SFSIS3054E	**Course Title: Oral hygiene**		
Cycle:integrated	**Year: III**	**Semester: V**	**Number of ECTS credits:** 2
Status: elective		**Total number of hours: 45** **Lectures** 15 **Excercises** 30	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs/subject**		
Prerequisite for enrollment:	Regulated by the rules of study for the first cycle of studies at higher education institutions of the University of Sarajevo		
Aim (objectives) of the course:	The aim of the course is to train students to work independently in order to achieve optimal oral hygiene in children and adults.		
Thematic units:	Introduction to the subject Oral Hygiene with Prophylaxis The importance of oral hygiene in maintaining oral health, epidemiology, diseases caused by dental plaque Oral biofilm and other deposits on teeth Methods of detection and removal of oral biofilm Mechanical plaque control - ordinary brushes, single brushes and electric brushes, interdental brushes, thread Auxiliaries for mechanical plaque control Chemical plaque control agents - toothpastes Chemical plaque control agents - rinsing solutions Education, motivation and remotivation for maintaining oral hygiene Protocols for maintaining oral hygiene in young children (newborns, infants, young children and preschool children)		

	Protocols for maintaining oral hygiene in older children of school and adolescent age Protocols for maintaining oral hygiene in adults Protocols for maintaining oral hygiene in patients with prosthetic works and orthodontic appliances, as well as in other conditions and therapeutic measures in the oral cavity of patients Protocols for maintaining oral hygiene in other specific population groups of patients
Learning outcomes:	After completing the course, the student will be able to: • defines, motivates and educates the patient about the importance of oral hygiene for maintaining oral health • fill in the anamnestic dental questionnaire • assess the level of oral hygiene • manages the application of basic and auxiliary measures for the implementation of oral hygiene • masters oral hygiene techniques • educates and recommends to patients the application of various methods and techniques of cleaning teeth with basic and auxiliary items. • educates and recommends to patients the use of different methods and techniques of cleaning teeth with basic and auxiliary items for different ages and specific population groups
Teaching methods:	Classes are held in the form of: •Lectures • Practical classes - exercises in groups according to the standard •Consultation • Individual student work • Seminar papers
Assessment methods with assessment structure:	In the structure of the total number of points, at least 50% of points are provided for activities and knowledge tests during the semester. The partial exam of knowledge testing is performed in VII week of teaching. The partial knowledge test is done in writing. At the end of the Vth semester, the final exam is performed in writing. Those students who are not satisfied with the final grade achieved through success during classes and taking a partial exam in the seventh week of classes can also take the final exam. The exam is taken integrally. The final grade on the final exam is formed according to the following points scale: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Obligate: 1. Jurić H.(urednik). Dječija dentalna medicina. Zagreb: Naklada Slap; 2015. 2. Kobašlija S, Vulićević ZR, Jurić H. i sar. Minimalna invazivna terapija. Sarajevo: Dobra knjiga; 2012.

	3. Marković N, Arslanagić A. (urednici). Oralno zdravlje trudnica i dojenčadi. Specifičnosti stomatološkog tretmana. Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu; 2021. 4. Kobašlija S, Huseinbegović A, Selimović-Dragaš M, Berhamović E. Karijes zuba- Primarna prevencija i kontrola. Sarajevo: Stomatološki fakultet Univerziteta u Sarajevu; 2010. 5. Vulović M, i saradnici. Preventivna stomatologija. Beograd: Elit–Medica; 2002. 6. Mihajlo G, Ivan T, Maja L, Jasmina T. Preventivna stomatologija. Pančevo: Stomatološki fakultet Pančevo; 2014. Additional: 1. Nowak AJ, Christensen JR, Mabry TR, Townsend JA (editors). Pediatric Dentistry. Infancy Through Adolescence. Sixth Edition. Elsevier; 2019. 2. Limeback H (ed). Comprehensive Preventive Dentistry. Wiley-Blackwell; 2012. 3. Harris NO, Garcia-Godoy F, Nathe CN. Primary Preventive Dentistry. Eighth edition. Pearson Education Limited; 2014.

COURSE IMPLEMENTATION PLAN:

Week	Form of teaching	Hours
Week1.	**LECTURES** Introduction to the subject Oral Hygiene with Prophylaxis The importance of oral hygiene in maintaining oral health, epidemiology, diseases caused by dental plaque **EXERCISES** History and clinical examination (workplace, dental record, dental history)	2 2
Week2.	**LECTURES** Oral biofilm and other plaque on teeth Methods of detection and removal of soft deposits **EXERCISES** Dental record (anamnesis, examination, assessment of oral hygiene)	2 2
Week3.	**LECTURES** Mechanical plaque control - ordinary brushes, single brushes and electric brushes, interdental brushes, thread **EXERCISES** Oral hygiene indices	2 2
Week4.	**LECTURES** Auxiliaries for mechanical plaque control Chemical plaque control agents - toothpastes **EXERCISES** Detection and removal of dental plaque and other deposits	2 2
Week5.	**LECTURES** Chemical plaque control agents - rinsing solutions Education, motivation and remotivation for maintaining oral hygiene **EXERCISES** Basic and auxiliary methods for maintaining oral hygiene Brushing technics	2 2
Week6.	**LECTURES**	2

	Protocols for maintaining oral hygiene in young children (newborns, infants, young children and preschool children) and older children (school age and adolescents) **EXERCISES** Basic and auxiliary methods for maintaining oral hygiene Brushing technics	 2
Week7.	**LECTURES** Protocols for maintaining oral hygiene in adults Protocols for maintaining oral hygiene in patients with prosthetic works and orthodontic appliances, as well as in other conditions and therapeutic measures in the oral cavity of patients **EXERCISES** Basic and auxiliary methods for maintaining oral hygiene	2 2
Week8.	**LECTURES** Protocols for maintaining oral hygiene in other specific population groups of patients **EXERCISES** Chemical agents for plaque control	1 2
Week9.	**EXERCISES** Chemical agents for plaque control	2
Week10.	**EXERCISES** Motivation and remotivation for maintaining oral hygiene in an individual	2
Week11.	**EXERCISES** Protocols for maintaining oral hygiene in young children (newborns, infants, young children and preschool children) and older children (school age and adolescents)	2
Week12.	**EXERCISES** Protocols for maintaining oral hygiene in young children (newborns, infants, young children and preschool children) and older children (school age and adolescents)	2
Week13.	**EXERCISES** Protocols for maintaining oral hygiene in adults Protocols for maintaining oral hygiene in patients with prosthetic works and orthodontic appliances, as well as in other conditions and therapeutic measures in the oral cavity of patients	2
Week14.	**EXERCISES** Protocols for maintaining oral hygiene in adults Protocols for maintaining oral hygiene in patients with prosthetic works and orthodontic appliances, as well as in other conditions and therapeutic measures in the oral cavity of patients	2
Week15.	**EXERCISES** Protocols for maintaining oral hygiene in other specific population groups of patients	2

Item code: SFSIS3055E	**Course Title: Infection control in restorative dentistry and endodontics**		
Cycle: integrated	**Year: III**	**Semestar: V**	**Number of ECTS credits:** 2
Status: elective		**Total number of hours: 30** **Lectures** 15	

	Exercises 15 **Seminar** 2
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**]
Prerequisite for enrollment:	All students enrolled in the 3nd year of study
Aim (objectives) of the course:	The aim of the course is to provide a student at the theoretical basis on the control of infection in restorative dentistry and endodontics to ensure the protection of the patient, doctor and environment.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Assessment of the risk of transmission of infection, 2. Standard precautions, 3. Hand hygiene, 4. Personal protective equipment, 5. Sterilization and disinfection, 6. Environmental infection control, 7. Waste management, 8. Screening and patient education, 9. Staff training.
Learning outcomes:	Upon completion of the semester from this course , Control of the infection in restorative dentistry and endodonity, the student will be able to: - Identify potential sources of infection within dental practice, - Understand the principles and processes of disinfection and sterilization, - Assess the ability to transmit infectious materials during the dental intervention, - Evaluate the susceptibility of patients and staff to infections, -Mmanage infectious waste
Teaching methods:	- interactive lectures, - consultations.
Assessment methods with assessment structure:	The exam consists of a partial exam during the semester and a final exam, which are taken in writing. Each exam carries 50 points. A partial exam is considered passed if the student has achieved a minimum of 28 points. At the final exam, the student must achieve a minimum of 55% correct answers. The final grade is formed by adding up the points achieved through the partial and final exam, as follows: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	1. Miller, C. H., Palenik, C. J. (2014.). Infection Control and Management of Hazardous Materials for the Dental Team (6th ed.). Elsevier 2. Fulford, R.,Stankiewicz, N.R. (2020.). Infection Control in Primary Dental Care. Springer Nature

Item code: SFSIS3064E	**Course Title: Complex restorations**		
Cycle: integrated	**Year: III**	**Semester: VI**	**Number of ECTS credits:** 2
Status: elective		**Total number of hours: 45** **Lectures** 30 **Practicals** 15	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**
Prerequisite for enrollment:	All students enrolled in the 3th year of study
Aim (objectives) of the course:	This course aims to introduce students to indications for complex restorations and procedural steps in creating of direct and indirect restorations in case of extensively damaged teeth.
Thematic units:	1. Properties of teeth with extensive loss of tooth structure, 2. Additional retention elements, 3. Direct and indirect restorations, 4. Instruments and steps in complex restorations making process.
Learning outcomes:	At the end of the course Complex restorations, students will be able to: - identify factors that compromise the retention and resistance of the restorations, - discuss about the preparation of additional retention elements, - accept the basics of tooth preparations principles for direct and indirect restorations, - explain the steps in making process of indirect restorations.
Teaching methods:	Classes will take place through: - interactive lectures, - practicals, - consultations.
Assessment methods with assessment structure:	Acquired knowledge is assessed through partial exam and final exam, enrolled in written form. Every exam carries 50 points. The partial exam is performed during the semester and considered passed if the student has achieved a minimum of 28 points. The final exam is considered passed if contain a minimum 55% of correct answers. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Roberson TM, Heymann HO, Swift EJ. Sturdevant's Art and Science of Operative Dentistry, Mosby Inc, 2013.Dopunska:

	2. Summit JB, Robbins JW, Hilton TJ, Schwartz RS. Fundamentals of operative dentistry: a contemporary approach: Quintessence Publishing Co Inc, 2013. Additional: 1. Mount GJ, Hume WR. Preservation and restoration of tooth structure. Mosby International Ltd. 1998.

Course syllabus Complex restorations

Week	Teaching and learning methods	Numbers of hours
Week 1.	1. Lecture: Properties of teeth with extensive loss of the tooth structure 1. Practicals: Case study analysis	2 1
Week 2.	2. Lecture: Cusp reduction 2. Practicals: Case study analysis	2 1
Week 3.	3. Lecture: Additional retention elements 3. Practicals: Case study analysis	2 1
Week 4.	4. Lecture: Tooth support for dental crowns 4. Practicals: Case study analysis	2 1
Week 5.	5. Lecture: New matrix systems 5. Practicals: Case study analysis	2 1
Week 6.	6. Lecture: Instruments for contouring, finishing and polishing of composite restoration 6. Practicals: Case study analysis	2 1
Week 7.	7. Partial exam	2 1
Week 8.	8. Lecture: Morphological modifications of the dental crown with direct restorative material 8. Practicals: Case study analysis	2 1
Week 9.	9. Lecture: Posterior composite restorative materials 9. Practicals: Case study analysis	2 1
Week 10.	10. Lecture: Clinical significance of polymerization contraction 10. Practicals: Case study analysis	2 1
Week 11.	11. Lecture: Principles of tooth preparations for esthetic inlay and onlay 11. Practicals: Case study analysis	2 1
Week 12.	12. Lecture: Principles of tooth preparations for veneers 12. Practicals: Case study analysis	2 1
Week 13.	13. Lecture: Indirect restorations with CAD-CAM technology 13. Practicals: Case study analysis	2 1
Week 14.	14. Lecture: Interactive repetition 14. Practicals: Case study analysis	2 1
Week 15.	15. Lecture: Interactive repetition 15. Practicals: Case study analysis	2 1
Week 17.	Final exam, Remedial	

Week 19.	Remedial	

Item code: SFSIS3065E	**Course Title: PSYCHOACTIVE SUBSTANCES AND ORAL HEALTH**		
Cycle: integrated	**Year: 3**	**Semester: VI**	**ECTS credits: 2**
Status: Elective		**Total hours: 15** **Lectures 15** **Seminars 3**	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs**		
Prerequisite for enrollment:	All students enrolled in the 3th year of study		
Aim (objectives) of the course:	Aim of the course: -To educate students about psychoactive substances, different types, characteristics, modes of action on the entire organism, and the abuse of psychoactive substances. -Epidemiology of harmful consequences of psychoactive substance abuse and their detrimental impact on systemic health with a special focus on oral health. -To train students to recognize oral lesions associated with the use of psychoactive substances and their premalignant potential. -To acquaint students with general, local, and functional preventive measures of psychoactive substance abuse, which today represent a global civilizational problem. -To enable them to implement preventive programs, recognize, and treat diseases in the oral cavity caused by various types of addiction.		
Thematic units: *(If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)*	1. Psychoactive substances: Concept and definition of addiction 2. Abuse of psychoactive substances - a global civilization problem 3. Alcoholism: Impact on general and oral health 4. Opioids (morphine, codeine, heroin): Impact on general and oral health 5. Sedatives-hypnotic substances, stimulants 6. Hallucinogenic psychoactive substances 7. Nicotine addiction and smokeless tobacco products: Impact on general health and oral cavity health 8. Genetic uses and abuses of psychoactive substances 9. Risks of HIV transmission among psychoactive substance users 10. Methadone and addiction 11. Abuse of psychoactive substances in adolescence 12. Diagnosis, differential diagnosis of oral diseases in addicts 13. Specific tests related to the abuse of psychoactive substances 14. Prevention of psychoactive substance abuse 15. The role of dental doctors in therapeutic communities		
Learning outcomes:	Through the course "Psychoactive Substances and Oral Health," the student will: Have knowledge about psychoactive substances, their types, methods of consumption, and their abuse, as well as their impact on general and oral health.		

	Master the application of anamnestic-diagnostic principles in examining oral mucosa, periodontium, teeth, as well as the practical application of oral tests for diseases caused by the abuse of psychoactive substances. Be familiar with the protocol for treating oral diseases caused by the abuse of psychoactive substances. Acquire knowledge about preventive programs and their implementation.
Teaching methods:	The course is held: 1. lecture ex-cathedra for all the students 2. exercises 3. seminars
Assessment methods with assessment structure:	One form of activity is attendance at lectures. The assessment of theoretical knowledge acquired during the semester will be conducted in written form – through a test. The overall grade consists of: - Regular attendance at lectures - 5 points, - Regular attendance at exercises- 5 points, - 3 seminar papers (max. 15 points each) - 45 points, - Final exam through a test – 45 points. The maximum total score achievable is 100 points. The evaluation and grading of students' knowledge will be done according to the following system: 10 (A) - outstanding performance without errors or with minor errors, carrying 95-100 points; 9 (B) - above average, with occasional errors, carrying 85-94 points; 8 (C) - average, with noticeable errors, carrying 75-84 points; 7 (D) - generally good, but with significant shortcomings, carrying 65-74 points; 6 (E) - meets minimum criteria, carrying 55-64 points; 5 (F) - does not meet minimum criteria, less than 55 points.
Literature:	Obligatory: 1. Topić B. et al.: Oral Medicine. Faculty of Dentistry, University of Sarajevo, 2001. 2. Cerić I., Mehić-Basara N., Oruč LJ., Salihović H.: Abuse of Psychoactive Substances and Drugs. Faculty of Medicine, University of Sarajevo, 2007. 3. Hadžić S., Gojkov Vukelić M., Pašić E., Mujić Jahić I., Muharemovića A., Konjhodžić Prcić A.: Potentially Malignant Oral Disorders - Oral Precancerous Lesions. Faculty of Dentistry, University of Sarajevo, 2022. Supplementary: 1. Greenberg M., Glick M.: Burket's Oral Medicine, Diagnosis and Treatment, Tenth Edition, Medicinska naklada, Zagreb 2006. 2. Đukanovic D. et al.: Atlas of Diseases of the Oral Soft Tissues, Belgrade, 2001. 3. Laskaris G.: Atlas of Oral Diseases, Third Revised Edition (translated into Croatian), Zagreb 2003.

Implementation plan for the course: Psychoactive substances and oral health

Week	Form of teaching and curriculum	Number of hours

Week 1.	Lecture: Psychoactive substances, concept and definition of addiction Exercises : Presentation of clinical cases from practice (atlas and books)	1 1
Week 2.	Lecture: Abuse of psychoactive substances - a global societal problem Exercises : Presentation of clinical cases from practice (atlas and books)	1 1
Week 3.	Lecture: Alcoholism, impact on general and oral health Exercises : Anamnestic and diagnostic procedure	1 1
Week 4.	Lecture: Opioids (morphine, codeine, heroin) - impact on general and oral health Exercises : Anamnestic and diagnostic procedure	1 1
Week 5.	Lecture: Sedatives - hypnotic substances, stimulants Exercises : Seminar paper on the assigned topic	1 1
Week 6.	Lecture: Hallucinogenic psychoactive substances Exercises : Presentation of specific diagnostic tests	1 1
Week 7.	Lecture: Nicotine addiction and smokeless products' impact on general and oral health Exercises : Presentation of specific diagnostic tests	1 1
Week 8.	Lecture: Genetic uses and abuses of psychoactive substances Exercises : Presentation of anamnestic and diagnostic procedure on patient	1 1
Week 9.	Lecture: Risks of HIV transmission among psychoactive substance users Exercises : Presentation of preparation techniques for the observation of native material and use of microscope	1 1
Week 10.	Lecture: Methadone and addiction Exercises : Seminar paper on the assigned topic	1 1
Week 11.	Lecture: Abuse of psychoactive substances in adolescence Exercises : Individual work with patient (anamnestic and diagnostic procedure)	1 1
Week 12.	Lecture: Diagnosis, differential diagnosis of oral diseases in substance abusers Exercises : Individual work with patient (anamnestic and diagnostic procedure)	1 1
Week 13.	Lecture: Specific tests related to the abuse of psychoactive substances Exercises : Individual work (preparation techniques for the observation of native material and use of microscope)	1 1
Week 14.	Lecture: Prevention of psychoactive substance abuse Exercises : Individual work (preparation techniques for the observation of native material and use of microscope)	1 1
Week 15.	Lecture: The role of a Doctor of Dental Medicine in a therapeutic community Exercises : Seminar paper on the assigned topic	1 1
Week 17.	Final exam (test)	
Week 19.	Makeup exam date for students who have not passed the final exam	

Item code: SFSIS0602E	**Course Title: INFECTIOUS DISEASES**		
Cycle: integrated	**Year: III**	**Semester: VI**	**Number of ECTS credits: 2**
Status: elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** **Exercises**	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]
Prerequisite for enrollment:	all courses from the previous V semester have to be passed
Aim (objectives) of the course:	The objective of the course is to introduce students of dentistry with theoretical and practical knowledge in the field of infectology, which means: 1. knowledge from general infectology: - infectious diseases today, perspectives, biological warfare - the etiology of infectious diseases - general pathogenesis of infection (infection emergence) - defense of the organism from pathogens - clinical course, forms and syndromes in infectious forms - anamnesis in infectious diseases - clinical examination of infectious patients - diagnosis of infectious diseases - differential diagnosis, prognosis - treatment of infectious diseases - prevention of infectious diseases 2. knowledge from special infectology An infectology approach to the problem by specific criteria (definition, etiology, epidemiology, pathogenesis, clinical picture, diagnosis, differential diagnosis, treatment, outcome). - Infections of the central nervous system (bacterial meningitis, viral meningitis, post-traumatic-post-operative meningitis, focal infections of the brain), meningeal syndrome, encephalitic syndrome, lumbar puncture - sinusitis, otitis media, mastoiditis - infection of the cardiorespiratory system (infective endocarditis, syndrome of angina: bacterial tonsillopharyngitis, peritonsillar abscesses (Streptococcus pyogenes, Staphylococcus aureus, Pseudomonas aeruginosa, E. coli and other coliform bacteria, anaerobic bacteria as Fusobacterium fusiforme and spirochete Borrelia Vincenti; Neisseria gonorrhoeae, Corynebacterium diphtheriae; Yersinia enterocolitis; Treponema pallidum; chlamydia; mycoplasmas; viral angina: herpangina (enteroviruses), herpetic/aphthous gingivostomatitis (HSV), rhinovirus, coronal viruses, adenoviruses, parainfluenza and influenza viruses, rare angina causative agents CMV, EBV, coxsackie AV, HIV-1 virus; mushrooms; other causative agents. acute laryngitis, acute laryngotracheobronchitis (croup) and bacterial tracheitis, epiglottitis diphtheria, pertussis, epidemic parotitis, CMV, EBV pneumonia - pneumococcal, staphylococcal, streptococcal, pneumonia caused by gram-negative microorganisms, chlamydia, legionella, viruses. - Liver infections (viral hepatitis, HBV vaccine, hepatitis markers) - skin, soft tissue, muscle and bone infections (erysipelas, furuncle, carbuncle, cellulitis, phlegmon, malignant facial staphylococcocal infection, necrotizing fasciitis of specific anatomical forms, myonecrosis, osteomyelitis).

	- rush fevers (scarlet, varicella, herpes zoster, measles, rubella). - HIV / AIDS, prevention, the procedure in the accidental exposures of health care professionals - sepsis, dental aspects of the emergence of sepsis - candidiasis, febrility of unknown origin - focal disease - anaerobic infections and intoxications (tetanus, botulism, gas gangrene), antitetanus protection - infections in pregnancy, age and infection, diabetes mellitus and infections - intra-hospital infections (IHI), measures of prevention and suppression of IHI in dental practice
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	
Learning outcomes:	Upon completing the course, the student must overwhelm the basics of the infectology approach to the patient (anamnesis that includes an epidemiological survey, physical examination, etiopathogenesis, differential diagnosis, diagnosis, general treatment approach). A special emphasis in mastering knowledge and skills will be given to diseases that are causally related to diseases of the mouth and teeth. Proper prevention and treatment of certain dental problems will prevent the development of some infectious diseases.
Teaching methods:	The course content will be presented in the form of: - interactive lectures - practical exercises Note: Interactive learning can be observed from several aspects: in the chamber ambience to check the student's knowledge of the course content that will be presented; animating students for discussions and subsequently clarifying unclear facts after the presented lecture; simulating a certain medical infectious and dental problem and the student's attempt to solve it, based on the given facts from the ex cathedra lectures data.
Assessment methods with assessment structure:	The final exam consists of a practical and theoretical part. In the practical part of the exam, the student is tasked to diagnose medical problem based on the adopted infectology approach of the patient. If the student passes the practical part of the exam, he / she will be allowed to take the theoretical part. Theoretical part of the exam is in written form, a test that consists of 30 questions. The first 5 questions in the test are eliminatory. Tests are compiled for each exam term, divided into groups A and B. The test is considered as passed if at least 60% of the questions is answered correctly. The final exam is valued by 50% of the overall grade. Regular attendance for lectures is valued by 25% of the overall grade. Regular practical exercise attendance is valued by 25% of the overall grade. Upon completion of the semester, a student can score a maximum of 100 points. Final grade is formed as follows: 10 (A) - 95-100 points;

	9 (B) - 85-94 points; 8 (C) - 75-84 points; 7 (D) - 65-74 points; 6 (E) - 55-64 points; 5 (F, F) - under 55 points.
Literature:	1. Southwick, Frederick. Infectious Diseases A Clinical Short Course 3. 3rd edition. New York: McGraw-Hill Professional; 2013. 2. Braunwald E (ed). Harrison's Principles of Internal Medicine. 17th edition. New York: McGraw-Hill; 2008.

Course syllabus Infectious diseases

Week	Form of teaching and materials	Number of hours
Week 1.	Lecture: General infectology, etiology, pathogenesis, clinical course, syndromes. Exercises: anamnesis in infectious disease	2 1
Week 2.	Lecture: Diagnosis, differential diagnosis. Therapy and prevention of infectious diseases Exercises: Taking material for microbiological analysis. Interpretation of results	2 1
Week 3.	Lecture: CNS infections Exercises: lumbar puncture, meningeal syndrome	2 1
Week 4.	Lecture: Infectious endocarditis, pneumonia Exercises: physical examination of the chest, diagnosis, imaging of X-rays	2 1
Week 5.	Lecture: Angina syndrome, acute laryngitis, laryngotracheobronchitis, bacterial tracheitis, epiglottitis Exercises: physical examination of the oral cavity	2 1
Week 6.	Lecture: pertussis, parotitis epidemica, CMV, EBV Exercises: physical examination of the head, neck, liver, spleen	2 1
Week 7.	Lecture: viral hepatitis Exercises: physical examination of the liver, dg. dif.dg.icteric syndrome, adoption of hepatitis marker interpretation	2 1
Week 8.	Lecture: Skin infections Exercises: physical examination of the skin	2 1
Week 9.	Lecture: rash diseases (scarlet fever, chicken pox, herpes zoster, measles, rubella) Exercises: physical examination. Differential diagnosis of rash	2 1
Week 10.	Lecture: HIV / AIDS Exercises: physical examination, dg. dif.dg. Access to a patient with HIV disease	2 1
Week 11.	Lecture: sepsis Exercises: physical examination, the importance of taking microbiological samples before inclusion of antimicrobials. Empirical therapy in suspected sepsis.	2 1

Week 12.	Lecture: candidiasis, fever of unknown origin - focalosis Exercises: anamnesis, physical examination, filling in the form on reporting side effects to the drug.	2 1
Week 13.	Lecture: anaerobic infections (tetanus, botulism, gas gangrene) Exercises: physical examination, pictorial presentation	2 1
Week 14.	Lecture: Infections in pregnancy Exercises: anamnesis, physical examination, dg dif dg.	2 1
Week 15.	Lecture: nosocomial infections (IHI) Exercises: anamnesis, epidemiological survey, filling in the IHI application form.	2 1
Week 16.	Final exam, Corrective exam period	
17-20.	Corrective exam period	

Item code: SFSIM0602E	**Course Title: OPHTHALMOLOGY**		
Cycle: integrated	**Year: III**	**Semester: VI**	**Number of ECTS credits:** 2
Status: elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 3th year of study		
Aim (objectives) of the course:	Acquisition of theoretical and practical knowledge in ophthalmology • knowledge of basic historical data important for ophthalmology, and its division by subdisciplines; • acquisition of knowledge and skills of ophthalmological examination and ophthalmological diagnostics; • acquiring basic knowledge of refraction, strabology, glaucoma; • acquisition of knowledge about inflammatory diseases of the anterior and posterior segment of the eye; • acquisition of knowledge about the etiology and type of cataract as well as modern operative methods of its treatment; • acquiring basic knowledge about vascular diseases of the fundus, as well as knowledge of endocrinoophthalmology and neuroophthalmology; • getting acquainted with the most common injuries of the eye and orbit as well as eye tumors;		

	• informing students about the types of surgical procedures that are most often performed in ophthalmology, as well as the application of lasers in ophthalmology.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Introduction to ophthalmology. Eye embryology, eye anatomy, eye physiology 2. Orbit and orbital pathology. Eyelids and eyelid diseases 3. The lacrimal apparatus and diseases of the lacrimal apparatus. Refractions and refractive anomalies of the eye 4. Red eye. Conjunctiva and conjunctival diseases. Cornea and corneal diseases. Iris and iris diseases 5. Uveitis and immunology in ophthalmology. Lenses and cataracts. Application of subconjunctival and parabulbar injections. Anesthesia in ophthalmology. Cataract surgery 6. Glaucoma. Primary, secondary, congenital. Medical, laser and surgical treatment of glaucoma 7. Retina and retinal diseases. Retinal detachment, diagnosis and treatment. 8. Macula lutea and macula disease. Laser in ophthalmology 9. Neuroophthalmology. Visual pathway and visual pathway diseases 10. Strabisms and amblyopia. Premature retinopathy (ROP), diagnosis and treatment 11. Tumors and pseudotumors of the eye. Melanoma of the eye, diagnosis and treatment 12. Emergencies in ophthalmology 13. Eye injuries, closed and open injuries. 14. Operations in ophthalmology 15. Systemic diseases and changes in the eyes.
Learning outcomes:	Students will master the basics of ophthalmological examination, diagnostic procedures in ophthalmology, be informed about the most common and significant eye diseases, as well as the method of their treatment. Special emphasis in mastering knowledge and skills will be given to dental and oral diseases that directly affect eye health. Proper prevention and treatment of certain dental problems will prevent the development of severe, most often inflammatory, eye conditions.
Teaching methods:	Interactive lectures Practical exercises for groups of no more than 10 students Note: Interactive learning (IU) involves a theoretical test of students' prior knowledge in the field to be taught for 10 minutes, followed by a discussion and subsequent clarifications after the lecture, for the next 10 minutes.
Assessment methods with assessment structure:	The exam consists of a practical and a theoretical part. The formation of the final grade is done in such a way that the number of total points earned, obtained through all forms of knowledge testing (practical exam and oral test) is formed into the final grade as follows: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Sefić M. i saradnici. Oftalmologija, Sarajevo: TKP Šahinpašić;

	1998. 2. Čupak K. i saradnici. Oftalmologija, Zagreb: Jumena;1990. Additional: 1. Mandić Z. i suradnici, Oftalmologija. Medicinska naklada Zagreb 2014. 2. Kanski J.J. Klinička oftalmologija. Beograd: Data Status, 2004. 3. Emina Alimanović Halilović. Laser u oftalmologiji. Sarajevo: NIR KCUS; 2006.

Course syllabus Ophthalmology

Week	Teaching and learning methods	Course load
Week 1.	Lecture: Introduction to ophthalmology. Eye embryology, eye anatomy, eye physiology Exercises: Ophthalmic history and status. Diagnostic methods in ophthalmology	2 1
Week 2.	Lecture: Orbit and pathology of the orbit. Eyelids and eyelid diseases Exercises: Examination of the anterior segment of the eye (eyelid everting, biomicroscopic examination of the conjunctiva, cornea, sclera, corneal staining with fluorescein, lavage of the lacrimal ducts).	2 1
Week 3.	Lecture: Lacrimal apparatus and diseases of the lacrimal apparatus. Refractions and refractive anomalies of the eye Exercises: Schirmer test 1 and 2. Tearing of tear ducts. Determination of visual acuity, subjectively and objectively	2 1
Week 4.	Lecture: Red eye. Conjunctiva and conjunctival diseases. Cornea and corneal diseases. Iris and iris diseases Exercises: Biomicroscopes examination - direct and slit light. Corneal staining with fluorescein, Placid keratometry, corneal sensitivity testing.	2 1
Week 5.	Lecture: Uveitis and immunology in ophthalmology. Lenses and cataracts Exercises: Application of subconjunctival and parabulbar injections. Anesthesia in ophthalmology. Cataract surgery.	2 1
Week 6.	Lecture: Glaucoma. Primary, secondary, congenital. Medical, laser and surgical treatment of glaucoma Exercises: Tonometry, gonioslopia, pachymetry, ophthalmoscopy, perimetry, OCT	2 1
Week 7.	Lecture: Retina and retinal diseases. Retinal detachment, diagnosis and treatment. Exercises: Ophthalmoscopy, direct and indirect. Ultrasound. Fluorescein angiography	2 1
Week 8.	Lecture: Macula lutea and macular diseases. Laser in ophthalmology Exercises: Amsler test, OCT, OCT angiography. Application of intravitreal injections. Laser types and patient preparation for laser treatment.	2 1
Week 9.	Lecture: Neuroophthalmology. Visual pathway and visual pathway diseases Exercises: Pupil reaction test, direct and indirect. Pathological reactions of the pupils. Relative pupillary defect. Color vision testing. Neurological outbursts in the visual field	2 1
Week 10.	Lecture: Strabisms and amblyopia. Premature retinopathy (ROP), diagnosis and treatment Exercises: Cover- Uncover test, Madox cross, synoptophore	2 1
Week 11.	Lecture: Tumors and pseudotumors of the eye. Melanoma of the eye, diagnosis and treatment Exercises: Diagnosis of tumors. Ultrasound, UBM ultrasound biomicroscopy, fluorescein angiography	2 1
Week 12.	Lecture: Emergencies in ophthalmology Exercises: Cause treatment. Occlusion treatment art. retinal central. Paracentesis	2 1

Week 13.	Lecture: Eye injuries, closed and open injuries. Exercises: Diagnosis of eye injuries. Seidel test. Removing a foreign body from the eye.	2 1
Week 14.	Lecture: Surgery in ophthalmology Exercises: Preparing the patient for surgery. Postoperative treatment	2 1
Week 15.	Lecture: Systemic diseases and changes in the eyes. Modern in ophthalmology Exercises: Patient examination and diagnosis	2 1
Week 17.	Final exam/retake	
Week 19.	Remedial	

FOURTH YEAR OF STUDY

Item code: SFSOS0701E	**Course Title: ORAL SURGERY**		
Cycle: integrated	**Year: IV**	**Semester: VII , VIII**	**Number of ECTS credits:** 10
Status: obligatory		**Total number of hours: 150** Optionally develop the distribution of hours by type: **Lectures** 60 **Exercises** 90	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	All students enrolled in the 4th year of study		
Aim (objectives) of the course:	Introduce the student to disinfection and sterilization Introduce the student to oral surgical propaedeutics, primarily how to take anamnesis with special attention to medically compromised patients Introduce the student to radiological diagnostics, which is of great importance for oral surgery Get acquainted with specific tools for tooth extraction, know the techniques of tooth extraction, complications during and after tooth extraction and therapy Get acquainted with the basic types of dentogenic infection, diagnostic methods, differential diagnosis and therapy Introduce the student to the indications for wound suturing, suture materials and accessories and suturing techniques as well as operative incisions in the oral cavity Get acquainted with the diagnostic and therapeutic methods for the purpose of recognizing and treating cystic formations in soft and hard tissues Get acquainted with the diagnostic and therapeutic methods for the purpose of recognizing and treating cystic formations in soft and hard tissues Get acquainted with the diagnostic and treatment methods of impacted and subimpacted teeth Introduce the student to diseases of the maxillary sinus with reference to dentogenic sinusitis (dg, dif dg, therapy) Introduce the student to the diagnosis and treatment of traumatic injuries in the oral cavity		

	Introduce the student to the indications, contraindications for apicotomy as well as the surgical procedure of apicotomy Introduce the student to the indications and surgical procedures in preparation of the patient for prosthetic replacement Introduce the student to the indications and contraindications for gingivectomy as well as surgical procedures for gingivectomy Introduce the student to benign formations in the oral cavity, diagnostic procedures and therapy
Thematic units:(*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units will enable the student to master the planned goals during two semesters of lectures, which is described in detail in the curriculum as a separate document.
Learning outcomes:	The student will master the techniques of local anesthesia and tooth extraction in the upper and lower jaw, recognize the infection of dentogenic etiology, master modern methods of immobilization of traumatized teeth. They will master diagnostic procedures with the aim of diagnosing oroantral communication, impacted and subimpacted teeth, cystic formations, gingivectomy and recognize any changes in the oral cavity that may prevent or complicate the production of prosthetic replacement
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Student can earn points in the following way: Activity in lectures - 5 points (VII and VIII) Activity on exercises with continuous monitoring independent work - 10 points (5 + 5 - VII and VIII) Knowledge test via test - in the 15th week 20 points (minimum number of points for passing is 10 points) Short evaluation of clinical work - in the 7th week of the summer semester 15 points Final exam 50 points (practical exam 10 points, oral exam 40 points) The maximum number of points is 100. The finalgrade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, 95-100 points. 9 (B) - above average, with some errors, 85-94 points 8 (C) - average, with noticeable errors, 75-84 points 7 (D) -generally good, but with significant shortcomings, 65-74 points. 6 (E) -satisfies the minimum criteria, 55-64 points. 5 (F) - does not meet the minimum criteria, less than 54 points.
Literature:	Required: 1. Kućanski B, Sulejmanagić H, Mustagrudić D, Gojkov T. Oral surgery, I part, II edition,editor: Sulejmanagić H. Sarajevo: USBiH; 1998. 2. Sulejmanagić H. Infections of odontogenic etiology. Sarajevo: USBIH; 2000. 3. Perović J, Jojić B. Oral surgery. Beograd; 2000. 4. Miše I. Oral surgery. Zagreb: Jumena, 2. izd. ;1988. 5. Knežević G. Oral surgey II. Medicinska naklada, Zagreb 2003. Supplementary: 1.Todorović et al, Oral surgery; Publishing: Nauka, I edition, 2002. 2.

	2.F.M. Andreasen, J.O. Andreasen, L.K. Bakland, M.T. Flores.Traumatic tooth injuries , 2008. 3. Peterson L, Ellis E, Hupp J, Tucker M. Contemporary Oral and Maxillofacial Surgery. 5th Edition, 2008. 4. Robinson P. Tooth Extraction: A Practical Guide. 2000; reprinted 2008. 5. Vlastimir Petrović, Snježana Čolić.Periapical lesions. Beograd; 2001.

Implementation plan of the course Oral Surgery VII semester

Week	Form of teaching and curriculum	Number of hours
Week 1.	Lecture: A brief overview of the historical development of oral surgery. Tooth extraction. Extraction instruments: pliers and levers. Exercises: Anamnesis protocol, disinfection and sterilization procedures in the oral surgery clinic	2 3
Week 2.	Lecture: Tooth extraction: Indications, contraindications, position of the doctor and the patient during tooth extraction in the upper and lower jaw. Basic stages of tooth extraction. Exercises: Recapitulation of instruments for tooth extraction	2 3
Week 3.	Lecture: Extraction of individual teeth. Multiple extractions. Tooth extraction in some systemic diseases Exercises: Recapitulation of tooth extraction instruments	2 3
Week 4.	Lecture: Extraction wound. Normal healing process of extraction wounds, difficult wound healing. Exercises: Recapitulation of instruments for tooth extraction and the position of the therapist and patient during the extraction of individual teeth	2 3
Week 5.	Lecture: Complications during tooth extraction: crown fracture, root, adjacent tooth injury, soft tissue injury, alveolar process injury, maxillary cavity opening, mandibular canal contents injury, luxation and mandibular fracture, accidental extraction of permanent tooth embryo Exercises: Demonstration of tooth extraction	2 3
Week 6.	Lecture: Complications after tooth extraction: bleeding, dolor postextractionem, and alveolitis, definition, etiology therapy. Exercises: Evaluation of tooth extraction knowledge	2 3
Week 7.	Lecture: Radiological diagnostics in oral surgery Exercises: Clinical independent work (anamnesis, examination of the patient, tooth extraction)	2 3
Week 8.	Lecture: Definition, etiology, diagnosis and differential diagnosis of dentogenic inflammation of the orofacial region. Basic types of infection: abscess, phlegmon. Predilection sites for the development of abscesses and phlegmon. Exercises: Clinical independent work (anamnesis, examination of the patient, tooth extraction)	2 3
Week 9.	Lecture: Acute dentogenic infection. Developmental stages of dentogenic inflammation. Subperiosteal and submucosal abscess. Phlegmon of the mouth. Therapy of dentogenic infection - physical-drug approach. Therapeutic use of antibiotics. Exercises: Clinical independent work (anamnesis, examination of the patient, tooth extraction)	2 3
Week 10.	Lecture: Odontogenic abscesses - lodges and spaces, sublingual, submandibular, submental, buccal, pterygomandibular, pterygopalatinal, parapharyngeal, retropharyngeal, parotidomaseteric, infratemporal, temporal and tongue abscess. Surgical treatment of dentogenic infection of the orofacial region. Principles of intraoral and extraoral incision - drainage. Exercises: Clinical independent work (anamnesis, examination of the patient, tooth extraction)	2 3
Week 11.	Lecture: Dentogenic infections of orofacial spaces that are not topographically anatomically defined: subperiosteal palatal space, peritonsillar space, upper lip base space, infraorbital space, periorbital space, mental and submaseteric space. Exercises: Clinical independent work (anamnesis, examination of the patient, tooth extraction)	2 3

Week 12.	Lecture: Ways of spreading dentogenic infection. Complications of dentogenic infection of the orofacial region. Differential diagnosis of edema in the cervicorofacial region. Exercises: Clinical independent work (anamnesis, examination of the patient, tooth extraction)	2 3
Week 13	Lecture: Osteomyelitis of the jaw bones Exercises: Clinical independent work (anamnesis, examination of the patient, tooth extraction)	2 3
Week 14.	Lecture: Maxillary sinusitis of dentogenic etiology: diagnosis, clinical picture and therapy. Foreign body in the maxillary sinus Exercises: Clinical independent work (anamnesis, patient examination, tooth extraction)	2 3
Week 15.	Lecture: Oroantral and oronasal communications and fistulas: etiology, clinical picture, diagnosis and therapy. Exercises: Clinical independent work (anamnesis, patient examination, tooth extraction)	2 3

Implementation plan of the course Oral Surgery VIII semester

Week	Form of teaching and curriculum	Number of hours
Week 1.	Lecture: Specifics of operative incisions and sutures in the oral cavity, material and instruments Exercises: Clinical independent work (anamnesis, examination of the patient, setting the indication for tooth extraction, tooth extraction, assisting during surgical interventions in the office and operating room	2 3
Week 2.	Lecture: Apicotomy. Definition, indications and contraindications for apicotomy. Preparation of teeth for apicotomy, operative course and postoperative treatment of the patient. Specifics of apicotomy of individual teeth, intraoperative and postoperative complications. Exercises: Clinical independent work (anamnesis, examination of the patient, setting indications for tooth extraction, tooth extraction, assistance during surgical interventions in the office and operating room	2 3
Week 3.	Lecture: Impacted and redundant teeth. Diagnosis and differential diagnosis. Classification Exercises: Clinical independent work (anamnesis, examination of the patient, setting the indication for tooth extraction, tooth extraction, assisting during surgical interventions in the office and operating room	2 3
Week 4.	Lecture: Surgical removal of individual impacted teeth. Surgical-orthodontic cooperation in the treatment of impacted teeth. Exercises: Clinical independent work (anamnesis, examination of the patient, setting the indication for tooth extraction, tooth extraction, assisting during surgical interventions in the office and operating room	2 3
Week 5.	Lecture: Oral tissue cysts. Definition and classification. Diagnosis and differential diagnosis of oral cysts. Clinical stages of cysts. Exercises: Clinical independent work (anamnesis, examination of the patient, setting the indication for tooth extraction, tooth extraction, assistance during surgical interventions in the office and operating room	2 3
Week 6.	Lecture: Odontogenic cysts. Inflammatory radicular cysts, apical and lateral. Developmental cysts. Solitary and fissure cysts. Exercises: Clinical independent work (anamnesis, examination of the patient, setting the indication for tooth extraction, tooth extraction) Assisting in surgical interventions in the office and operating room	2 3
Week 7.	Lecture: Therapy of small cysts and basic principles of therapy of large cysts. Exercises: Clinical independent work (anamnesis, examination of the patient, setting indications for tooth extraction, tooth extraction, assistance during surgical interventions in the office and in the operating room	2 3

Week 8.	Lecture: Traumatic injuries of the dentoalveolar system. The most common causes of injuries to deciduous and permanent teeth. Procedure in the treatment of a patient with a dental injury. Classification of injuries. Exercises: Clinical independent work (anamnesis, examination of the patient, setting the indication for tooth extraction, tooth extraction, assisting during surgical interventions in the office and operating room	2 3
Week 9.	Lecture: Root fractures in permanent teeth. Treatment of permanent tooth fractures Pathohistological aspect of healing in tooth root fractures. Injuries to periodontal tissues in dislocated teeth - classification and diagnosis. Exercises: Clinical independent work (anamnesis, examination of the patient, setting indications for tooth extraction, tooth extraction, assistance during surgical interventions in the office and in the operating room	2 3
Week 10.	Lecture: Therapy of disassembled permanent teeth. Splints, immobilization methods, critical review of types of immobilization systems. Alveolar process fractures. Exercises: Clinical independent work (anamnesis, examination of the patient, setting indications for tooth extraction, tooth extraction, assistance during surgical interventions in the office and in the operating room	2 3
Week 11.	Lecture: Basic concepts of oreplantation, transplantation and implantation. Treatment of traumatically extracted permanent tooth by replantation method. Exercises: Clinical independent work (anamnesis, examination of the patient, setting indications for tooth extraction, tooth extraction, assistance during surgical interventions in the office and in the operating room	2 3
Week 12.	Lecture: Healing of replanted tooth. Differences in the mechanisms of bone integration in implantation, replantation and transplantation. Prognosis of replanted teeth. Resorption of tooth root after replantation - types of resorption. Exercises: Clinical independent work (anamnesis, examination of the patient, setting the indication for tooth extraction, tooth extraction, assistance during surgical interventions in the office and operating room	2 3
Week 13.	Lecture: Preprosthetic soft and bone tissue surgery - diagnosis, differential diagnosis, therapy Exercises: Clinical independent work (anamnesis, examination of the patient, setting the indication for tooth extraction, tooth extraction, assistance during surgical interventions in the office and in the operating room	2 3
Week 14.	Lecture: Benign tumors of the oral cavity: diagnosis, differential diagnosis, therapy Exercises: Clinical independent work (anamnesis, examination of the patient, setting indications for tooth extraction, tooth extraction, assistance during surgical interventions in the office and in the operating room	2 3
Week 15.	Lecture: Gingivectomy. Classical gingivectomy, radical gingivectomy, Ceizinsky-Widmann Neumann. Gingivoalveolotomy. Exercises: Clinical independent work (anamnesis, examination of the patient, setting indications for tooth extraction, tooth extraction, assistance during surgical interventions in the office and in the operating room	2 3
Week 17.	Final exam	
Week 19.	Corrective exam	

Item code: SFSOS0702E	**Course Title: RESTORATIVE DENTAL MEDICINE**		
Cycle: integrated	**Year: IV**	**Semester: VII/VIII**	**Number of ECTS credits:** 9

Status: obligatory	**Total number of hours: 60; 105** Optionally develop the distribution of hours by type: **Lectures** 15; 15 Practicals: 45; 90
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]
Prerequisite for enrollment:	All students enrolled in the 4th year of dental studies. The condition for taking the final exam is passing the Preclinical Restorative Dentistry II exam (3rd year).
Aim (objectives) of the course:	The aim of the course is to provide students with theoretical and practical foundations on the treatment of caries, non-carious defects of hard dental tissues, dentinal hypersensitivity and aesthetic parameters, with parallel clinical work.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Operator positioning 2. Fundamentals of diagnostics in restorative dentistry 3. Caries therapy 4. Non-carious damage to hard dental tissues - diagnosis and therapy 5. Odontogenic pain control 6. Modern methods of caries removal 7. Aesthetic parameters in restorative dentistry 8. Discoloration and teeth whitening techniques 9. Fractures of hard dental tissues and their therapy 10. Causes of failure of restorative treatment and reparation of fillings
Learning outcomes:	At the end of the VII and VIII semesters of the course Restorative Dentistry, students will be able to: - describe the methods of diagnosing carious and non-carious defects of the hard dental tissues of the teeth, - explain the reaction of the pulpodentin complex to irritations, - describe the mechanisms of pain, and discuss the control of odontogenic pain, - be able to independently make cavities of all classes and properly reconstruct the defect of dental tissue with appropriate material - discuss the principles of minimally invasive dentistry, - identify non-carious lesions, dentinal hypersensitivity and tooth discoloration, and explain the ways and means of their care, - argue about the concept of aesthetic in restorative dentistry, - define the causes of failure of restorative treatment and the consequences of inadequate application of restorative materials.
Teaching methods:	Classes will take place through: - interactive lectures, - practicals and - consultations. Practicals involve the practical work of students on the patient. Practical work includes: anamnesis, clinical examination, diagnosis and treatment plan for carious and non-carious dental lesions. After agreement with the exercise leader, the student conducts the preparation of the cavity and the installation of direct filling with appropriate materials.
Assessment methods with assessment structure:	The practical exam and the theoretical part are taken into account during the assessment. The practical exam is assessed on the basis of the entire work during the semester, carries 20 points and includes:

	• independent diagnosis of carious and non-carious lesions of hard dental tissues, • Class I, II, III, IV and V cavity preparations on patients' teeth, • protection of the pulp-dentin complex, • application and finishing of direct filling. The theoretical part involves partial exams. Both partial exams are taken in writing during the 7th and 8th semesters, respectively. The first and second partial exams carry 35 points each and are considered passed if the student has achieved a minimum of 18 points on each. A student who has passed both the partial exams and the practical exam does not take the final exam. Students who have not passed the first and / or second partial exam take the final exam. At the final exam, the student must achieve a minimum of 55% correct answers. The final grade is formed by adding up the points achieved through partial exams and the practical exam or final exam, in the following way: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Živković i saradnici. Osnovi restaurativne stomatologije. Data Status, Beograd, 2009. 3. Šutalo i saradnici. Patologija i terapija tvrdih zubnih tkiva. Naklada Zadro, Zagreb, 1994. 4. *Ritter AV. Sturdevant's art & science* of *operative dentistry-e-book.* Elsevier Health *Sciences; 2017.* Additional: 1. Mount GJ, Hume WR. Preservation and restoration of tooth structure. Mosby International Ltd. 1998. 2. Summit JB, Robbins JW, Hilton TJ, Schwartz RS. Fundamentals of operative dentistry: a contemporary approach: Quintessence Publishing Co Inc, 2013.

Course syllabus Restorative dental medicine VII semestar

Week	Teaching and learning methods	Number of hours
Week 1.	Lecture: Introductory class (introduction to the content of the course, the way of teaching and exams, and literature) Practicals: Instructions for patient selection, keeping mandatory medical records, learning about patients' rights, keeping medical secrets, student dress code	1 3
Week 2.	Lecture: Infection control in clinical work Practicals: Equipment and instruments in the office; clinical dental workplace; competencies of physicians and dental nurses	1 3
Week 3.	Lecture: Clinical examination in restorative dentistry; assessment of carious lesion activity Practitals: Mandatory and optional protective equipment, infection control in clinical conditions, prevention of cross-contamination	1 3

Week 4.	Lecture: Isolation of the working field Practitals: Clinical examination in restorative dentistry - demonstration on the patient	1 3
Week 5.	Lecture: Diagnosis and differential diagnosis of caries, treatment plan Practitals: Dental examination, nomenclature and registration of teeth, removal of plaque. (students work in pairs)	1 3
Week 6.	Lecture: Radiographic detection of caries Practical: Dental examination, nomenclature and registration of teeth, removal of plaque (student working in pairs)	1 3
Week 7.	Lecture: Direct composite restorations I Practical: Interpretation of dental radiographs	1 3
Week 8.	Lecture: Direct composite restorations II Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	1 3
Week 9.	Lecture: Deep caries therapy (IPC, DPPC) Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	1 3
Week 10.	Lecture: Response of the pulpo-dentin complex to the action of stimuli Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	1 3
Week 11.	Lecture: Physical and chemical damage to hard dental tissues Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	1 3
Week 12.	Lecture: Dentine hypersensitivity Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	1 3
Week 13.	Lecture: Interactive repetition Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	1 3
Week 14.	Partial exam	1 3
Week 15.	Lecture: Interactive repetition Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	1 3

Course syllabus Restorative dental medicine VIII semestar

Week	Teaching and learning methods	Number of hours
Week 1.	Lecture: Non-invasive caries therapy; side effects of fluoridation	1 6

	Practicals: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	
Week 2.	Lecture: Modern methods of caries removal - minimally invasive approach Practicals: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	16
Week 3.	Lecture: Morphological and structural anomalies of hard dental tissues Practitals: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	16
Week 4.	Lecture: Aesthetic parameters in restorative dentistry Practitals: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	16
Week 5.	Tooth discoloration Practitals: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	16
Week 6.	Lecture: Teeth whitening techniques Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	16
Week 7.	Lecture: Lecture: Fractures of hard dental tissues and their therapy Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	16
Week 8.	Lecture: Causes of failure of restorative treatment Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	16
Week 9.	Lecture: Correction, reparation of fillings and secondary caries Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	16
Week 10.	Lecture: Biocompatibility of restorative materials Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	16
Week 11.	Lecture: Significance of occlusion in restorative dentistry Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	16
Week 12.	Lecture: Mechanisms of odontogenic pain occurrence and control of it. Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	16
Week 13.	Lecture: Interactive repetition Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	16
Week 14.	Partial exam	

Week 15.	Lecture: Interactive repetition Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	16

Item code: SFSOS0703E	**Course Title: REMOVABLE PROSTHODONTICS**		
Cycle: Integrated study	**Year: IV**	**Semester: VII and VIII**	**Number of ECTS credits: 14**
Status: Obligatory		**Total number of hours: 180 (60+120)** Optionally develop the distribution of hours by type: VII semester: 90 VIII semester: 90 Lectures 30 Lectures 30 Exercises 60 Exercises 60	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** **Department of Prosthodontics with Dental Implantology**
Prerequisite for enrollment:	The requirements are regulated by the Study Rules for the Integrated study program of the first and second cycle at the higher education institutions of the University of Sarajevo. All students enrolled in the 4th year of study
Aim (objectives) of the course:	The aim of Removable Prosthodontics course is to teach students the basic theoretical biomedical, technological knowledge, practical work and skills on which the clinical work in prosthetics therapy of completely or partially edentulous patients is based.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Module 1. Complete Denture 1. Complete edentulism. Classification system for complete edentulism. 2. Diagnostic procedures, treatment plan and prognosis. 3. Pre-prosthetic surgery. 4. Impressions of edentulous jaws. 5. Determination and registration of intermaxillary relations in complete denture patient. 6. The use of dental articulators in the manufacture of complete dentures. 7. Selection of anterior and posterior teeth. Arrangment (set-up) of anterior and posterior teeth in patients with a I skeletal class. 8. Specifics of artificial teeth arrangment in patients with II and III skeletal class. Occlusal concepts in complete denture. 9. The Wax Try-in clinical procedures. 10. Retention and stabilization of complete dentures. 11. Insertion of complete dentures, control check-ups. Mistakes in making complete dentures. 12. Immediate complete denture. Repairs and relining of complete dentures. 13. New technologies in the production of complete dentures. 14. Advantages and limitations of digitally made complete dentures. 15. Complete denture on dental implants. Modul 2. Partial Denture 1. Partially edentulism. 2. Classification of partially edentulism - topographical and functional classification.

	3. Acrylic partial denture. Immediate and transitional partial dentures. 4. Removable partial denture (RPD). 5. Dentalsurveyor. Retention of removable partial denture. 6. Biostatics and planning of removable partial denture. 7. Clinical procedures in therapy of removable partial dentures: diagnosis and treatment plan, preparation of supporting tissues, impressions for partial denture, try-in of the cast metal framework of the partial denture, determining and registering intermaxillary relations. 8. Clinical procedures in therapy of removable partial dentures: determining and registering intermaxillary relations, use of facebow and an articulator, selection of artificial teeth, occlusion concepts. 9. Clinical procedures in therapy of removable partial dentures: perform try-in of the partial denture, delivering the removable partial denture, instruct the patient in oral hygiene, check-ups, corrections, repairs and relining of partial dentures. Esthetics of partial dentures. 10. Complex partial dentures. 11. Partial dentures with attachments, part I. 12. Partial dentures with attachments, part II. 13. Partial telescope dentures. 14. Other types of partial dentures. Subtotal dentures. 15. Digital techniques and new materials in the production of partial dentures.
Learning outcomes:	Module 1. Complete Denture Knowledge: - Describe the consequences of complete edentulism on stomatognathic system and the denture bearing areas of upper and lower complete dentures - Indicate pre-prosthetic therapy of the patient - Describe all clinical and laboratory stages of fabricating conventionally and digitally made complete dentures - Retention and stabilization of the complete denture - The indications and planning complete denture on implants - Instruments, materials, clinical equipment and devices Skills: - Carry out diagnostic procedures and make a treatment plan for complete edentulous patients, analyze X-rays - Taking impressions of the edentulous jaws, preliminary and functional impression - Determining and registering intermaxillary relations, apply the - facebow and articulator - Perform a clinical trial of artificial teeth arrangement, try-in denture and insertion of complete dentures - Instruct the patient in oral hygiene Competences: - Independently perform all clinical stages of fabricating complete dentures - Make an immediate denture and perform relining of complete

	dentures Modul 2. Partial Denture Knowledge: - Describe the consequences of partially edentulism on stomatognathic system and set indications for fabricating partial dentures - Describe the components of removable partial denture - Describe dental surveyor, use in removable partial denture design planning - Retention and stabilization of a partial denture - Describe the clinical phases of fabricating partial dentures and correlate them with laboratory phases - Types of attachments - sliders, ball attachments, Ceka, bars, double crowns and clinical phases of fabricating complex/combined fixed and removable prostheses - New technologies and materials for fabricating of partial dentures - Instruments, materials, clinical equipment and devices Skills: - Perform diagnostic procedures and make a treatment plan for partially edentulous patients, analyze X-rays - Taking a preliminary and functional impression in partially edentulous patients - Try-in of the cast metal framework of the partial denture - Determining and registering intermaxillary relations in partially edentulous patients - Perform try-in of the partial denture, clinical trial of the set teeth and occlusion - Delivering the removable partial denture and instruct the patient in oral hygiene Competences: - Planning the base and component elements of cast partial dentures according to the rules of biostatics on working models - Independently perform all clinical stages of fabricating acrylic partial denture and cast partial dentures.
Teaching methods:	Instruction is carried out as follows : - ex catedra lectures for all students and - practical exercises
Assessment methods with assessment structure:	Acquired knowledge and skills are tested continually during the semester. In the structure of the total number of points, the student can achieve for activities and knowledge tests: - activity - individual work with patients in clinical exercises – maximum 10 points, minimum 5,5 points - partial exam in the 15th week of classes of the first semester – maximum 40 points, minimum 22 points - final exam – maximum 50 points, minimum 27,5 points.

	The partial exam consists of a practical test of knowledge and an oral examination of theoretical knowledge. The student takes the practical part of the partial exam in the 15th week of the first semester as part of clinical exercises. The condition for taking the oral examination of theoretical knowledge of the partial exam is passing the practical part of the exam. The final exam consists of a practical test of knowledge and an oral examination of theoretical knowledge. The student takes the practical part of the final exam in the 15th week of the second semester as part of clinical exercises. The condition for taking the oral examination of theoretical knowledge of the final exam is passing the practical part of the exam. The passed practical part of the exam is valid for one academic year. A student who did not pass the partial knowledge test takes the integral practical and/or theoretical part of both semesters on the final exam. A student can score a maximum of 90 points, and a minimum of 49.5 points, on the final exam, which is taken integrally. The passing score level on the exam is 55%. In accordance with the above the grade scale is as follows: a) 10(A) - exceptional success without errors or with insignificant errors - 95-100 points b) 9(B) - above average with few errors- 85-94 points; c) 8 (C) - average with noticeable errors - 75 -84 points; d) 7(D) - generally good but with significant errors- 65-74 points; e) 6(E) - meets the minimum criteria - 55-64 points; f) 5 (F, FX) – does not meet the minimum criteria, less than 55 points.
Literature:	**Required literature:** 1. Zarb G, Hobkirk JA, Eckert SE, Jacob RF. Prosthodontic Treatment for Edentulous Patients. Complete Dentures and Implant-Supported Prostheses. St. Louis: Elsevier Mosby, 2013. 2. Phoenix RD, Cagna DR, DeFreest CF. Stewart's Clinical Removable Partial Prosthodontics. Chicago: Quintessence, 2003. 3. Tamimi F, Hirayama H. Digital Restorative Dentistry. A Guide to Materials, Equipment, and Clinical Procedures. Springer, 2019. **Recommended literature:** 1. Diriscoll CF, Golden WG. Treating the Complete Denture Patient. Wiley Blackwell, 2020. 2. Şakar O. Removable Partial Dentures. A Practitioners' Manual. Springer, 2016. 3. Chang T-L, Orellana D, Beumer J III. Kratochvil's Fundamentals of Removable Partial Dentures. Chicago: Quintessence, 2019.

COURSE SYLLABUS: REMOVABLE PROSTHODONTICS MODUL 1 – COMPLETE DENTURE VII semester

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lectures, exercises)
Week 1.	Lecture: Complete edentulism - the consequences of complete edentulism on stomatognathic system, denture bearing area anatomy. Classification system for complete edentulism. Exercises: Taking anamnesis, clinical examination of a completely edentulous patient, prognosis and treatment plan, analyzing x-rays.	2 4
Week 2.	Lecture: Diagnostic procedures, treatment plan and prognosis - anamnesis, clinical examination, additional diagnostic tests, treatment plan. Exercises: Taking preliminary impression of the upper and lower jaws.	2 4
Week 3.	Lecture: Pre-prosthetic surgery - surgical interventions on the jaw bones and soft tissues of the oral cavity with the aim of improving the anatomical and morphological conditions of the edentulous jaws. Exercises: Adapting the upper and lower custom tray to the patient's mouth.	2 4
Week 4.	Lecture: Impressions of edentulous jaws - Preliminary impression - Functional impression Denture bearing areas that should be unloaded. Exercises: Taking a functional impression of the upper and lower jaws.	2 4
Week 5.	Lecture: Determination and registration of intermaxillary relations in complete denture patient. Errors that may occur in determining the intermaxillary relations. Exercises: Determination and registration of intermaxillary relations at completely edentulous patients, selection of artificial teeth.	2 4
Week 6.	Lecture: The use of dental articulators in the manufacture of complete dentures. The procedure of working with facebow and transferring models to an articulator. Virtual articulator. Exercises: Work with a standard facebow.	2 4
Week 7.	Lecture: Selection of anterior and posterior teeth– selection of size, shape color and material of artificial teeth. Arrangment (set-up) of anterior and posterior teeth in patients with a I skeletal class. Exercises: Registration of excentric positions of the mandible and obtaining of position registrates.	2 4
Week 8.	Lecture: Specifics of artificial teeth arrangment in patients with II and III skeletal class. Occlusal concepts in complete denture. Exercises: Trial denture - try-in denture in the mouth, clinical trial of artificial teeth setup.	2 4
Week 9.	Lecture: The Wax Try-in clinical procedures. Exercises: Trial denture - try-in denture in the mouth, clinical trial of artificial teeth setup.	2 4
Week 10.	Lecture: Retention and stabilisation of complete dentures. Exercises: Occlusal concepts in complete denture. Bilateral balanced occlusion.	2 4
Week 11.	Lecture: Insertion of complete dentures, control check-ups. Mistakes in making complete dentures, their consequences and treatment. Exercises: Insertion of complete dentures, checking retention and occlusion, reocclusion of complete dentures, instructions for oral hygiene.	2 4
Week 12.	Lecture: Immediate complete denture.	2

	Repairs and relining of complete dentures. Exercises: Specific in clinical work during the production of immediate denture. Repairs and relining of complete dentures.	4
Week 13.	Lecture: New technologies in the production of complete dentures - Complete dentures fabricated by CAD-CAM technology and 3D printing Exercises: Specific in clinical work during the production of digital complete denture.	2 4
Week 14.	Lecture: Advantages and limitations of digitally made complete dentures. Digital workflow of complete denture. Comparison of conventional and digital workflow. Exercises: Laboratory phases of digital complete denture production.	2 4
Week 15.	Lecture: Implant - prosthetics therapy of complete edentulism – Complete denture on dental implants. Exercises: Planning of complete denture on dental implants, anamnesis, clinical examination and analysis of radiographic images.	2 4

COURSE SYLLABUS: REMOVABLE PROSTHODONTICS MODUL 2 – PARTIAL DENTURE VIII semester

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lectures, exercises)
Week 1.	Lecture: Partially edentulism - the consequences of partially edentulism on stomatognathic system. Exercises: Taking anamnesis, clinical examination of a partially edentulous patient, prognosis and treatment plan, analyzing x-rays.	2 4
Week 2.	Lecture: Classification of partially edentulism - topographical and functional classification. Classification of partial dentures. Shapes of partial dentures. Tasks of partial denture prosthetic treatment. Exercises: Indication for type of partial denture, preparation of supporting tissues.	2 4
Week 3.	Lecture: Acrylic partial denture. Immediate and transitional partial dentures. Exercises: Taking preliminary impression of the upper and lower jaws and analysis of study model.	2 4
Week 4.	Lecture: Removable partial denture (RPD) – indications and countraindications, elements of the removable partial denture (gingival part of the removable partial denture, dental part of the denture and connection between the gingival and dental part of the denture. Exercises: Taking functional impression of the upper and lower jaws in partially edentulous patients.	2 4
Week 5.	Lecture: Dentalsurveyor– classification, parts of dental surveyor, principle of work with a dental surveyor, tasks in working with the dental surveyor Path of insertion the denture, displacement of the denture, tooth equator, guiding planes. Retention of removable partial denture. Measurement of retention force according to BIOS system. Exercises: Planning the base and component elements of cast partial dentures according to the rules of biostatics on working models, elements of retention and stabilization.	2 5
Week 6.	Lecture: Biostatics of removable partial denture. Planning of removable	2

	partial denture. Analysis of study models in articulator and in the dental surveyor. RPD planning in dental surveyor, RPD planning principles. Exercises: Determination and registration of intermaxillary relations in acrylic dentures.	4
Week 7.	Lecture: Clinical procedures in therapy of removable partial dentures: diagnosis and treatment plan, preparation of supporting tissues, impressions for partial denture, try-in of the cast metal framework of the partial denture, determining and registering intermaxillary relations. Exercises: Try-in of the cast metal framework of partial denture and determining and registering intermaxillary relations in removable partial dentures.	2 4
Week 8.	Lecture: Clinical procedures in therapy of removable partial dentures: determining and registering intermaxillary relations, use of facebow and an articulator, selection of artificial teeth, occlusion concepts. Exercises: Work with a standard facebow, registration of excentric mandibular positions and obtaining of position registrates.	2 4
Week 9.	Lecture: Clinical procedures in therapy of removable partial dentures: perform try-in of the partial denture, delivering the removable partial denture, instruct the patient in oral hygiene, check-ups, corrections, repairs and relining of partial dentures. Esthetics of partial dentures. Exercises: Try-in of partial denture.	2 4
Week 10.	Lecture: Complex partial dentures – prosthodontics treatment using combined fixed and removable prostheses, indications and guidelines in clinical fabrication. Fixed substitutes intended to accept removable partial denture, milling in dental prothetics, connection between fixed and removable substitutes. Exercises: Delivery of partial dentures.	2 4
Week 11.	Lecture: Partial dentures with attachments, part I – general characteristics of attachments, retention and stabilisation of removable partial denture with attachments, guidance of substitutes, dental occlusal loads, classification of attachments, slide attachments, ball attachments, Ceka attachments, bar attachments, joints. Exercises: Check-ups, denture corrections, repairs, realigning.	2 5
Week 12.	Lecture: Partial dentures with attachments, part II– manufacture of dentures with attachments - RPD planning principles on attachments, specifics of clinical part of manufecturing dentures on attachments, specifics of the laboratory fabrication of denture with attachments, check-ups, repairs of partial dentures with attachments. Exercises: Therapy of partial eduntulism with partial dentures with attachments, guidelines for clinical application.	2 4
Week 13.	Lecture: Partial telescope dentures– general characteristics of double crowns double telescope crowns, double cone crowns. Fabrication of partial telescope denture - materials in the fabrication of double crowns, planning principles, specifics of clinical part of manufecturing dentures, specifics of the laboratory fabrication of partial telescope dentures, check-ups. Exercises: Therapy of partial eduntulism with partial telescope dentures, guidelines for clinical application.	2 4
Week 14.	Lecture: Other types of partial dentures – overdenture, flexible partial dentures, partial dentures on implants, opturators and post-resection partial dentures, metal-free partial dentures. Subtotal dentures – subtotal edentulism and subtotal dentures, clinical evaluation, diagnostic models and tretament plan, subtotal edentulism therapy, functional and esthetic values	2

	of sub-total dentures. Exercises: Immediate and transitional partial dentures. Subtotal edentulism treatment, selection of retention and stabilisation elements.	 4
Week 15.	Lecture: Digital techniques and new materials in the production of partial dentures. Digital impression, computer modeling of the metal framework of the partial denture, fabrication of the cast metal framework by sintering Co-Cr-Mo alloys, 3D printing working model. Exercises: Guidelines for clinical and laboratory phases of making partial dentures using digital techniques.	2 4

Item code: SFS0S0704E	**Course Title: ORAL MEDICINE PATHOLOGY 1**		
Cycle: integrated	**Year: IV**	**Semester: VII**	**ECTS credits: 4**
Status: obligatory		**Total hours: 30** **Lectures** 15 **Practice** 14 **Seminar:** 1	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs**		
Prerequisite for enrollment:	All students enrolled in the 4th year of study		
Aim (objectives) of the course:	The aim of the course is to educate students about the etiopathogenesis, clinical expressions and therapeutic measures of numerous pathological conditions and diseases that manifest in the mouth. Through theoretical and practical classes, train students to recognize and notice early symptoms, to adequately apply preventive measures and to eliminate local pathological processes with timely and adequate therapy or to treat systemic diseases in cooperation with an appropriate specialist.		
Thematic units: *(If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)*	1. Morphological characteristics of oral mucosa 2. Physiological characteristics of oral mucosa 3. Pathological characteristics of oral mucosa 4. Defense factors in the oral cavity 5. Orofacial pain 6. Exogenous and endogenous damage to oral mucosa 7. Cheilitis: exfoliative, solar, allergic 8. Cheilitis: angular, glandular, apostematous 9. Anomalies and inflammations of the tongue 10. Bacterial infections of oral mucosa 11. Specific bacterial infections 12. Viral infections of oral mucosa (DNA viruses) 13. Viral infections of oral mucosa (RNA viruses) 14. Viral hepatitis and HIV infections 15. Fungal infections of oral mucosa		

Learning outcomes:	Through the subject Oral Medicine Pathology, the student will know the morphological, physiological and pathological characteristics of the oral mucosa.
	They will understand the etiology, epidemiology and immunopathogenesis of oral mucosal diseases. He will be acquainted with the multifactorial etiology of damage to the oral mucosa. The student will be educated to recognize inflammatory changes and developmental anomalies of the tongue and lips, and will acquire basic knowledge about specific and non-specific infections of the oral mucosa, with the aim of recognizing and differentiating bacterial, viral and fungal infections of the oral mucosa.
Teaching methods:	The course is held: 1. lecture ex-cathedra for all the students 2. clinical exercises (practice)
Assessment methods with assessment structure:	One of the forms of activity is the lecture and practical exercises attendance. The assessment of theoretical knowledge from the completed semester will be conducted in the written form – by means of a test. Points can be acquired in the following way: - Regular attendance at lectures - 5 points - Attendance at exercises - 5 points - Active participation in exercises - 10 points (midterm test in the 7th week - 5 points, seminar paper in the 15th week - 5 points) - Partial exam through a test - 25 points In this semester a student can acquire a maximum of 45 points. The points that a student acquires in this semester are added to the points in semester VIII and together they make up a final grade.
Literature:	Mandatory: 1. Topić B. et al. Oral Medicine, Faculty of Dentistry, Sarajevo, 2001. 2. Dedić A. Autoimmune Oral Diseases - Practicum, Sarajevo, 2010. 3. Pašić E., Hadžić S., Gojkov Vulelić M., Hukić M. Oral Microbiology, Faculty of Dentistry, Sarajevo, 2017. 4. Hadžić S., Gojkov Vukelić M., Pašić E., Mujić Jahić I., Muharemović A. Potentially Malignant Oral Disorders - Oral Precanceroses, Faculty of Dentistry, Sarajevo, 2022. Supplementary: 1. Dedić A. Diabetes Mellitus - Oral Aspects, University Edition, Sarajevo, 2004. 2. Đukanović D. et al. Atlas of Soft Tissue Diseases of the Oral Cavity, Belgrade, 2001. 3. Laskaris G. Atlas of Oral Diseases, III revised edition (translated into Croatian), Zagreb 2003. 4. Greenberg M., Glick M. Burket's Oral Medicine, Diagnosis and Treatment, 10th edition, Medical Publishing, Zagreb 2006.

Implementation plan for the course: Oral medicine pathology VII semester

Week	Form of teaching and curriculum	Number of hours
Week 1.	Lecture: Morphological characteristics of oral mucosa Practice: Preclinical exercises	1 1
Week 2.	Lecture: Physiological characteristics of oral mucosa Practice: Preclinical exercises	1 1

Week 3.	Lecture: Pathological characteristics of oral mucosa Practice: Preclinical exercises	1 1
Week 4.	Lecture: Defense factors in the oral cavity Practice: Preclinical exercises	1 1
Week 5.	Lecture: Orofacial pain Practice: Preclinical exercises	1 1
Week 6.	Lecture: Exogenous and endogenous damage to oral mucosa Practice: Preclinical exercises	1 1
Week 7.	Lecture: Cheilitis: expholiativa, sollaris, allergica Practice: Preclinical exercises	1 1
Week 8.	Lecture: Cheilitis: angularis, glandularis, apostematosa Practice: Preclinical exercises	1 1
Week 9.	Lecture: Anomalies and inflammations of the tongue Practice: Preclinical exercises	1 1
Week 10.	Lecture: Bacterial infections of the oral mucosa Practice: Preclinical exercises	1 1
Week 11.	Lecture: Specific bacterial infections Practice: Preclinical exercises	1 1
Week 12.	Lecture: Viral infections of the oral mucosa (DNA viruses) Practice: Preclinical exercises	1 1
Week 13.	Lecture: Viral infections of the oral mucosa (RNA viruses) Practice: Preclinical exercises	1 1
Week 14.	Lecture: Viral hepatitis and HIV infections Practice: Discussion on seminar paper topics (dilemmas)	1 1
Week 15.	Lecture: Fungal infections of the oral mucosa Practice: Seminar paper	1 1

Item code: SFS0S0704E	**Course Title: ORAL MEDICINE PATHOLOGY I**		
Cycle: integrated	**Year: IV**	**Semester: VIII**	**Number of ECTS credits:** 5
Status: obligatory		**Total number of hours: 60** **Lectures** 30 **Exercises** 30	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrolment:	All students enrolled in the 4th year of study		
Aim (objectives) of the course:	- To educate students about etiopathogenesis, immunepathogenesis, implications of systemic and autoimmune diseases in the oral mucosa. - To teach the students about the significance of multidisciplinary diagnostics and treatment of the diseases of the oral mucosa and focal complex.. -To introduce the students with drug therapy, significance of drug interactions in the treatment of oral mucosa.		

	- To train students to recognize and spot initial symptoms of a disease and syndrome, and to work multidisciplinary, in cooperation with corresponding specialist, and conduct treatment protocols.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Recurrent aphthous stomatitis, Behçet's syndrome 2. Allergies 3. Saliva, tests, developmental anomalies 4. Diseases of the salivary glands 5. White lesions (part 1) 6. White lesions (part 2) 7. Autoimmune diseases (part 1) 8. Autoimmune diseases (part 2) 9. Oral diseases in children 10. Oral diseases in the elderly 11. Orofacial pain 12. Endocrine diseases (part 1) 13. Endocrine diseases (part 2) 14. Oral-dermatological syndromes 15. Laboratory diagnostics of infections in the oral cavity
Learning outcomes:	The student will be familiarized with the multicausal etiology, pathognomonic efflorescence of recurrent ulcers with pathohistological verification (vasculitis), and clinical forms and stages of SAR (Systemic Autoimmune Reactions). They will understand the symptoms, clinical picture, pathophysiology, and immunological events in various types of allergic reactions. The necessary diagnostic procedures for establishing a diagnosis (clinical picture, laboratory findings, and allergy tests) will be presented. The student will acquire basic theoretical knowledge about salivary gland diseases and modern approaches in diagnosis and therapy. They will be familiarized with the definition of pain, pain modulation, classification of orofacial pain, differential diagnosis of pain, as well as the mechanisms of pain syndromes and the importance of dentists in the team approach to treating orofacial pain. The student will be acquainted with the etiology, clinical picture, histopathology, and therapy of white lesions, the importance of differential diagnosis, and the significance of clinical, microbiological, exfoliative cytological, and pathohistological findings. Through theory, they will acquire basic knowledge about the significant impact of humoral and cellular immune responses in oral autoimmune diseases, understand the differential diagnosis of autoimmune diseases, and interpret macroscopic, pathohistological, immunofluorescent, microbiological, and laboratory findings and tests.
Teaching methods:	The course is held: 1. lecture ex cathedra for all the students 2. clinical exercises
Assessment methods with assessment structure:	One of the forms of activity is lecture and practice attendance. Theoretical exam from the completed semester is going to be realized in the form of oral exam. - regular lecture attendance - 5 points, - practice attendance – 5 points - practical exam – 10 points - oral exam – 35 points. In this semester the student can acquire a maximum of 55 points. A student that didn't pass the partial exam at the end of semester VIII takes the entire curriculum from semesters VII and VIII orally.

	Final grade consists of the sum of points a student has acquired in semester VII and the sum of points from semester VIII. 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points; 9 (B) - above average, with some errors, carries 85-94 points; 8 (C) - average, with noticeable errors, carries 75-84 points; 7 (D) -generally good, but with significant shortcomings, carries 65-74 points; 6 (E) -satisfies the minimum criteria, carries 55-64 points; 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Mandatory: 1. Topić B. et al. Oral Medicine, Faculty of Dentistry, Sarajevo, 2001. 2. Dedić A. Autoimmune Oral Diseases - Practicum, Sarajevo, 2010. 3. Pašić E., Hadžić S., Gojkov Vulelić M., Hukić M. Oral Microbiology, Faculty of Dentistry, Sarajevo, 2017. 4. Hadžić S., Gojkov Vukelić M., Pašić E., Mujić Jahić I., Muharemović A. Potentially Malignant Oral Disorders - Oral Precanceroses, Faculty of Dentistry, Sarajevo, 2022. Supplementary: 1. Dedić A. Diabetes Mellitus - Oral Aspects, University Edition, Sarajevo, 2004. 2. Đukanović D. et al. Atlas of Soft Tissue Diseases of the Oral Cavity, Belgrade, 2001. 3. Laskaris G. Atlas of Oral Diseases, III revised edition (translated into Croatian), Zagreb 2003. 4. Greenberg M., Glick M. Burket's Oral Medicine, Diagnosis and Treatment, 10th edition, Medical Publishing, Zagreb 2006.

Implementation plan for the course Oral medicine VIII semester

Week	Form of teaching and curriculum	Number of hours
Week 1	Lecture: Recurrent aphthous stomatitis, Behçet's syndrome Practice: Anamnestic diagnostic procedure	2 2
Week 2	Lecture: Allergies Practice: Anamnestic diagnostic procedure	2 2
Week 3	Lecture: Saliva, tests, developmental anomalies Practice: Clinical examination of oral mucosa	2 2
Week 4	Lecture: Diseases of salivary glands Practice: Clinical examination of oral mucosa	2 2
Week 5	Lecture: White lesions Practice: Tests in oral medicine	2 2
Week 6	Lecture: White lesions Practice: Native smear (preparation and analysis)	2 2
Week 7	Lecture: Autoimmune diseases Practice: Analysis of clinical cases through images and presentations	2 2
Week 8	Lecture: Autoimmune diseases Practice: Analysis of clinical cases through images and presentations	2 2

Week 9	Lecture: Oral diseases in childhood Practice: Individual work with the patient	2 2
Week 10	Lecture: Oral diseases in the elderly Practice: Individual work with the patient	2 2
Week 11	Lecture: Endocrine diseases Practice: Individual work with the patient	2 2
Week 12	Lecture: Endocrine diseases Practice: Individual work with the patient	2 2
Week 13	Lecture: Hereditary skin diseases Practice: Individual work with the patient	2 2
Week 14	Lecture: Oral-dermatological syndromes Practice: Individual work with the patient	2 2
Week 15	Lecture: Laboratory diagnostics of infections in the oral cavity Practice: Individual work with the patient	2 2
Week 17	Final exam (oral test)	
Week 19	Makeup exam date for students who have not passed the final exam.	

Item code: SFSIS0707	**Course Title: Dental Radiology**		
Cycle: integrated	**Year: IV**	**Semester: VII**	**Number of ECTS credits:** 5
Status: obligatory		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 4th year of study		
Aim (objectives) of the course:	Introducing students to X-ray radiation and the biological effects of radiation. Acquiring knowledge about examination methods in dental radiology/roentgenography. Acquiring knowledge about radiological anatomy and radiological descriptions of diagnosis and differential diagnosis of pathological conditions, anomalies and trauma in the dentofacial area.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units were formed with the aim that the student learns the theoretical and practical knowledge of performing radiological imaging techniques, radiological descriptions, and radiological diagnostics in the dentofacial area.		
Learning outcomes:	Knowledge: After attending the class, the student should know: - how to use dental radiology to diagnose, plan therapeutic dental procedures and to monitor the development of the disease and the results of treatment. Skills:		

	The student should know: -how to apply intraoral and extraoral recording techniques, digital radiography and special techniques in dental radiography. - can analyze dental radiographs. Competences: To be able to apply all radiological procedures in dental practice and to use the X-ray to solve diagnostic dilemmas in diseases of the dentofacial region.
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Continuous assessment of knowledge during the semester. The final grade will be formed on the following elements: - obligatory attendance at lectures and active participation 20% - compulsory attendance and active participation in practical exercises 20% - one written and successfully defended seminar work on the course subject 10% - Final exam consisting of the practical and theoretical part of the exam, which is valued by 50% of the final grade (practical part/ theoretical part ratio: 20%:30%) The practical part of the final exam involves: MCQ test, analysis and description of dental radiographs. The theoretical part of the exam implies an oral examination of knowledge acquired based on the implementation plan and program. The final exam is passed if the practical part of the exam is passed with at least 55% of exactly answered questions, and successfully passed the oral part of the exam. Final grade is formed as follows: 10 (A) - 95-100 points, 9 (B) - 85-94 points, 8 (C) - 75-84 points, 7 (D) - 65 - 74 points, 6 (E) - 55-64 points, 5 (F, FX) - below 55 points.
Literature:	Required: 1 White SC, Pharoah MJ. Oral Radiology, Priciples and Interpretation. Fourth Edition, Mosby; 2000. 2. Rasmus TF, Wiliamson GF. Current Oral and Maxillofacial imaging. W.B. Saunders Company; 1996

Implementation plan for the course: Dental radiology

Week	Course form and content	Hours
Week 1.	Lectures: Introduction, methods of conventional and digital examination in dental radiology (types of images and indications) Practice: Technical correctness of images, recognition of types of images in dental radiology	2 1
Week 2.	Lectures: Radiological anatomy of normal structures of the orofacial system Practice: : darkness and lightness in normal radiology , analysis and differentiation of radiological characteristics of teeth and jaws.	2 1
Week 3.	Lectures: Fundamentals of CBCT technology. Radiological visualization of the anatomy of the facial skeleton: -anatomy of the maxilla -anatomy of the mandible Practice: Visiting the X-ray department. Introduction to the CBCT apparatus, Constituent parts, and the recording technique.	2 1
Week 4.	Lectures: Quantitative and qualitative evaluation of the maxilla and mandible Planning dental implants using CBCT: -planning in the area of the anterior and posterior mandible -planning in the area of the anterior and posterior maxilla. Practice: Analysis of anatomical structures on CBCT images. Implantology planning by software	2 1
Week 5.	Lectures: Radiological diagnostics in fixed prosthetics. Consequences of occlusal trauma, areas of vertical and horizontal bone resorption and exposed furcations, axial inclination of teeth, continuity and integrity of laminae durae, and previous endodontic treatments with or without posts and the presence of apical changes. Clinical crown versus root relationship (Ante's rule) of root fracture, analysis of existing fixed prosthetic works. Lectures: Radiographic analysis of anatomical and morphological characteristics and diagnosis of pathological changes of the temporomandibular joint. Practice: Analysis of radiographs, diagnosis and differential diagnosis of oral conditions. Correlation of radiographic characteristics with the clinical picture	1 1 1
Week 6.	Lectures: Radiological characteristics of the pathology of hard dental tissues Practice: Radiological analysis and diagnostics of hard dental tissues (Analysis of retroalveolar, bite-wing and OPG images)	2 1
Week 7.	Lectures: Radiological diagnostics in endodontics Practice: Radiological analysis and diagnostics in endodontics (analysis of OPG and CBCT images)	2 1
Week 8.	Lecture: The importance of radiological diagnostics in the detection of problems of significance for surgical cases and the planning of oral surgical procedures Practice: Analysis of X-ray images for diagnosis of different problems in oral surgery	2 1
Week 9.	Lectures: Use of MRI and CT in viscerocranial diagnostics Exercises: Analysis of MRI and CT in viscerocranial diagnostics	2 1
Week 10.	Lectures: Analysis of orthopantomograms and teleradiology - modern orthodontic perspective Practice: Analysis of orthopantomograms and teleradiology	2 1
Week 11.	Lectures: Application of CBCT in orthodontics - diagnosis and therapy planning of impacted teeth; assessment of tooth morphology and position	2

	Practice: Analysis of CBCT images	1
Week 12.	Lectures: Radiological appearance of pathological conditions of soft tissues and periodontium Practice: Presentation of cases with X-ray analysis	2 1
Week 13	Lectures: Roentgenography in determining the plan of periodontal therapy Practice: Analysis of radiographs before and after periodontal therapy	2 1
Week 14.	Lectures: Radiographic specificities in children. Practice: Analysis of radiological characteristics of the dentofacial region in children	2 1
Week 15.	Lectures: Radiological examinations in preventive and children's dentistry Practice: Analysis of radiograms of the dentoalveolar area - specificity in children.	2 1
Week 17.-20.	Final exam/retake	

Subject code: SFSOM0708E	**Name of the subject: PEDIATRICS**		
CYCLE: Integrated	**Year: IV**	**Semester: VII**	**Number of ECTS credits:** 2
Status: obligatory		**Total number of hours: 30** Optionally work out the distribution of hours by type: **Lectures: 15** **Exercises: 15**	
Participants in classes	**Teachers and associates selected for the field to which the subject belongs**		
Prerequisite for enrollment:	All students enrolled in the fourth year of study		
Aim (aims) of the subject:	The aim is to acquire knowledge from the anamnesis and physical examination of newborns, infants, children and adolescents, their growth and development, their possibilities to reach their full potential by the time of adulthood. To acquire knowledge about the prevention, recognition and treatment of a sick child. Adopt knowledge from training, or habilitation of developmentally disabled children in terms of prevention, curative and rehabilitation. The purpose of the subject is to train the student to gain confidence in diagnosing a sick child through a properly taken medical history and physical examination. For the student to use recognized pediatric protocols to guide the further process of identifying and treating a sick child. During lectures, interactive classes and exercises, theoretical knowledge is acquired and the skill of examining a sick child is mastered according to the systems adopted from the doctrine of children's propaedeutics.		
Thematic units:	Organization of pediatric clinic work, preventive pediatrics, pulmonology and allergoimmunology, cardiology, rheumatology, gastroenterohepatology, nephrology, neonatology, neurology, endocrinology, hematology, oncology		
Learning outcomes:	Through the teaching of the "Pediatrics" subject, the student will acquire the following knowledge:		

	Introduction to pediatrics and preventive pediatrics, Pulmonology and allergy immunology, Cardiology, Rheumatology, Gastroenterohepatology, Child nutrition, Nephrology, Neonatology, Neurology, Endocrinology, Hematology, Oncology. Skills that should be able to perform practically (know how and do it): Basic parameters of vital functions: temperature, pulse, respirations, blood pressure Anthropometric measurements: body mass, body height, head circumference. Examination of skin turgor Palpation of lymph nodes in predilection places Examination of the head, neck, chest, abdomen, genitals, extremities Derivation of meningeal signs. After attending the class, the student should adopt the following attitudes: Correct pediatric history taking Good knowledge of the physical examination of a sick child Knowledge of basic laboratory and diagnostic procedures that are applied to a sick child. Knowledge of basic therapeutic and preventive possibilities in pediatric practice.
Teaching methods:	Classes are conducted in the form of: - lectures for all students, -exercises, for practical teaching methods will be used: "Four steps according to Peyton", PBL (Problem based learning) OSCE
Methods of checking knowledge with a grade structure:	Within the stipulated number of hours, there will also be forms of continuous knowledge testing (practical exam I, II and III part, and partial exam I, II and III part). If the student did not pass the practical and partial parts of the exam during the semester or is dissatisfied with the grade obtained, he/she can take the final exam. The condition for passing the written part of the final exam is to have previously passed the practical part of the exam. Forming the final grade. The total number of points obtained through all forms of knowledge testing is translated into the final grade as follows FORMATION OF CUMULATIVE GRADE: 10(A) – exceptional success with minor errors, 95-100 points, 9(B) – above average, with some errors, 85-94 points, 8(C) – average, with noticeable errors, 75-84 points, 7(D) – generally good, but with significant shortcomings, 65-74 points, 6(E) – meets the minimum criteria, 55-64 points, 5(F,FX) – does not meet the minimum criteria and requires much more work, below 55 points
Literature:	Compulsory: Mesihović - Dinarević S. and colleagues, Pediatrics for students of dentistry, SaVart, Sarajevo, 2025. Additional:

Implementation plan of the Pediatrics subject

Week	Form of teaching and materials	Number of hours
Week 1.	Lecture: Introduction to the subject, goals and tasks of pediatrics and children's rights in the health care system. Exercises:	

Week 2.	Lecture: Preventive pediatrics Exercises:	
Week 3.	Lecture PULMONOLOGY AND ALLERGOIMMUNOLOGY Exercises:	
Week 4.	Lecture: CARDIOLOGY Exercises:	
Week 5.	Lecture: RHEUMATOLOGY Exercises	
Week 6.	Partial exam	
Week 7.	Lecture: GASTROENTEROHEPATOLOGY Exercises:	
Week 8.	Lecture: NEPHROLOGY Exercises:	
Week 9.	Lecture: NEONATOLOGY Exercises:	
Week 10.	Partial exam	
Week 11.	Lecture: FIELD OF NEUROLOGY Exercises:	
Week 12.	Lecture: FIELD OF ENDOCRINOLOGY Exercises:	
Week 13.	Lecture: HEMATOLOGY Exercises:	
Week 14.	Lecture: ONCOLOGY	
Week 15.	Partial exam	
Week 17.	Final exam, Remedial exam period	

Subject code: SFSOM0709E	**Subject title: Physiotherapy**		
Cycle: Integrated	**Year: IV**	**Semester: VII**	**Number of ECTS credits:** 2
Status: obligatory		**Total number of hours: 30** **Lectures: 15** **Exercises: 10** **Seminar: 5**	
Participants in class:	**The teachers and associates selected for the area to which the subject belongs/the subject**		
Condition for enrollment:	Students enrolled in the fourth year of studies		
Subject objective(s):	The objectives of the subject are to familiarize the student with the tasks and basic principles of physical and rehabilitation medicine, as well as the management of the consequences of diseases and injuries they will encounter in their practice in primary care; and to introduce the holistic approach of rehabilitation medicine with other clinical disciplines, while distinguishing between basic rehabilitation groups of patients.		

Subject topics:	The thematic units are designed to provide the student with an understanding of: - The basics of physical medicine and rehabilitation - Kinesiotherapy, thermotherapy, cryotherapy - Musculoskeletal system disorders - Examination of the locomotor system - Diagnostic ultrasound of the musculoskeletal system, laser therapy, magnetotherapy, electroanalgesia
Learning outcomes:	The student will distinguish between the basic rehabilitation categories and concepts of rehabilitation medicine. They will understand the indications for applying rehabilitation therapy and the contraindications for its use, as well as the evaluation of the success of the rehabilitation process. The student will be able to assess the impact of chronic illness and disability on the patient, their family, and the community.
Teaching methods:	Classes are conducted in the form of: Lectures Exercises Seminars Teaching methods: Interactive, theoretical, and practical teaching.
Assessment methods and grading structure:	Student knowledge will be continuously assessed throughout the semester and on the final exam. All parts of the exam will be included in the evaluation. Continuous assessment includes partial exam 1 and 2 in the 7th and 15th weeks of classes, as well as a successfully defended seminar paper (at least 2 out of 5). It is considered that the student has passed a partial exam if they achieve the minimum number of points required to pass (55 out of 100 points). Unpassed parts of the exam will be evaluated in the final exam. A student who passes partial exams 1 and 2 must take the final exam if they have not successfully defended at least 2 seminar papers. Attendance and activity in class carry 5 points, partial exam 1 carries 40 points, partial exam 2 carries 40 points, and seminar paper carries 3 points each (up to a maximum of 15 points). The final grade is determined according to the points scale: 10 (A) – exceptional performance, with no errors or only minor errors, carries 95-100 points. 9 (B) – above average, with some errors, carries 85-94 points. 8 (C) – average, with noticeable errors, carries 75-84 points. 7 (D) – generally good, but with significant shortcomings, carries 65-74 points. 6 (E) – meets the minimum criteria, carries 55-64 points. 5 (F) – does not meet the minimum criteria, less than 55 points.
Literature:	Mandatory: Jajić I. i suradnici: Fizikalna medicina i opšta rehabilitacija. Medicinska naklada, Zagreb 2008 Additional: Jajić i Z. Jajić: Fizijatrijsko reumatološka propedeutika. Medicinska naklada, Zagreb, 2004.

Item code: SFSOS0705E	**Course Title: PRECLINICAL ENDODONTICS**		
Cycle: integrated	**Year: IV**	**Semester: VII**	**Number of ECTS credits:** 5
Status: obligatory		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 1 (15) **Exercises 2** (30)	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]
Prerequisite for enrollment:	All students enrolled in the 4th year of study
Aim (objectives) of the course:	The aim of the course is to acquaint students with the basics of morphology of the endodontic space and basic endodontic therapeutic protocol, endodontic instruments, as well as with the basic techniques of biomechanical treatment and obturation of root canals.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Endodontic instruments 2. Morphology and topography of the endodontics 3. Basics of diagnostics in endodontics 4. Basics of hemomechanical treatment and obturation of root canals
Learning outcomes:	At the end of the VIII semester, students will be able to: - discuss the basic forms of endodontic space, - distinguish endodontic instruments according to shape and purpose, - explain the properties of endodontic irrigants and materials for medicine and obturation of root canals, - apply standard and step back techniques of mechanical treatment of root canals, as well as materials for medicine and obturation of root canals.
Teaching methods:	Classes will take place through: - interactive lectures, - practices and - consultations. During the VIII semester, the student performs endodontic treatment on human extracted teeth and endodontic space simulators (endoblock).
Assessment methods with assessment structure:	The exam consists of a partial, practical and final exam. Partial and final exams are taken in writing. The partial exam carries 30 points and is considered passed if the student has achieved a minimum of 17 points. Through the practical exam, the recognition and correct application of endodontic instruments, the order of the endodontic protocol, biomechanical treatment, medication and root canal obturation are evaluated. The practical exam carries a total of 20 points.
Literature:	Required:

	3. Konjhodžić A, Jakupović S, Tahmiščija I, Korać S, Hasić-Branković L, Džanković A. Endodontska propedeutika, 1 ed. Sarajevo: Stomatološki fakultet sa klinikama; 2017. Additional: 1. Torabinejad M, Walton RE. Endodoncija: načela i praksa. Naklada Slap, Zagreb 2010. 2. Živković S. i saradnici: Praktikum endodontske terapije. Data Status, 2012.

Course syllabus

Week	Teaching and learning methods	Number of hours
Week 1.	Lecture: Introduction and scope of endodontics Practicals: Introduction	1 2
Week 2.	Lecture: Endodontic instruments I Practicals: Demonstration of rubber-dam use	1 2
Week 3.	Lecture: Endodontic instruments II Practicals: Demonstration of rubber-dam use	1 2
Week 4.	Lecture:Diagnostic procedures in endodontics Practitals: Introduction to the appearance and application of hand endodontic instruments	1 2
Week 5.	Lecture: Morphology and function of dental pulp and periapical tissue Practicals: Introduction to the appearance and application of machine endodontic instruments	1 2
Week 6.	Lecture: Basics of root canal morphology of permanent teeth Practicals: Introduction to the basics of diagnostics in endodontics (electropulp test, thermotest, radiographs)	1 2
Week 7.	Partial exam	
Week 8.	Lecture: Basics of pulp and apical periodontal pathology, clinical classification of pulpal and periapical pathology. Practicals: Analasis of morphology and anatomy of endodontic space	1 2
Week 9.	Lecture: Guidelines for access cavity preparation Practicals: Access cavity preparation	1 2
Week 10.	Lecture: Working length determination Practicals: Access cavity preparation	1 2
Week 11.	Lecture: Basic principles of canal instrumentation Practicals: Use of electronic apex locators	1 2
Week 12.	Lecture: Irrigation and intracanal medicaments Practicals: Biomechanical canal preparation	1 2
Week 13.	Lecture: Obturation of root canal system I Practicals: Biomechanical canal preparation	1 2
Week 14.	Lecture: Interactive repetition Practicals: Obturation techniques	1 2

Week 15.	Lectuure: Interactive repetition Practical: practical exam	1 2
Week 17.	Final exam, remedial	
	Remedial	

Item code: SFSIS0801E	**Course Title: PROPHYLAXIS OF ORAL DISEASES**		
Cycle: integrated	**Year: IV**	**Semester: VII**	**ECTS credits: 2**
Status: Elective		**Total hours: 30** **Lectures** 15 **Practice** 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs**		
Prerequisite for enrollment:	All students enrolled in the 4th year of study		
Aim (objectives) of the course:	-The aim of the course is to educate students about the anatomical and morphological characteristics of the oral mucosa and their function. Importance of defense factors in the prophylaxis of oral diseases. -Introduce students to general, local and functional preventive measures to preserve the integrity of the oral mucosa. -Train students to recognize macroscopic pathological changes in the oral mucosa, and know the oral tests used in the diagnosis of oral diseases.		
Thematic units: *(If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)*	1. Morphological characteristics of the oral mucosa 2. Physiological characteristics of the oral mucosa 3. Pathological characteristics of the oral mucosa 4. Pathological characteristics of the oral mucosa 5. Microscopic pathological changes in the oral mucosa 6. Factors of defense in the oral cavity 7. Factors of defense in the oral cavity 8. Pathogenesis of the diseases of the oral mucosa 9. Anamnestic diagnostic principles in the examination of the oral mucosa 10. Specific oral tests 11. Specific oral tests 12. Specificities of the oral mucosa in relation to age 13. Specificities of the oral mucosa in relation to age 14. Impact of medications on the oral mucosa 15. Principles of therapy in oral medicine		
Learning outcomes:	Through the subject of Oral Disease Prophylaxis, the student will know anatomical morphological, physiological and pathological characteristics of the oral mucosa. They will master the application of anamnestic diagnostic principles in the examination of oral mucosa and the practical application of oral tests. They will acquire knowledge about the oral flora		

	and the importance of defense factors in the prevention of diseases of the oral mucosa.
Teaching methods:	The course is held: 1. lecture ex- cathedra for all the students 2. practical exercises
Assessment methods with assessment structure:	One of the forms of activity is the lecture and practical exercises attendance. The assessment of theoretical knowledge from the completed semester will be conducted in the written form – by means of a test. The total grade consists of: - regular lecture attendance – 5 points, - practice attendance – 5 points, - active work in practice – 35 points, (written representation of a clinical case – 20 points, an answer to an essay question – 15 points) - The final exam by means of a test – 55 points. Student can acquire a maximum of 100 points. The assessment and grading of students' knowledge will be conducted according to the following system: 10(A)- exceptional results without mistakes or with insignificant mistakes, a total of 95-100 points; 9(B)- above average, with few mistakes, a total of 85-94 points; 8 (C)- average, with noticeable mistakes, a total of 75-84 points; 7(D) – generally good, but with significant shortcomings, a total of 65-74 points; 6(E) – fulfills minimum criteria, a total of 55-64 points; 5(F) – does not fulfill minimum criteria, less than 55 points.
Literature:	Obligatory: 1. Topić Berislav and associates: Oral Medicine, Faculty of Dental medicine in Sarajevo, 2001 2. Dedić Amira: Autoimmune oral diseases – practicum, Sarajevo, 2010. 3. Pašić E, Hadžić S, Gojkov Vulelić M and Hukić M: Oral Microbiology, Faculty of Dental medicine in Sarajevo, 2017 Supplementary: 1. Dedić Amira: Diabetes mellitus-oral aspects, University edition, Sarajevo, 2004. 2. Đukanovic Dragoslav and associates: Atlas – diseases of the soft tissue in the oral cavity, Belgrade, 2001 3. Laskaris Georg: Atlas of oral diseases, Third revised edition (translation in the Croatian language), Zagreb 2003.

Implementation plan for the course: Prophylaxis of oral diseases

Week	Form of teaching and curriculum	Number of hours
Week 1.	Lecture: Morphological characteristics of the oral mucosa Practice: Project Based Learning - Analysis of histological samples of the oral mucosa	1 1
Week 2.	Lecture: Physiological characteristics of the oral mucosa Practice: PBL - Analysis of histological preparations of the oral mucosa	1 1

Week 3.	Lecture: Pathological characteristics of the oral mucosa Practice: PBL - Introduction to the pathological changes of the oral mucosa by means of schemas and images	1 1
Week 4.	Lecture: Pathological characteristics of the oral mucosa Practice: PBL - Introduction to the pathological changes of the oral mucosa by means of schemas and images	1 1
Week 5.	Lecture: Microscopic pathological changes in the oral mucosa Practice: PBL - Analysis of pathohistological preparations of the oral mucosa	1 1
Week 6.	Lecture: Factors of defense in the oral cavity Practice: PBL - Demonstration of a clinical examination of the oral mucosa	1 1
Week 7.	Lecture: Factors of defense in the oral cavity Practice: Clinical examination of the oral mucosa	1 1
Week 8.	Lecture: Pathogenesis of the diseases of the oral mucosa Practice: PBL - individual work	1 1
Week 9.	Lecture: Anamnestic diagnostic principles in the examination of the oral mucosa Practice: PBL - individual work	1 1
Week 10.	Lecture: Specific oral tests Practice: PBL - Student assessment (case demonstration)	1 1
Week 11.	Lecture: Specific oral tests Practice: PBL - Demonstration of tests in oral medicine	1 1
Week 12.	Lecture: Specificities of the oral mucosa in relation to age Practice: PBL - individual work	1 1
Week 13.	Lecture: Specificities of the oral mucosa in relation to age Practice: PBL- individual work	1 1
Week 14.	Lecture: Impact of medications on the oral mucosa Practice: PBL - individual work	1 1
Week 15.	Lecture: Principles of therapy in oral medicine Student presents a written answer to an essay question	1 1
Week 17.	Final exam (test)	
Week 19.	Makeup exam date for students who have not passed the final exam	

Item code: SFSIS0706E	**Course Title: OROFACIAL PAIN**		
Cycle: integrated	**Year: IV**	**Semester: VII**	**Number of ECTS credits:** 2
Status: elective		**Total number of hours: 30** Optionally develop the distribution of hours by type: **Lectures** 1 (15) **Exercises** 1 (15)	
Teaching Participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	Students enrolled in the 4th year of study who choose this subject		
Aim (objectives) of the course:	The course aims to acquaint students with the definition of pain and the functional anatomy of the nervous system related to pain perception. It introduces students to the etiology, general and special division of the pain in dentistry and its therapy.		

Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Subjects' units are created for students in order to give them the basic knowledge on clinical recognition of the particular type of the pain, the methods of medication and surgical therapy. Teaching plan by weeks is given in the attachment.
Learning outcomes:	Knowledge: To acquire knowledge about clinical recognition and specificity of the pain in dentistry Skills: To acquire knowledge about medication in pain therapy, to know and use pain therapy through interventional procedures for accomplishing local analgesia Competitions: To master the local anesthesia and block anesthesia in dental practice
Teaching Methods:	Interactive lectures Exercises
Assessment methods with assessment structure:	Acquired knowledge is assessed through knowledge evaluation. Knowledge assessment is through a written test. In order for the test to be considered passed and scored, it must contain a minimum of 60% correct answers. New tests, divided into A, B, and C groups are made for each exam term. The test represents 50% of the final grade, and regular attendance represents another 50% of the final grade. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Orofacial Pain:)Guidelines for Assessment, Diagnosis, and Management, Fifth Edition 5th Edition. Publisher: Quintessence Pub Co; by Reny de Leeuw (Author), Gary D. Klasser (Author) (May 1, 2013) Additional: 1. Jovanović J. TERAPIJA NAJČEŠĆIH BOLNIH SINDROMA. Elit medika- Beograd, 2001 2.Other textbooks of interventional dentistry.

Teaching plan of the course Orofacial pain

Week	Form of teaching and lectures	Hours
Week 1.	Lecture: Definition of the pain, functional anatomy of the nervous system Exercises: lectures were followed by exercises	1 1
Week 2.	Lecture: Basic characteristics, causes, classification of pain. Exercises: lectures were followed by exercises	1 1
Week 3.	Lecture: Pain therapy- basic division Exercises: lectures were followed by exercises	1 1
Week 4.	Lecture: Medication in pain treatment Exercises: lectures were followed by exercises	1 1
Week 5.	Lecture: Surgical therapy of pain Exercises: lectures were followed by exercises	1 1

Week 6.	Lecture: Basics of local pain therapy Exercises: lectures were followed by exercises	1 1
Week 7.	Lecture: Pain in acute inflammatory conditions Exercises: lectures were followed by exercises	1 1
Week 8.	Lecture: Periodontal pain Exercises: lectures were followed by exercises	1 1
Week 9.	Lecture: Pain in pulpitis Exercises: lectures were followed by exercises	1 1
Week 10.	Lecture: Periosteal pain Exercises: lectures were followed by exercises	1 1
Week 11.	Lecture: Bone pain: Fracture pain, pain in osteomyelitis, pain in alveolitis Exercises: lectures were followed by exercises	1 1
Week 12.	Lecture: Myalgia Exercises: lectures were followed by exercises	1 1
Week 13.	Lecture: Arthralgia Exercises: lectures were followed by exercises	1 1
Week 14.	Lecture: Neuralgiform pain, Trigeminal pain: 1. Neuritis, 2. neuralgias Exercises: lectures were followed by exercises	1 1
Week 15.	Lecture: Carcinoma pain Exercises: lectures were followed by exercises	1 1
Week 17.	Final exam	
Week 19.	Corrective exam	

Item code: SFSIS4071E	**Course Title: Oral health care in pregnancy**		
Cycle: integrated	**Year: IV**	**Semester: VII**	**Number of ECTS credits:** 2
Status: elective		**Total number of hours: 30** Optionally develop the distribution of hours by type: **Lectures** 1 (15) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 4th year of study		
Aim (objectives) of the course:	The course aims to acquaint students with the role of dentists in the oral health care during pregnancy and infancy with community-based programs for oral health promotion and protection.		
Thematic units: (*If necessary, the performance plan is determined by taking into*	Thematic units were formed with the aim that the student learns the basic procedures of community based oral health promotion during pregnancy with guideline for prevention and treatment for pregnant patients in dental office. The teaching plan is given by the week in the attachment.		

account the specifics of organizational units)	
Learning outcomes:	Knowledge: Accept and understand the ways of gathering information important for comprehensive oral health care during pregnancy and infancy. Skills: Master the basic principles of community based oral health promotion and program for the specific population group such as pregnant patient, to know the basics guidelines of prevention and dental treatment in pregnancy and infancy. Competences: To be able to collect, compare and analyze evidence-based data to develop preventive strategy and treatment plan in pregnant patients.
Teaching methods:	Lectures ex cathedra/online Practical exercises- Practicum evidence based analyzes and treatment plan decision
Assessment methods with assessment structure:	Acquired knowledge is assessed by practicum assessment and final exam. Practicum is the result of work during exercises and will be finally done from the 13 to 15 week of study semester, carries maximum of 70% of the grade. The final exam is test it must contain a minimum of 50% correct answers. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: Hoboken NJ. Dental management of the pregnant patient. Wiley, 2018. Additional: 1. American Dental Association. Pregnancy and Oral Health. American Dental Association, 2020

Teaching plan: Oral health care in pregnancy

Week	Teaching methods (lectures, exercices, practices)	Number of hours
Week 1.	Lectures: Introduction: Oral health care in pregnancy and infancy Exercices: Introduction in excercise, basic principles of excercise, evidence based learning, methods,assessments and evaluation	1 1
Week 2.	Lectures: Physiological changes in pregnancy Exercices: Practicum: Physiological changes in pregnancy, evidence based analizys	1 1
Week 3.	Lectures: Dentooral changes in pregnanacy Exercices: Practicum: Dentooral changes in pregnanacy, evidence based analizys	1 1
Week 4.	Lectures: Dental treatment during pregnancy Exercices: Practicum: Dental treatment during pregnancy, evidence based analizys	1 1
Week 5.	Lectures: Dental treatment of pregnant patients with systemic diseases and diseases related to pregnancy Exercices: Practicum: Dental treatment of pregnant patients with systemic diseases and diseases related to pregnancy, evidence based analizys	1 1
Week 6.	Lectures: Pregnancy in adolescency, oral health menagement and dental treatment	1

	Exercices: Practicum: Pregnancy in adolescency, oral health menagement and dental treatment, evidence based analizys	1
Week 7.	Lectures: Medication use during pregnancy and lactation Exercices: Practicum: Medication use during pregnancy and lactation	1 1
Week 8.	Lectures: Drug prescription in pregnanacy and lactacion Exercices: Practicum: Drug prescription in pregnanacy and lactacion	1 1
Week 9.	Lectures: Prental oral health counceling Exercices: Practicum: Prenatal oral health counceling	1 1
Week 10.	Lectures: Craniofacial development disoeders, preventive considerations in pregnant patient Exercices: Practicum: Craniofacial development disoeders, preventive considerations in pregnant patient, evidence based analizys	1 1
Week 11.	Lectures: Dentooral diseases in newborn and infants- preventive care in pregnancy Exercices: Practicum : Dentooral diseases in newborn and infants- preventive care in pregnancy, evidence based analizys	1 1
Week 12.	Exercices: Oral health care during lactacion Exercices: Practicum : Dentooral diseases in newborn and infants- preventive care in pregnancy, evidence based analizys	1 1
Week 13.	Lectures: Oral health related counceling after for mothers newborns and infants Exercices: Instruction for final practicum development and creation	1 1
Week 14.	Lectures: Oral health promotion programs in pregnancy and infancy Exercices: Final practicum development and creation	1 1
Week 15.	Lectures: Oral healthcare during pregnancy and infancy, practicle guidelines and review Exercices: Final practicum review and discussion	1 1

Item code: SFSIS4081E	**Course Title: Modern techniques in endodontics**		
Cycle: integrated	**Year: IV**	**Semester: VIII**	**Number of ECTS credits:** 2
Status: elective		**Total number of hours: 30** **Lectures** 15 **Practicals** 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	All students enrolled in the 4th year of study		
Aim (objectives) of the course:	The course aims to provide theoretical and practical basics on modern techniques in endodontics with with special reference to the rotary files, devices and techiques of rotary instrumentation.		
Thematic units:	5. Properties of NiTi rotary instruments, features and functions of endodontics files and devices, 6. Techniques of root canal preparation using rotary instruments,		

	7. Procedural accidents/errors during rotary instrumentation, methods of their prevention and elimination, 8. Obturation techniques related to rotary instrumentation.
Learning outcomes:	At the end of the course Modern techniques in endodontics, students will be able to: - recognize and distinguish endodontic rotary files and devices, - explain the principles of rotary instrumentation, - discus the aspects of root canal filling related to rotary instrumentation.
Teaching methods:	Classes will take place through: - interactive lectures, - practicals, - consultations.
Assessment methods with assessment structure:	Acquired knowledge is assessed through partial exam and final exam, enrolled in written form. Every exam carries 50 points. The partial exam is performed during the semester and considered passed if the student has achieved a minimum of 28 points. The final exam is considered passed if contain a minimum 55% of correct answers. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 3. Torabinejad M, Walton RE. Endodoncija: načela i praksa. Naklada Slap, Zagreb 2010. 4. Konjhodžić A, Jakupović S, Tahmiščija I, Korać S, Hasić-Branković L, Džanković A. Endodontska propedeutika, 1 ed. Sarajevo: Stomatološki fakultet sa klinikama; 2017. 5. Živković S. i saradnici: Praktikum endodontske terapije. Data Status, 2012. Additional: 1. Ingle JI, Bakland LK. Endodontics. People's Medical Publishing House-USA, 2016. 2. Cohen S, Burns RC. Pathways of the pulp. Mosby Inc, St. Louis, 2015.

Course syllabus Modern techniques in endodontics

Week	Teaching and learning methods	Numbers of hours
Week 1.	Lecture: Properties of NiTi rotary instruments Practicals: Related to lecture content	1 1
Week 2.	Lecture: Endodontic handpiece (endomotor), features and functions Practicals: Related to lecture content	1 1
Week 3.	Lecture: Reciprocating files, reciprocating handpiece Practicals: Related to lecture content	1 1

Week 4.	Lecture: Recent trends in endodontic access preparation Practicals: Related to lecture content	1 1
Week 5.	Lecture: Techniques of root canal preparation using rotary instruments Practicals: Related to lecture content	1 1
Week 6.	Lecture: Irrigation and lubrications during rotary instrumentation Practicals: Related to lecture content	1 1
Week 7.	Partial exam	1 1
Week 8.	Lecture: Obturation techniques related to rotary instrumentation Practicals: Related to lecture content	1 1
Week 9.	Lecture: Procedural accidents/errors during rotary instrumentation Practicals: Related to lecture content	1 1
Week 10.	Lecture: Retreatment procedure and retreatment rotary files Practicals: Related to lecture content	1 1
Week 11.	Lecture: Ultrasonics in endodontics Practicals: Related to lecture content	1 1
Week 12.	Lecture: Management of curved canals Practicals: Related to lecture content	1 1
Week 13.	Lecture: Management of calcified canals Practicals: Related to lecture content	1 1
Week 14.	Lecture: Interactive repetition Practicals: Related to lecture content	1 1
Week 15.	Lecture: Interactive repetition Practicals: Related to lecture content	1 1
Week 17.	Final exam, Remedial	
Week 19.	Remedial	

Item code: SFSIS4082E	**Course Title: PHARMACOLOGICAL PROTOCOLS IN ORAL MEDICINE AND PERIODONTOLOGY**		
Cycle: integrated	**Year: IV**	**Semester: VIII**	**Number of ECTS credits: 2**
Status: elective		**Total number of hours: 30** **Lectures** 15 **Exercises** 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrolment:	All students enrolled in the 4th year of study		
Aim (objectives) of the course:	The aim of the course is to teach students of the Faculty of Dentistry about therapy management and pharmacological protocol in the treatment of the most common diseases of the oral mucosa and the periodont.		
Thematic units: (*If necessary, the performance plan is*	1. Introduction into Pharmacology – General terms 2. Antiseptics in oral medicine and periodontology 3. Preparations for oral cavity hygiene		

determined by taking into account the specifics of organizational units)	4. Local application of antibiotics in the treatment of oral diseases and the periodont 5. Systemic application of antibiotics in the treatment of oral diseases and diseases of the periodont 6. Application of Anti-mycotics in the treatment of fungal diseases 7. Application of Antiviral medications in the treatment of viral diseases 8. Pharmacological protocol for erosive-ulcerative lesions 9. Pharmacological protocol for white lesions 10. Pharmacological protocol for oral precancerous lesions 11. Pharmacological protocol for systemic and local allergies 12. Pharmacological protocol for autoimmune diseases 13. Pharmacological protocol for high-risk patients 14. Therapeutic application of vitamins, antiphlogistics and analgesics in oral medicine and periodontology 15. Interactions of medications and undesirable medication reactions (side-effects)
Learning outcomes:	Through the course "Pharmacological protocols in oral medicine and periodontology" students will adopt the following knowledge after theoretical and practical lessons: They will have good knowledge of general terms in Pharmacology, means of drug administration and their effects, as well as unwanted drug effects or side-effects. Student will acquire knowledge about indications, contraindications and the application of antiseptics, antibiotics (local and systemic) in the treatment of the diseases of the oral mucosa and the periodont.. Student will be introduced to and know therapeutic and pharmacological treatment protocol for the treatment of erosive-ulcerative diseases, white lesions, oral precancerous lesions, allergies and autoimmune diseases. They will know the doctrinal approach and pharmacological protocol for oral precancerous lesions and high-risk patients for the periodont.
Teaching methods:	The course is held: 1. lecture ex cathedra for all the students 2. clinical practice
Assessment methods with assessment structure:	One of the forms of activity is lecture and practice attendance. The assessment of theoretical knowledge from the completed semester will be conducted in the written form – by means of a test. The total grade consists of: - regular lecture attendance - 5 points, - practice attendance – 5 points - active work in practice – 35 points, (in week 10, a colloquium from attended topics -15 points, Seminar paper or case presentation -20 points) - final exam by means of a test – 55 points. The final grade is formed in a way that total points acquired are converted into a final grade as follows: g) 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points; h) 9 (B) - above average, with some errors, carries 85-94 points; i) 8 (C) - average, with noticeable errors, carries 75-84 points; j) 7 (D) -generally good, but with significant shortcomings, carries 65-74 points; k) 6 (E) -satisfies the minimum criteria, carries 55-64 points; l) 5 (F) - does not meet the minimum criteria, less than 55 points.

Literature:	Required: 2. Berislav Topić, Periodontology, biology, immunopathogenesis, practice. Sarajevo – Zagreb, 2005. 3. Berislav Topić, Oral medicine, Sarajevo, 2001. 4. Ileana Linčir, Pharmacology for dentists, Zagreb, 1991. 5. Ljiljana Janković, Oral medicine, Beograd, 2001 Additional: 6. Jan Lindhe, Clinical periodontology and dental implantology, According to the Fourth edition (translation in Croatian language), Zagreb, 2004.

Implementation plan for the course Pharmacological protocols in oral medicine and periodontology

Week	Form of teaching and curriculum	Number of hours
Week 1	Lecture: Introduction into Pharmacology – General terms Practice: Introduction with pharmacological protocols	1 1
Week 2.	Lecture: Antiseptics in oral medicine and periodontology Practice: Case presentations (indications and methods of antiseptic application)	1 1
Week 3	Lecture: Preparations for oral cavity hygiene Practice: Case presentations, slide-shows, preparation demonstrations	1 1
Week 4	Lecture: Local application of antibiotics in the treatment of oral diseases and the periodont Practice: Individual work with a patient, case presentations (slide-shows)	1 1
Week 5	Lecture: Systemic application of antibiotics in the treatment of oral diseases and diseases of the periodont Practice: Individual work with a patient, case presentations (slide-shows)	1 1
Week 6	Lecture: Application of Anti-mycotics in the treatment of fungal diseases Practice: Individual work with a patient, pharmacological treatment protocol	1 1
Week 7	Lecture: Application of Antiviral medications in the treatment of viral diseases Practice: Individual work with a patient, pharmacological treatment protocol	1 1
Week 8	Lecture: Pharmacological protocol for erosive-ulcerative lesions Practice: Individual work with a patient, pharmacological treatment protocol	1 1
Week 9	Lecture: Pharmacological protocol for white lesions Practice: Individual work with a patients, pharmacological treatment protocol	1 1
Week 10	Lecture: Pharmacological protocol for oral precancerous lesions Student testing by means of mid-term exam	1 1
Week 11	Lecture: Pharmacological protocol for systemic and local allergies Practice: Individual work with a patient, pharmacological treatment protocol	1 1
Week 12	Lecture: Pharmacological protocol for autoimmune diseases Practice: Individual work with a patient, pharmacological treatment protocol	1 1
Week 13	Lecture: Pharmacological protocol for high-risk patients Practice: Individual work with a patient, pharmacological treatment protocol	1 1
Week 14	Lecture: Therapeutic application of vitamins, antiphlogistics and analgesics in oral medicine and periodontology Practice: Individual work with a patient, pharmacological protocol	1 1

Week 15	Lecture: Interactions of medications and undesirable medication reactions (side-effects) Practice: Presentations by means of atlas, pictures and case presentations	1 1
Week 17	Final exam (test)	
Week 19	Makeup exam date	

FIFTH YEAR OF STUDY

Item code: **SF SFSOS0901E**	**Course title: PREVENTIVE DENTISTRY**		
Cycle: integrated	**Year: V**	**Semester: IX and X**	**Number of ECTS credits:** 8
Status: obligatory		**Tital number of teaching hours: 120** With the distribution of hours by type: **Lectures** 60 **Exercises** 60	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	All students enrolled in the 5th year of study		
Aims (objectives) of the course:	- Realize and understand the biological mechanisms of oral health protection. - Realize and understand the role, place, principles and importance of preventive dentistry - Realize, understand and use preventive dentistry measures in relation to population characteristics - Realize, understand and use methods to exclude the risk of developing oral diseases. - Realize and understand the role of nutrition in general and oral health and be able to give adequate dietary instructions to the patient. - Realize and understand the role of maintaining oral hygiene in general and oral health and be able to give adequate oral hygiene instructions to the patient. - Realize and understand the role of chemical plaque control and be able to perform them. - Realize, understand and know how to set indications for the use of fluoride and fissure sealants. Be able to use fluoride and fissure sealants. - Realize, understand and know the importance of prevention in comprehensive dental care - Realize, understand and use caries risk assessment tools		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1.Oral health of the population and oral health indices 2. Motivation for the preservation of oral health 3. Biological mechanisms of oral protection 4. Oral biofilm and dental plaque 5. Origin and development of dental caries 6. Nutrition - cariogenicity and anticariogenicity of food 7. Mechanical control of dental plaque 8. Chemical control of dental plaque 9. Means for preventing demineralization and stimulation of remineralization 10. Filling fissures 11. Assessment of the risk of tooth decay 12. Prevention of early childhood caries 13. Operative (microinvasive) treatment of an early carious lesion 14. Preventive measures for specific population groups 15. Prevention of periodontal disease 16. Prevention of acquired orthodontic irregularities		

	17. Prevention of orofacial injuries 18. Prevention of diseases of the oral mucosa 19. Prevention of temporomandibular disorders 20. Preventive measures during pregnancy 21. The role of dentists in recognizing and reporting neglect and abuse 22. Health education in dentistry
Learning outcomes:	After attending classes, students will be able to independently plan and implement comprehensive preventive measures in dental care, for all ages and all population groups.
Teaching methods:	Classes are held in the form of: - lectures for all students; - practical classes - exercises in groups according to the standard; - consultations; - individual student work; - seminars in terms of interactive form of learning.
Assessment methods with assessment structure [3]:	In the structure of the total number of points, at least 50% of points must be provided for activities and knowledge evaluations during the semester. In the ninth semester, a partial exam is taken in the 15th week of semester. The partial exam will be in verbal form, and in order to pass the exam, the student must receive a minimal passing grade on each of the three questions asked. In the X semester, a partial exam is taken in the 15th week of semester. The partial exam will be in verbal form, and in order to pass the exam, the student must receive a minimal passing grade on each of the three questions asked. At the end of the X semester, the final exam is taken also in verbal form. Those students who did not pass the partial exam in the IX and / or X semester take the final exam which include the parts of the teaching material that remained unpassed through the partial exams during the IX and/or X semester, with the same number of questions asked as before (three per partial exam). Also, those students who are not satisfied with the final grade achieved through success during classes and by taking partial exams in the IX and X semesters, can also take the final exam. In doing so, the exam is taken in verbal form integrally, and in order for a student to pass the exam, he must receive a minimal passing grade on each of the six questions asked. The final grade on the final exam is formed according to the following points scale: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.

[3] The structure of points and point criteria for each subject is determined by the council of the organizational unit before the beginning of the academic year in which the subject is taught following Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

Literature [4]:	Required literature: 1. Cameron AC, Widmer RP. (editors). Handbook of Pediatric Dentistry. Fourth edition. Mosby Elsevier; 2013. 2. Nowak AJ, Christensen JR, Mabry TR, Townsend JA (editors). Pediatric Dentistry. Infancy Through Adolescence. Sixth Edition. Elsevier; 2019. 3. Limeback H (ed). Comprehensive Preventive Dentistry. Wiley-Blackwell; 2012. 4. Harris NO, Garcia-Godoy F, Nathe CN. Primary Preventive Dentistry. Eighth edition. Pearson Education Limited; 2014.

Teaching Plan in IX Semester

Week	Course form and content	Hours
Week 1.	**LECTURE:** Introduction to preventive dentistry **EXERCISES:** Introduction to the workplace and procedures from the aspect of the work of a preventive dentist	2 2
Week 2.	**LECTURE:** Oral health of the population and oral health indices **EXERCISES:** Anamnesis, clinical examination of significance for preventive dentistry, oral health indices	2 2
Week 3.	**LECTURE:** Individual motivation for the preservation of oral health **EXERCISES:** Clinical examination of significance for preventive dentistry	2 2
Week 4.	**LECTURE:** Biological mechanisms of protection of the oral cavity **EXERCISES:** Clinical examination of significance for preventive dentistry	2 2
Week 5	**LECTURES:** Oral biofilm and dental plaque **EXERCISES:** Methods of dental plaque visualization	2 2
Week 6.	**LECTURE:** Occurrence and development of dental caries **EXERCISES:** Methods for dental plaque visualization, professional cleansing of dental plaque and other deposits	2 2
Week 7.	**LECTURE:** Nutrition - cariogenicity and anticariogenicity of food **EXERCISES:** Analysis of nutrition diary	2 2

[4] The Senate of the higher education institution as an institution or the council of the organizational unit of the higher education institution as a public institution determines mandatory and recommended textbooks and manuals, as well as other recommended literature based on which it prepares and takes the exam as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton

Week 8.	**LECTURE:** Mechanical control of dental plaque **EXERCISES:** Toothbrushing techniques, instructions for individual maintenance of oral hygiene	2 2
Week 9.	**LECTURE:** Chemical control of dental plaque **EXERCISES:** Interdental toothbrushing techniques, guidelines for individual mechanical plaque control, instructions for the application of chemical agents for plaque control	2 2
Week 10.	**LECTURE:** Agents for preventing demineralization and stimulating remineralization **EXERCISES:** Caries risk assessment, instructions for oral hygiene, nutrition, application of chemical agents for plaque control	2 2
Week 11.	**LECTURE:** Fluorides, mechanism of fluoride action, fluoride toxicity **EXERCISES:** Local dental fluoridation	2 2
Week 12.	**LECTURE:** Local and systemic dental fluoridation **EXERCISES:** Local dental fluoridation, application of other means for dental remineralization	2 2
Week13.	**LECTURE:** Fissure sealing **EXERCISES:** Fissure sealing	2 2
Week 14.	**LECTURE:** Risk assessment for the occurrence of caries **EXERCISES:** Preventive and prophylactic treatment of dental patient	2 2
Week 15.	**LECTURE:** Prevention of early childhood caries **EXERCISES:** Preventive and prophylactic treatment of dental patient	2 2

Teaching Plan in X Semester

Week	Course form and content	Hours
Week 1.	**LECTURES:** Operative (microinvasive) treatment of early carious lesions **EXERCISES:** Preventive-prophylactic treatment of patients, examination and assessment of the condition of gingiva and periodontium	2 2
Week 2.	**LECTURES:** Prevention of periodontal diseases **EXERCISES:** Preventive-prophylactic treatment of patients, examination and assessment of the condition of gingiva and periodontium	2 2
Week 3.	**LECTURES:** Prevention of oral mucosal diseases - Anamnesis and examination of oral mucosa, normal anatomical-morphological variations of oral mucosa and conditions that do not require therapy **EXERCISES:** Preventive-prophylactic treatment of patients, examination and assessment of the condition of gingiva and periodontium	2 2
Week 4.	**LECTURES:** Prevention of oral mucosal diseases **EXERCISES:** Preventive-prophylactic treatment of patients	2 2
Week 5	**LECTURES:** Prevention of acquired orthodontic irregularities **EXERCISES:** Preventive-prophylactic treatment of patients	2 2
Week 6.	**LECTURES:** Prevention of orofacial injuries **EXERCISES:** Preventive-prophylactic treatment of patients	2 2
Week 7.	**LECTURES:** Prevention of temporomandibular disorders **EXERCISES:** Preventive-prophylactic treatment of patients	2 2
Week 8.	**LECTURES:** Prevention of oral diseases in medically compromised patients **EXERCISES:** Preventive-prophylactic treatment of patients	2 2
Week 9.	**LECTURES:** Preventive measures for specific population groups **EXERCISES:** Preventive-prophylactic treatment of patients	2 2
Week 10.	**LECTURES:** Preventive measures in pregnancy **EXERCISES:** Prenatal counseling center - simulation	2 2
Week 11.	**LECTURES:** Preventive measures for adults and elderly people **EXERCISES:**	2

	Preventive-prophylactic treatment of patients	2
Week 12.	**LECTURES:** Role of the dentist in recognizing and reporting neglect and abuse **EXERCISES:** Preventive-prophylactic treatment of patients	2 2
Week13.	**LECTURE:** Health education in dentistry **EXERCISES:** Preventive-prophylactic treatment of patients	2 2
Week 14.	**LECTURE:** Immunization approach to the prevention of dental caries **EXERCISES:** Preventive-prophylactic treatment of patients	2 2
Week 15.	**LECTURE:** Importance of prevention in pediatric dentistry (pedodontics) **EXERCISES:** Preventive-prophylactic treatment of patients	2 2

Item code: SFSOS0903E	**Course title: FIXED PROSTHODONTICS**		
Cycle: integrated	**Year: V**	**Semester: IX and X**	**Number of ECTS credits: 12**
Status: Obligatory		**Total hours: 180 (60 + 120)** IX SEMESTER: 90 Lectures 30 Clinical practice/ practical classes 60 X SEMESTER: 90 Lectures: 30 Clinical practice/ practical classes 60	
Teaching participants	**Teachers and associates selected in the field to which the subject belongs/subject [do not enter names in this section. Leave the wording as indicated in this section]** **Department of prosthodontics with dental implantology**		
Prerequisite for enrollment:	The conditions are regulated by the Rules of Study for the Integrated Study Program of the first and second cycle of studies at higher education institutions of the University of Sarajevo.		
Course objective(s):	To enable the student to independently perform clinical phases when making fixed prosthetic restorations.		
Thematic units: *(if necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)*	Module 1 1. Tooth preparation. 2. The design of marginal preparation and its relation to soft tissues, guided tooth preparation. 3. Anamnesis, first examination and communication with the patient 4. Preprosthetic therapy. Contraindications. Preprosthetic surgery, periodontology, restorative dentistry, restorative endodontology - preprosthetic orthodontics. 5. Preprosthetic therapy, restoration of endodontically treated teeth. 6. Planning of prosthetic therapy, photo and video documentation and esthetic analysis. 7. Decision analog or digital therapy. Dental materials.		

	8. Analog and digital planning. 9. Wax up. 10.Digital wax up. 11. Preparing of gingiva for impression. 12. Analog impression. Digital impression. 13. Bite registration. Determination of tooth color. Laboratory provisional. 14. Analog and digital completion of work. Clinical trials of work. 15. Cementation, temporary and permanent. Modul 2 1. Types of dental bridges. 2. Static of dental bridge 3. Indications and contraindications for making a dental bridge, specifics of tooth preparation for a dental bridge (parallelization of teeth). 4. Evaluation of individual abutment. Selection of retainer for the bridge. 5. Masticatory forces. General static conception of dental bridges. 6. Selection of materials / systems for making dental bridges– metal ceramic systems. 7. Selection of materials / systems for making dental bridges– ceramic materials. 8. Selection of materials / systems for making dental bridges – zirconia materials. 9. Selection of materials / systems for making dental bridges (digital way of making bridges – zirconia materials). 10. Impression procedures using classic and digital methods. Bite registration and determination of intermaxillar relation. 11. Specifics of try-in substructures and full anatomy forms of bridges made of different materials. 12. Oral rehabilitation with combined works. 13. Esthetic veeners, inlay, onlay, overlay. 14. Cementation of dental bridges, esthetic veneers, inlays, onlays and overlays. 15. Durability of fixed prosthetic works and complications during and after fixed prosthetic therapy.
Learning outcomes:	Module 1 Knowledge: - Gain basic knowledge of crown and dowel core planning - Set indications and contraindications. - Assess the condition of the abutment teeth. - Acquire basic knowledge about the principles of tooth preparation, methods showing preparation margin, impression techniques, the procedure of try-in restoration, as well as the methods cementation. - Know the types of dental crowns and dowel core. Skills: - Take the anamnesis and do a clinical examination of the patient, analyze the X-ray, make a diagnosis and correctly choose the optimal therapy with fixed or combined prosthetic work. - Make the most favorable choice of building material from which the restoration will be made. - Handle equipment independently. - Independently select the appropriate burs for the tooth preparation.

	- Prepare the abutment teeth yourself, for a dental bridge or other indicated prosthetic restoration. - Independently take adequate impression by classical and digital methods. - Independently try fixed prosthetic restoration in stages. - Independently cement fixed and combined prosthetic restoration, temporarily and permanently. - Instruct the patient on the use of fixed or combined prosthetic restoration. - Give instructions to the patient. Competences: - Make a therapy plan on your own - Independently report all clinical stages during preparation of different types of crowns and dowel core. Module 2 Knowledge: - Planning of fixed-prosthetic restoration. - Know the indications and contraindications for dental bridge, ceramic veneer, inlay, onlay and overlay, and combined prosthetic restoration. - Adopt the principles of preparation for the mentioned prosthetics restoration, methods of showing the preparation margin, impression techniques, try in procedures, and optimal cementing technique. - Know the type of material and make the correct selection for the mentioned prosthetic restorations. Skills: - Take the anamnesis and do a clinical examination of the patient, analyze the x-ray, make a diagnosis and correctly choose the optimal therapy fixed or combined prosthetic restoration. - Make the most favorable selection of the materials for propriate restoration. - Handle equipment independently. - Independently select the appropriate burs for preparation. - Prepare the abutment teeth yourself, for the dental bridge or other indicated prosthetic work. - Independently take adequate impressions using the classic and digital method. - Independently try-in fixed prosthetic work in stages. Independently cement fixed and combined prosthetics work (temporarily and permanently) - Give instructions to the patient Competences: - Independently make a therapy plan for complete oral rehabilitation - Independently perform all clinical phases during therapy with dental bridges, combined restoration and minimally invasive restoration.

Teaching methods:	Teaching is carried out in the form of: - ex-department lectures (P) for all students - practical classes - exercises in groups according to the standard - interactive learning (IU)
Assessment methods with assessment structure:	Acquired knowledge and skills are tested continuously during the semester. In the structure of the total number of points, the student can achieve for activities and knowledge tests: - activity - individual work with patients on clinical exercises - maximum 10 points, minimum 5.5 points - partial exam in the 15th week of classes of the first semester - maximum 40 points, minimum 22 points - final exam - maximum 50 points, minimum 27.5 points. The partial exam consists of a practical test of knowledge and an oral examination of theoretical knowledge. The student takes the practical part of the partial exam in the 15th week of the first semester as part of clinical exercises. The condition for taking the oral examination of theoretical knowledge of the partial exam is passing the practical part of the exam. The final exam consists of a practical test of knowledge and an oral examination of theoretical knowledge. The student takes the practical part of the final exam in the 15th week of the second semester as part of clinical exercises. The condition for taking the oral examination of theoretical knowledge of the final exam is passing the practical part of the exam. The passed practical part of the exam is valid for one academic year. A student who did not pass the partial knowledge test takes the integral practical and/or theoretical part of both semesters on the final exam. A student can score a maximum of 90 points, and a minimum of 49.5 points, on the final exam, which is taken integrally. The passing score level on the exam is 55%. In accordance with the above, the grade scale is as follows: a) 10(A) - exceptional success without errors or with insignificant errors - 95-100 points b) 9(B) - above average with few errors- 85-94 points; c) 8 (C) - average with noticeable errors - 75 -84 points; d) 7(D) - generally good but with significant errors- 65-74 points; e) 6(E) - meets the minimum criteria - 55-64 points; f) 5(F, FX) – does not meet the minimum criteria, less than 55 points.
Literature:	**Obligatory literature:** 1. Schillinburg TH, Hobo S, Whitsett l, Jacobi R. Fundamentals of Fixed Prosthodontics. 4 th. ed. 2012. Quintessence Publishing. 2. Rosenstiel S, Land F, Fujimoto J. Contemporary fixed prosthodontics.

	6th ed. Elsevier Health Sciences, 2022. 3. Gürel G. The Science and Art of Porcelain Laminate Veneers. Quintessence Publishing. 1st ed. 2003. **Recommended literature:** 1. Jakovac M. Protokol. Zagreb: Stega tisak; 2023. 2. Redžepagić. S, i sur. Fiksna stomatološka protetika – krunice. Stomatološki fakultet sa klinikama: Sarajevo, 2019. 3. Redžepagić S. Rubno zatvaranje u fiksnoj stomatološkoj protetici. Udruženje stomatologa Bosne i Hercegovine, Sarajevo, 1999. 4. Ćatović A. i sur. Klinička fiksna protetika. Ispitno štivo. Stomatološki fakultet Sveučilišta u Zagrebu, 1999. 5. Trifunović DM, Vujošević LJ. Stomatološka protetika: Fiksne nadoknade. 1st ed. Beograd: Europski centar za razvoj i mir; 1998.

COURSE SYLLABUS: FIXED PROSTHODONTICS- IX SEMESTER

Week	Form of teaching and materials (lectures, practical classes, independent practice)	Number of hours (lectures, practical classes)
Week 1.	Lecture: Tooth preparation. Burs for preparation. Principles of tooth preparation. Retention, resistance. Practical classes: Work on phantom head.*	2 4
Week 2.	Lecture: The design of marginal preparation and its relation to soft tissues. Minimally invasive preparation. Mock up and guided tooth preparation. Preparation for minimally invasive restorations. Practical classes: Work on phantom head.*	2 4
Week 3.	Lecture: Anamnesis, first examination and communication with the patient. x-rays, virtual planning DSD – Digital Smile Design i PSD – Photoshop Smile Design. Practical classes: Work on phantom head.*	2 4
Week 4.	Lecture: Preprosthetic therapy. Contraindications. Preprosthetic surgery, preprosthetic periodontology, preprosthetic restorative dentistry. Preprosthetic restorative endodontology - preprosthetic orthodontics. Practical classes: Work on phantom head.*	2 4
Week 5.	Lecture: Preprosthetic therapy, restoration of endodontically treated teeth (principles of root canal preparation and types of dental post and core). Practical classes: Clinical work and work on phantom head.*	2 4
Week 6.	Lecture: Planning of prosthetic therapy, photo and video documentation, protocol of dental photography and esthetic analysis, extraoral, intraoral and macrophotographs. Practical classes: Clinical work and work on phantom head.*	2 5
Week 7.	Lecture: Decision analog or digital therapy. Dental materials. Analog or digital approach: alloys, polymers, composites, ceramics. Choice of material / system. Practical classes: Clinical work and work on phantom head.*	2 4
Week 8.	Lecture: Analog and digital planning. Impressions, registration of intermaxillary	2

	relations, registration with facebow transfer, registration of protrusion, laterotrusion and concepts of occlusion. Practical classes: Clinical work and work on phantom head.*	4
Week 9.	Lecture: Wax up. Scanning technique. Digital planning, Dental photography, digital impression, digital intermaxillary registration, digital facebow, 3D X-rays, face scanners. Practical classes: Clinical work and work on phantom head.*	2 4
Week 10.	Lecture: Digital wax up. Extraoral scanners, CAD programs, CAD design, 3D printers. Design try-in/proceeding mock up, silicone index. Practical classes: Clinical work and work on phantom head.*	2 4
Week 11.	Lecture: Preparing of gingiva for impression. Practical classes: Clinical work and work on phantom head.*	2 4
Week 12.	Lecture: Analog impression. Digital impression. Practical classes: Clinical work and work on phantom head.*	2 4
Week 13.	Lecture: Bite registration. Models, articulator, bite transfer techniques, laboratory provisional. Determination of tooth color. In-office provisional. Models, analog and digital. Articulators, analog and digital. Bite Transfer Techniques. Digital overlay. Laboratory provisional. Practical classes: Clinical work and work on phantom head.*	2 4
Week 14.	Lecture: Analog completion of work and clinical trials of work. Digital completion of work and clinical trials of work. Practical classes: Clinical work and work on phantom head.*	2 4
Week 15.	Lecture: Temporary cementation. Permanent cementation. Indications for the type of cementation. Maintenance of prosthetic work. Practical classes: Clinical work and work on phantom head.* PARTIAL EXAM	2 4

COURSE SYLLABUS: FIXED DENTAL PROSTHETICS - X SEMESTER

Week 1.	Lectures: Bridges - basic terms. Types of dental bridges: cantilever dental bridge, front bridge, lateral bridge, semi-circular, circular bridge, inlay bridge. Practical classes: Clinical work.*	2 5
Week 2.	Lecture: Indications and contraindications for making a dental bridge. Specifics of tooth preparation for a dental bridge (parallelization of teeth). Practical classes: Clinical work.*	2 5
Week 3.	Lecture: Static of dental bridge, the width of the bridge, height of the bridge, bridge resistance, occlusion and articulation of a dental bridge. Practical classes: Clinical work.*	2 5
Week 4.	Lecture: Bridge abutments, evaluation of individual abutment - topographical situation and loading of the abutment, selection of retainer for the bridge. Practical classes: Clinical work.*	2 5
Week 5.	Lecture: Masticatory forces (functional forces, resistance forces – bioreaction forces), General static conception of dental bridges, force in action, biophysical and mechanical law in fixed prosthetics. Static of dental bridge, the width of the	2

	bridge, height of the bridge, bridge resistance, occlusion and articulation of a dental bridge. Practical classes: Clinical work.*	4
Week 6.	Lecture: Selection of materials / systems for making dental bridges (analog and digital way of making bridges – metal ceramic systems). Forms of production. Practical classes: Clinical work.*	2 4
Week 7.	Lecture: Selection of materials / systems for making dental bridges (digital way of making bridges – ceramic materials). Forms of production. Practical classes: Clinical work.*	2 4
Week 8.	Lecture: Selection of materials / systems for making dental bridges (digital way of making bridges – zirconia materials). Forms of production. Practical classes: Clinical work.*	2 4
Week 9.	Lecture: Selection of materials / systems for making dental bridges (digital way of making bridges – zirconia materials). Forms of production. Practical classes: Clinical work.*	2 4
Week 10.	Lecture: Impression procedures using classic and digital methods. Specifics of analog and digital impression in bridge therapy. Bite registration and determination of intermaxillar relation in patients with lost vertical dimension of occlusion. Practical classes: Clinical work.*	2 4
Week 11.	Lecture: Specifics of try-in substructures of dental bridges made of different materials. Specifics of dentine try-in and full anatomy forms of bridges. Practical classes: Clinical work.*	2 4
Week 12.	Lecture: Oral rehabilitation with combined works. Practical classes: Clinical work.*	2 4
Week 13.	Lecture: Esthetic veeners, Inlay, onlay, overlay. Indications, contraindications, selection of materials, types of preparations, try-in and cementation. Practical classes: Clinical work.*	2 4
Week 14.	Lecture: Cementation of dental bridges, esthetic veneers, inlays, onlays and overlays. Practical classes: Clinical work.*	2 4
Week 15.	Lecture: Durability of fixed prosthetic works and complications during and after fixed prosthetic therapy. Practical classes: Clinical work.*	2 4
Week 16.		
Week 17.	FINAL EXAM	
Week 19.-20.	REMEDIAL EXAM	

* The topics of special clinical practical classes are not performed in the listed chronological order, but in the order of the arrival of patients of different casuistics to clinical practical classes.

Item code: SFS0S0904E	**Course Title: BASICS OF PERIODONTOLOGY**		
Cycle: integrated	**Year: V**	**Semester: IX**	**Number of ECTS credits: 4**
Status: obligatory		**Total number of hours: 45** **Lectures** 15 **Exercises** 30	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrolment:	All students enrolled in the 5th year of study		
Aim (objectives) of the course:	- Adopting basic knowledge and clinical skills from the area of periodontology. - To introduce the students with anatomy, biology and physiology of periodontal tissues, epidemiology, aetiology and pathogenesis of periodontal diseases, as well as classifications of periodontal diseases.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Introductory lecture: General terms about the course periodontology 2. Biology of the periodontium 3. Biology of the periodontium 4. Aetiology of periodontal diseases 5. Aetiology of periodontal diseases 6. Aetiology of periodontal diseases 7. Microbiology of periodontal diseases 8. Microbiology of periodontal diseases 9. Immunopathogenetic aspect of periodontal diseases 10. Immunopathogenetic aspect of periodontal diseases 11. Classification and diagnosis of periodontal diseases 12. Epidemiology of periodontal diseases – Gingival indices 13. Epidemiology of periodontal diseases – Periodontal indices 14. X-ray analysis in periodontology 15. X-ray analysis in periodontology		
Learning outcomes:	Through the course Basics of periodontology and through theoretical and practical lessons, the student is going to know:		
	biology of the periodontium, aetiology of periodontal disease, epidemiology of periodontal disease, immunopathogenetic aspect of periodontal disease, classification and diagnosis of periodontal disease, and they are going to be able to perform X-ray analysis independently for the purpose of diagnosing periodontal diseases.		
Teaching methods:	The course is held: 1. lecture ex cathedra for all the students 2. clinical exercises		

Assessment methods with assessment structure:	One of the forms of activity is lecture and practice attendance. Theoretical exam from the completed semester is going to be realized in the written form – test. Points can be acquired in the following way: - regular lecture attendance - 5 points, - regular practice attendance – 5 points - practice activity – 10 points (colloquium 1 and colloquium 2) - partial exam by means of test – 25 points. In this semester the student can acquire a maximum of 45 points. Points that a student acquires in this semester are added to the points in semester X and together they make the final grade.
Literature:	Required: Berislav Topić, Periodontology, biology, immunopathogenesis, practice. Sarajevo – Zagreb, 2005. Pašić E, Hadžić S, Gojkov Vulelić M and Hukić M: Oral microbiology, Faculty of dentistry in Sarajevo, 2017. Additional: Jan Lindhe, Clinical periodontology and dental implantology. According to the 4th English edition (translation in Croatian language), Zagreb, 2004. Đajić Dragoljub: Atlas – Periodontology, Beograd, 2001.

Implementation plan for the course Basics of periodontology semester IX

Week	Form of teaching and curriculum	Number of hours
Week 1	Lecture: Introductory lecture: General terms about the course periodontology Practice: Introductory practice Seminars:	1 2
Week 2	Lecture: Biology of the periodontium Practice: Anamnestic-diagnostic procedure Seminars:	1 2
Week 3	Lecture: Biology of the periodontium Practice: Anamnestic-diagnostic procedure Seminars:	1 2
Week 4	Lecture: Aetiology of periodontal diseases Practice: Anamnestic-diagnostic procedure Seminars:	1 2
Week 5	Lecture: Aetiology of periodontal diseases Practice: Periodontal instruments Seminars:	1 2
Week 6	Lecture: Aetiology of periodontal diseases Practice: Periodontal instruments	1 2

	Seminars:	
Week 7	Lecture: Microbiology of periodontal diseases Practice: Clinical examination of the periodontium Seminars:	1 2
Week 8	Lecture: Microbiology of periodontal diseases Practice: Clinical examination of the periodontium Seminars:	1 2
Week 9	Lecture: Immunopathogenetic aspect of periodontal diseases Colloquium 1: Anamnestic-diagnostic procedure and clinical examination	1 2
Week 10	Lecture: Immunopathogenetic aspect of periodontal diseases Practice: X-ray and OPG analysis Seminars:	1 2
Week 11	Lecture: Classification and diagnosis of periodontal diseases Practice: Oral health indices Seminars:	1 2
Week 12	Lecture: Epidemiology of periodontal diseases – Gingival indices Practice: Demonstration of work on a patient Seminars:	1 2
Week 13	Lecture: Epidemiology of periodontal diseases – Periodontal indices Practice: demonstracija rada na pacijentu Seminars:	1 2
Week 14	Lecture: X-ray analysis in periodontology Practice: X-ray and OPG analysis Seminars:	1 2
Week 15	Lecture: X-ray analysis in periodontology Colloquium 2: X-ray and OPG analysis, instruments, periodontal indices	1 2
Week 17	Written exam of theoretical knowledge by means of a test	
Week 19		

Item code: SFSOSO904E	**Course Title: BASICS OF PERIODONTOLOGY**		
Cycle: integrated	**Year: V**	**Semester: X**	**Number of ECTS credits:** 4
Status: obligatory		**Total number of hours: 45** **Lectures** 15 **Exercises** 30	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrolment:	All students enrolled in the 5th year of study		
Aim (objectives) of the course:	The aim of the course is to, through theoretical and practical lessons, introduce the students with classifications of periodontal diseases, acute and chronic states of the periodontium, diagnostics and differential diagnosis of periodontal diseases. - To educate the students about the aims of periodontal treatment, as well as the significance of initial periodontal therapy and subgingival curettage, as well as		

	periodontal treatment of patients with systemic diseases and therapy of those that need multidisciplinary approach. - To teach the students about pulpo-periodontal complications, as well as treatment and preparation of medicinally compromised high-risk patients.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Acute states in periodontology 2. Acute states in periodontology 3. Chronic states in periodontology 4. Chronic states in periodontology 5. Chronic states in periodontology 6. Chronic states in periodontology 7. Recessions 8. Complications of periodontal diseases 9. Aims of periodontal therapy 10. Initial therapy 11. Initial therapy 12. Initial therapy 13. Treatment of high-risk patients 14. Subgingival curettage 15. Recapitulation of acute and chronic states of the periodontium
Learning outcomes:	Student is going to know: clinical picture, aetiology, diagnosis, differential diagnosis and treatment protocol for acute and chronic states of the periodontium. Student is going to be familiarized with complications of periodontal diseases, pulpo-periodontal complex, differential-diagnostic procedures and treatment protocol for these states. Through theoretical and practical lessons student is going to be educated on the aims of periodontal therapy and the importance of all segments of initial therapy (patient motivation, significance of oral hygiene, plaque control, removal of local etiological factors and physiotherapy)m as well as indications, instruments and methods of performing subgingival curettage. Student is going to be able to practically perform initial therapy and subgingival curettage. They are going to know periodontal treatment of high-risk patients. And the importance of the influence of systemic diseases on the onset and development of periodontal diseases.
Teaching methods:	The course is held: 1. lecture ex cathedra for all the students 2. clinical exercises
Assessment methods with assessment structure:	One of the forms of activity is lecture and practice attendance. Theoretical exam from the completed semester is going to be realized in the written form – test. Points can be acquired in the following way: - regular lecture attendance - 5 points, - regular practice attendance – 5 points - practical exam – 10 points - oral exam – 35 points. In this semester a student can acquire a maximum of 55 points. Points that the student acquires in this semester are added to the points that the student acquired in semester IX and together they make the final grade. The final exam consists of practical exam on a patient and oral exam of theoretical knowledge from the completed semester X. The grade from the test at the end of semester IX enters the final grade. If the student didn't pass the partial exam they take the curriculum from semester IX and X together in the form of oral exam.

	According to the above-mentioned the grade scale is a s follows: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points; 9 (B) - above average, with some errors, carries 85-94 points; 8 (C) - average, with noticeable errors, carries 75-84 points; 7 (D) -generally good, but with significant shortcomings, carries 65-74 points; 6 (E) -satisfies the minimum criteria, carries 55-64 points; 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: Berislav Topić, Periodontology, biology, immunopathogenesis, practice. Sarajevo – Zagreb, 2005. Pašić E, Hadžić S, Gojkov Vulelić M and Hukić M: Oral microbiology, Faculty of dentistry in Sarajevo, 2017. Additional: Jan Lindhe, Clinical periodontology and dental implantology. According to the 4th English edition (translation in Croatian language), Zagreb, 2004. Đajić Dragoljub: Atlas – Periodontology, Beograd, 2001.

Implementation plan for the course Basics of periodontology semester X

Week	Form of teaching and curriculum	Number of hours
Week 1	Lecture: Acute states in periodontology Practice: Individual work with a patient Seminars:	1 2
Week 2	Lecture: Acute states in periodontology Practice: Individual work with a patient Seminars	1 2
Week 3	Lecture: Chronic states in periodontology Practice: Individual work with a patient Seminars:	1 2
Week 4	Lecture: Chronic states in periodontology Practice: Individual work with a patient Seminars:	1 2
Week 5	Lecture: Chronic states in periodontology Practice: Individual work with a patient Seminars:	1 2
Week 6	Lecture: Chronic states in periodontology Practice: Individual work with a patient Seminars:	1 2
Week 7	Lecture: Recessions Practice: Individual work with a patient Seminars:	1 2
Week 8	Lecture: Complications of periodontal diseases Practice: Individual work with a patient Seminars:	1 2
Week 9	Lecture: Aims of periodontal therapy Practice: Individual work with a patient Seminars:	1 2
Week 10	Lecture: Initial therapy Practice: Individual work with a patient Seminars:	1 2

Week 11	Lecture: Initial therapy Practice: Individual work with a patient Seminars:	1 2
Week 12	Lecture: Initial therapy Practice: Individual work with a patient Seminars:	1 2
Week 13	Lecture: Treatment of high-risk patients Practice: Individual work with a patient Seminars:	1 2
Week 14	Lecture: Subgingival curettage Practice: Individual work with a patient Seminars:	1 2
Week 15	Lecture: Recapitulation of acute and chronic states of the periodontium Practice: Practical exam	1 2
Week 17	Final exam (Oral exam)	
Week 19	Makeup exam date for students who have not passed the final exam.	

Item code: SFSOS0905E	**Course Title: ENDODONTICS**		
Cycle: integrated	**Year: V**	**Semester: IX and X**	**Number of ECTS credits:** 8 (for IX and X semester)
Status: obligatory		**Total number of hours:** 60; 60 **Lectures:** 15; 15 **Practicals:** 45; 45	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs.**		
Prerequisite for enrollment:	All students enrolled in the 5th year of study. The condition for taking the final exam is passing the exam Preclinical Endodontics (4th year) and Restorative Dentistry (4th year).		
Aim (objectives) of the course:	The aim of the course is to provide students with theoretical and practical basics of endodontic diagnostic protocol, etiology, pathogenesis and clinical classification of pulpal and periapical diseases, shaping, medication and obturation of the root canal, emergencies, local anesthesia and analgesia in endodontics, complications and failures of endodontic therapy and the principles of postendodontic restoration.		

Thematic units:	1. Endodontic diagnostic protocol 2. Etiology, pathogenesis and clinical classification of pulpal and periapical diseases 3. Manual and rotary root canal instrumentation techniques 4. Irrigation and medication of root canals 5. Root canal obturation 6. Postendodontic restoration 7. Assessment of outcomes, complications and failures of endodontic therapy 8. Endodontic and periodontal interrelationships 9. Endodontic aspect of traumatic dental injuries
Learning outcomes:	At the end of the IX and X semesters of Endodontics, students will be able to: - describe the etiology, pathogenesis and clinical classification of pulpal and periapical diseases, - describe the methods of shaping, irrigation and medication of root canals, - explain materials for definitive root canal obturation as well as obturation techniques, - explain the principles and ways of making postendodontic restorations, - discuss complications during endodontic therapy, - discuss the relationship between endodontic space and periodontium, - recognize and distinguish the endodontic aspect of dental trauma, - recognize emergencies in endodontics, - explain the methods of local anesthesia and analgesia in endodontics, - perform endodontic dental treatment.
Teaching methods:	Classes will take place through: - interactive lectures, - obligatory program of clinical practicals in groups and - consultations.
Assessment methods with assessment structure:	The practical exam and the theoretical part are taken into account during the assessment. The practical exam is assessed on the basis of the entire work during the semester, carries 20 points and includes: 1. self diagnosis of pulp and periapical diseases, 2. access cavity preparation, pulp extirpation and odontometry, 3. hemomechanical treatment and medication of the root canal, 4. root canal obturation, 5. postendodontic restoration. The theoretical part includes a partial exam, a short written test and a final exam. The first partial exam is taken during the ninth semester, carries 35 points and is considered passed if the student has achieved a minimum of 18 points. A short written knowledge test is taken during the X semester and carries 10 points. The final exam is taken orally. At the final exam, the student must achieve a minimum of 55% correct answers. The final grade is formed by adding up the points achieved through partial exams and the practical exam or final exam, and according to the scale of points:

	10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) - generally good, but with significant shortcomings, carries 65-74 points 6 (E) - satisfies the minimum criteria, carries 55-64 points 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: Torabinejad M, Walton RE. Endodoncija: načela i praksa. Naklada Slap, Zagreb 2010. Konjhodžić A, Jakupović S, Tahmiščija I, Korać S, Hasić-Branković L, Džanković A. Endodontska propedeutika, 1 ed. Sarajevo: Stomatološki fakultet sa klinikama; 2017. Živković S. i saradnici: Praktikum endodontske terapije. Data Status, 2012. Additional: Ingle JI, Bakland LK. Endodontics. People's Medical Publishing House-USA, 2016. Cohen S, Burns RC. Pathways of the pulp. Mosby Inc, St. Louis, 2015.

Course syllabus Endodontics IX semester

Week	Teaching and learning methods	Number of hours
Week 1.	1. Lecture: Introductory class (introduction to the content of the course, the way of teaching and exams, and literature) 1. Introductory practicals - introduction to the endodontic diagnostic protocol	1 3
Week 2.	2. Lecture: Endodontic diagnostic protocol 2. Practicals: Root canal treatment	1 3
Week 3.	3. Lecture: Radiological diagnostics in endodontics 3. Practicals: Root canal treatment	1 3
Week 4.	4. Lecture: Etiology, pathogenesis and clinical classification of pulpal diseases 4. Practicals: Root canal treatment	1 3
Week 5.	5. Lecture: Necrosis of dental pulp and microbiology of infected root canal 5. Practicals: Root canal treatment	1 3
Week 6.	6. Lecture: Etiology, pathogenesis and clinical classification of periapical diseases 6. Practicals: Root canal treatment	1 3
Week 7.	7. Lecture: Local anesthesia and analgesia in endodontics 7. Practicals: Root canal treatment	1 3
Week 8.	8. Lecture: Shaping of the root canal system - description of manual instrumentation techniques 8. Practicals: Root canal treatment	1 3
Week 9.	9. Lecture: Characteristics of rotary endodontic instruments and principles of instrumentation 9. Practicals: Root canal treatment	1 3
Week 10.	10. Lecture: Root canal irrigation - means and protocol 10. Practicals: Root canal treatment	1 3
Week 11.	11. Lecture: Medication of root canals - means and protocol 11. Practicals: Root canal treatment	1 3

Week 12.	12. Lecture: Root canal obturation materials 12. Practicals: Root canal treatment	1 3
Week 13.	13. Lecture: Root canal obturation techniques 13. Practicals: Root canal treatment	1 3
Week 14.	14. Partial exam	
Week 15.	15. Lecture: Interactive repetition 15. Practicals: Root canal treatment	1 3

Course syllabus Endodontics X semester

Week	Teaching and learning methods	Number of hours
Week 1.	1. Lecture: Postendodontic restoration 1. Practicals: Root canal treatment	1 3
Week 2.	2. Lecture: Endodontic and periodontal interrelationships 2. Practicals: Root canal treatment	1 3
Week 3.	3. Lecture: Endodontic emergencies 3. Practicals: Root canal treatment	1 3
Week 4.	4. Lecture: Traumatic injuries of the supporting tissues and therapy 4. Practicals: Root canal treatment	1 3
Week 5.	5. Lecture: Longitudinal tooth fractures 5. Practicals: Root canal treatment	1 3
Week 6.	6. Lecture: Endodontic aspect of traumatic dental injuries 6. Practicals: Root canal treatment	1 3
Week 7.	7. Lecture: Geriatric endodontics 7. Practicals: Root canal treatment	1 3
Week 8.	8. Lecture: Single- visit and multiple- visit root canal treatment 8. Practicals: Root canal treatment	1 3
Week 9.	9. Lecture: Endodontic complications 9. Practicals: Root canal treatment	1 3
Week 10.	10. Lecture: Nonsurgical retreatment 10. Practicals: Root canal treatment	1 3
Week 11.	11. Lecture: Evaluation of endodontic outcomes 11. Practicals: Root canal treatment	1 3
Week 12.	12. Lecture: Endodontic surgery 12. Practicals: Root canal treatment	1 3
Week 13.	13. Lecture: Interactive repetition 13. Practicals: Root canal treatment	1 3
Week 14.	14. short written test	
Week 15.	15. Lecture: Interactive repetition 15. Practicals: Root canal treatment	1 3
Week 17.	16. Final exam, Remedial exam	
Week 19.	17. Remedial exam	

Item code: SFSOS5091	Course Title: Preclinical orthodontics		
Cycle: integrated	**Year: V**	**Semester: IX**	**Number of ECTS credits: 4**
Status: obligatory		**Total number of hours: 60** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 2(30)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 5th year of study		
Aim (objectives) of the course:	The aim of the course is to educate students to: - Basic processes of growth and development of the craniofacial complex - Growth and development of dentition and occlusion - Concept and indicators of biological age in orthodontics - Basics of etiology of an irregular pattern of growth and development - Preclinical orthodontic diagnostic procedures - Design and construction of mobile and thermoplastic orthodontic appliances		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units were formed with the aim of students - master the basic growth processes of the development of the craniofacial complex, dentition and occlusion, -to adopt the concepts of biological age, -to master the basics of preclinical orthodontics through diagnostic and laboratory procedures. The weekly curriculum is attached		
Learning outcomes:	Knowledge: Students will be able to describe and explain: -Basic processes of prenatal and postnatal growth of craniofacial complex development, with emphasis on growth and development of maxilla and mandible, dentition and occlusion. -List the basic etiological factors that lead to improper growth and development -Describe and explain the concept and indicators of biological age Skills: students will be able to do Analysis orthodontic study models (digital and plaster) Analysis orthopantomogram and dental age Analysis lateral cephalogram and skeletal age Analysis dental photography Competences: students will be trained to -recognize the correct or incorrect pattern of craniofacial growth -evaluate the further development of orthodontic anomalies in relation to the etiology.		
Teaching methods:	Interactive lectures Practical exercises		
Assessment methods	Students will take a partial exam, a practical exam and a final exam, and will be continuously evaluated during the semester while working on the		

with assessment structure[5]:	exercises. The partial exam is conducted during the semester, in writing form in the 8th week and carries 20 points. By continuous evaluation of the work on the exercises, the student can win a maximum of 10 points. The practical exam implies an assessment of acquired skills, it is taken in the 14th week of the semester and carries a maximum of 20 points. The final oral exam carries a total of 50 points. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature[6]:	Required: 1. Nakaš E, Tiro A, Džemidžić V, Redžepagić – Vražalica L, Ajanović M. "Osnovi ortodontske dijagnostike", Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu, 2014. 2. Redžepagić – Vražalica L, Nakaš E, Tiro A, Džemidžić V, Jelešković A, Bajrić E. "Ortodontske nepravilnosti", Sarajevo : Univerzitet u Sarajevu – Stomatološki fakultet sa stomatološki kliničkim centrom, 2024. 3. Marković M. Ortodoncija. Ortodontska sekcija Srbije, Beograd 4. Proffit WR, Fields HW, Sarver DM. Contemporery orthodontics, 4th edition. St. Louis: Mosby; 2006 Supplementary: 1. Marković N , Rakanović –Todić m , Burnazović – Ristić L, Arslanagić A, Tiro A, Džemidžić V. "Oralno zdravlje trudnica i dojenčadi – specifičnosti stomatološkog tretmana", Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu, 2021

Teaching plan Preclinical Orthodontics

Week	Course form and content	Number of hours
Week 1.	Lecture: Introduction to the course, history, connection of orthodontics with other disciplines (grading, midterm exam, final exam, absences) Practical exercises: Introductory exercises	2 2
Week 2.	Lecture: Orthodontic aspects of anatomy, histology and physiology of the head and neck (bones, muscles, types of ossification, bone remodeling, metabolism of Ca, P, Vitamin D) Practical exercises: Impressions	2 2
Week 3.	Lecture: Prenatal growth and development of the craniofacial complex Practical exercises: Laboratory fabrication of study models	2 2
Week 4.	Lecture: Postnatal growth and development of the neurocranium: skull base and cranial vault, theories of growth Practical exercises: Laboratory fabrication of study models	2 2

[5] The structure of points and point criteria for each subject is determined by the council of the organizational unit before the beginning of the academic year in which the subject is taught following Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

[6] The Senate of the higher education institution as an institution or the council of the organizational unit of the higher education institution as a public institution determines mandatory and recommended textbooks and manuals, as well as other recommended literature based on which it prepares and takes the exam as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton

Week 5.	Lecture: Postnatal growth and development of the viscerocranium: maxillary complex and mandible Practical exercises: Intraoral scanning	2 2
Week 6.	Lecture: Growth and development of dentition and occlusion from birth to completion of primary dentition Practical exercises: Dental status	2 2
Week 7.	Lecture: Growth and development of mixed dentition and occlusion Practical exercises: Dental status	2 2
Week 8.	Lecture: Growth and development of permanent dentition, occlusion keys Practical exercises: Dental status	2 2
Week 9.	Lecture: Metric and space analyses in primary, mixed and permanent dentition Practical exercises: Analyses in deciduous and mixed dentition (digital and on study models)	2 2
Week 10.	Lecture: Etiological factors in orthodontics Practical exercises: Analyses in deciduous, mixed and permanent dentition (digital and study models)	2 2
Week 11.	Lecture: Etiological factors in orthodontics Practical exercises: Analyses in deciduous, mixed and permanent dentition (digital and study models)	2 2
Week 12.	Lecture: Abnormalities in growth and development the craniofacial complex, CLP (cleft lip and palate) and the most common craniofacial syndromes Practical exercises: Analysis in deciduous, mixed and permanent dentition (digital and study models)	2 2
Week 13.	Lecture: Craniometry, radiographic cephalometry, and photogrammetry in orthodontics Practical exercises: Analysis of photographs, CBCT scans, radiographs, digital models	2 2
Week 14.	Lecture: Concept of biological age in orthodontics Practical exercises: Determination of dental and skeletal maturity on x-ray	2 2
Week 15.	Lecture: Recapitulation Practical exercises: Recapitulation Clinical exam	2 2
Week 17.	Final exam	
Week 19.		

Item code: SFSIS0908E	**Course Title: GERONTOSTOMATOLOGY**		
Cycle: integrated	**Year: V**	**Semestar: X**	**Number of ECTS credits:** 2
Status: obligatory		**Total number of hours: 30** **Lectures** 15 **Practicals** 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this sectio**n]		
Prerequisite for enrollment:	All students enrolled in the 5th year of study		

Aim (objectives) of the course:	The aim of the course is to get acquainted with the specifics of elderly patients, with the application of appropriate diagnostic procedures, planning and performing various types of therapies (techniques of oral hygiene, endodontic treatment, restorative procedures of hard dental tissues, customized surgery, and classic prosthetic reconstructions of aesthetics and function orofacial system).
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Biological and physiological aspects of aging 2. The impact of systemic diseases on oral health in the elderly 3. Preventive treatment, diagnosis and therapy of diseases of the orofacial system in the elderly
Learning outcomes:	After completing the X semester of Gerontostomatology, the student will be able to: -understand the specifics of dental treatment in the elderly,
	-recognize common medical / dental conditions and diseases in elderly patients as well as the etiology of these diseases, - develop an appropriate dental therapy plan with all necessary diagnostic protocols.
Teaching methods:	- interactive lectures, - exercises
Assessment methods with assessment structure:	The exam consists of a partial exam during the semester and a final exam, which are taken in writing. Each exam carries 50 points. A partial exam is considered passed if the student has achieved a minimum of 28 points. The final exam is considered passed if the student has passed 55% of the material. The final grade is formed by adding up the points achieved through the partial and final exam, as follows: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: Adnan Ćatović i sur. Gerontostomatologija. Medicinska naklada, Zagreb, 2010. ili Adnan Ćatović i sur. Dentalna medicina starije dobi u praksi. Medicinska naklada, Zagreb, 2018. Additional: Pedersen P-H, Walls AWG, Ship JA. Textbook of geriatric dentistry, 3rd Ed. Wiley-Blackwell, New York, 2015. Paula K. Friedman. Geriatric Dentistry Caring for our Aging Population, 1st Ed. Wiley-Blackwell 2014.

Course syllabus - Gerontostomatology

Week	Teaching and learning methods	Number of hours

Week 1.	1. Lecture: Introduction to gerontostomatology Practicals - clinical case analysis	1 1
Week 2.	2. Lecture: Biological and physiological aspects of aging Practicals - clinical case analysis	1 1
Week 3.	3. Lecture: Salivary function and salivary disorders in the elderly Practicals - clinical case analysis	1 1
Week 4.	4. Lecture: The impact of systemic diseases on oral health in the elderly Practicals - clinical case analysis	1 1
Week 5.	5. Lecture: The use of drugs in the elderly Practicals - clinical case analysis	1 1
Week 6.	6. Lecture: Nutrition and preventive dentistry in the elderly Practicals - clinical case analysis	1 1
Week 7.	Partial exam	
Week 8.	7. Lecture: Orofacial pain in the elderly Practicals - clinical case analysis	1 1
Week 9.	8. Lecture: Diseases of hard dental tissues in the elderly Practicals - clinical case analysis	1 1
Week 10.	9. Lecture: Diseases of endodontium in the elderly Practicals - clinical case analysis	1 1
Week 11.	10. Lecture: Oral medicine in the elderly Practicals - clinical case analysis	1 1
Week 12.	11. Lecture: Periodontal diseases in the elderly Practicals- clinical case analysis	1 1
Week 13.	12. Lecture: Fixed prosthetic and mobile prosthetic therapy in the elderly Practicals - clinical case analysis	1 1
Week 14.	13. Lecture: Oral surgical diseases and therapy in the elderly Practicals - clinical case analysis	1 1
Week 15.	14. 3. Lecture: Interactive repetition Practicals - repetition	1 1
Week 16.	15. Final exam, Remedial exam	
Week 17.	16. Remedial exam	

Item code: SFS0S0704E	**Course Title: ORAL MEDICINE PATHOLOGY 2**		
Cycle: integrated	**Year: V**	**Semester: IX**	**ECTS credits: 2**
Status: obligatory		**Total hours: 45** **Lectures 30** **Practice** 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs**		

Prerequisite for enrollment:	All students enrolled in the 5th year of study
Aim (objectives) of the course:	The aim of the course is to educate students about the etiopathogenesis, clinical expressions and therapeutic measures of numerous pathological conditions and diseases that manifest in the mouth. Through theoretical and practical classes, train students to recognize and notice early symptoms, to adequately apply preventive measures and to eliminate local pathological processes with timely and adequate therapy or to treat systemic diseases in cooperation with an appropriate specialist.
Thematic units: *(If necessary, the performance plan is determined by weeks, taking into account the*	1. Blood diseases- diseases of erythropoiesis 2. Blood diseases- diseases of leukopoiesis and hemostasis 3. Precancerous lesions 4. Precancerous conditions 5. Diagnosis and therapy of potentially malignant lesions 6. Focal complex
specifics of organizational units)	7. Diagnosis and detection of oral foci 8. Modern concept of focal therapy 9. Benign tumors 10. Malignant tumors 11. Oral mucositis 12. Drug therapy for oral diseases 13. Drug therapy for oral diseases 14. Use of lasers in oral medicine 15. Prevention and control of infections
Learning outcomes:	Through the subject of Oral Medicine Pathology 2, students will be educated on the importance of detecting oral precancerous lesions. They will be familiar with the significance of all elements of blood composition, diseases of erythropoiesis, leukopoiesis, hemoblastosis, hemostasis, as well as complications when working with these high-risk patients - premedication and a multidisciplinary approach. They will gain basic knowledge on the importance of dysfunction of endocrine disorders and their implications on oral mucosa, on the contemporary aspect of focal infections, diagnosis and therapy, and they will be familiar with differential diagnostic methods and therapeutic protocols with a multidisciplinary approach for changes on the oral mucosa at different stages of life. They will be educated in writing prescriptions for medications in the therapy of lesions on the oral mucosa.
Teaching methods:	The course is held: 1. lecture ex-cathedra for all the students 2. clinical exercises (practice)

Assessment methods with assessment structure:	One form of activity is attending lectures and exercises. Testing of theoretical knowledge from the semester will be done in written form - through a test. Students can earn points in the following way: • regular attendance at lectures - 5 points, • attendance at exercises - 5 points • knowledge check through a short test in the 7th week - 10 points • written analysis of a clinical case in the 12th week - 15 points • practical exam - 10 points • oral knowledge check - 55 points The maximum number of points is 100. The final grade consists of the sum of points earned in the 7th semester and the sum of points from the 8th semester. 10(A) - excellent performance, with no errors or minor errors, carrying 95-100 points. 9 (B) - above average, with occasional errors, carrying 85-94 points 8(C) - average, with noticeable errors, carrying 75-84 points 7(D) - generally good, but with significant deficiencies, carrying 65-74 points. 6(E) - meets minimum criteria, carrying 55-64 points. 5(F) - does not meet minimum criteria, less than 55 points
Literature:	Mandatory: 1. Topić B. et al. Oral Medicine, Faculty of Dentistry, Sarajevo, 2001. 2. Dedić A. Autoimmune Oral Diseases - Practicum, Sarajevo, 2010. 3. Pašić E., Hadžić S., Gojkov Vulelić M., Hukić M. Oral Microbiology, Faculty of Dentistry, Sarajevo, 2017. 4. Hadžić S., Gojkov Vukelić M., Pašić E., Mujić Jahić I., Muharemović A. Potentially Malignant Oral Disorders - Oral Precanceroses, Faculty of Dentistry, Sarajevo, 2022.
	Supplementary: 1. Dedić A. Diabetes Mellitus - Oral Aspects, University Edition, Sarajevo, 2004. 2. Đukanović D. et al. Atlas of Soft Tissue Diseases of the Oral Cavity, Belgrade, 2001. 3. Laskaris G. Atlas of Oral Diseases, III revised edition (translated into Croatian), Zagreb 2003. 4. Greenberg M., Glick M. Burket's Oral Medicine, Diagnosis and Treatment, 10th edition, Medical Publishing, Zagreb 2006.

Implementation plan for the course: Oral medicine pathology IX semester

Week	Form of teaching and curriculum	Number of hours
Week 1.	Lecture: Blood diseases- diseases of erythropoiesis Practice: Individual work with patient	1 2
Week 2.	Lecture: Blood diseases- diseases of leukopoiesis and hemostasis Practice: Individual work with patient	1 2
Week 3.	Lecture: Precancerous lesions Practice: Individual work with patient	1 2
Week 4.	Lecture: Precancerous conditions Practice: Individual work with patient	1 2
Week 5.	Lecture: Diagnosis and therapy of potentially malignant lesions Practice: Individual work with patient	1 2

Week 6.	Lecture: Focal complex Practice: Individual work with patient	1 2
Week 7.	Lecture: Diagnosis and detection of oral foci Practice: Written assessment through a short test (Essay)	1 2
Week 8.	Lecture: Modern concept of focal therapy Practice: Individual work with patient	1 2
Week 9.	Lecture: Benign tumors Practice: Individual work with patient	1 2
Week 10.	Lecture: Malignant tumors Practice: Individual work with patient, writing a medical opinion with a prescription for treatment	1 2
Week 11.	Lecture: Oral mucositis Practice: Individual work with patient, writing a medical opinion with a prescription for treatment	1 2
Week 12.	Lecture: Drug therapy for oral diseases Practice: Written processing of a clinical case.	1 2
Week 13.	Lecture: Drug therapy for oral diseases Practice: Individual work with patient, writing a medical opinion with a prescription for treatment	1 2
Week 14.	Lecture: Use of lasers in oral medicine Practice: Individual work with patient, , writing a medical opinion with a prescription for treatment	1 2
Week 15.	Lecture: Prevention and control of infections Practice: Individual work with patient, writing a medical opinion with a prescription for treatment	1 2

Code: SFSOM1102E	**Course title: OTORHINOLARYNGOLOGY**		
Level: undergraduate	**Year:** V	**Semester:** IX	**ECTS points:** 4
Status: Obligatory		**Course load:**30 (lectures-15 + practicals–15)	
Proffesor in charge			
Entry requirements:	All students enrolled in the 5th year of study		

Course goals:	The integrated undergraduate and graduate university study of dental medicine enables students to gain knowledge and skills needed to become doctors of dental medicine. Since doctor of dental medicine works in oral cavity he/she is able to see before other physicians pathological conditions of oral cavity and pharynx that are area of interest of otorhinolaryngologist. Recognition of this pathology enables doctor of dental medicine to make early diagnosis and promptly refer patient to an otorhinolaryngologist. Therefore, the course goals are: - To enable student to gain knowledge of causes, clinical picture, diagnostics and therapy of pathologic conditions of ear, nose, paranasal sinuses, pharynx, oesophagus, larynx, trachea, and other parts of face and neck that are area of interest of otorhinolaryngologist. - To enable student to gain skills of establishing diagnosis and providing first aid for otorhinolaryngological problems. - To enable student to gain positive attitudes that are important for his/her communication with patients, colleagues, and associates in management of medical issues.
Topics:	**LECTURE TOPICS** **Otology, audiology –** Introduction to otorhinolaryngology and head and neck surgery. Applied anatomy of the ear. Physiology of hearing and balance. Nystagmus. Inflammatory diseases of the ear. Hearing loss and deafness. Hearing aids. Peripheral vertigo. Otogenic complications. Basics of surgical treatment of ear diseases. **Rhinology -** Nose and paranasal sinuses: embriology in brief, applied anatomy and physiology. Functions of the nose. Nasal cycle. Rhinitis (acute, chronic, infectious, non-infectious). Rhinosinuitis (acute, chronic). Odontogenic sinusitis. Nasal polyposis. Antrochoanal polyp. Complications of rhinosinusitis. Rhinologic emergencies. Epistaxis. Nasal foreign bodies. Nose injuries. Forensic significance. Tumors of the nose, sinuses, and nasopharynx. Basic principles of sinonasal tumor treatment. **Pharyngology –** Oral cavity, pharynx, tonsils: anatomy and physiology in brief. Inflammatory diseases of the pharynx and tonsils. Complications of tonsillitis. Laryngopharyngeal reflux. Tonsil problem. International sore throat guidelines. Tumors of oral cavity and pharynx. **Laryngology –** Applied anatomy and physiology of the larynx. Congenital laryngeal malformations. Laryngeal injuries. Stridor (types, differential diagnosis). Laryngitis. Epiglottitis. Traheotomy, coniotomy. Foreign body in the upper and lower respiratory tract. Laryngeal tumors. Basic principles of laryngeal tumor treatment. **PRACTICALS TOPICS**

	Medical office with equipment of otorhinolaryngologist. Otoscopy. Presentation of otomicroscopy and ear endoscopy. Aural toilet. Work at ENT polyclinic Types of tests used to evaluate hearing and balance. Audiology office. Office for examination of the vestibular system. Work at ENT polyclinic. Presentation of features of an ENT-HN operating room. Monitoring of otosurgery and other ENT-HN surgical procedures. ENT office: instruments, tools, and devices for examination of head and neck. Physical examinations of the nose and paranasal sinuses. Work at ENT polyclinic. Radiological examinations of the nose and sinuses (X-rays, CT, MRI). Work at ENT polyclinic. Presentation of the EPOS guidelines and ARIA guidelines. Work at ENT polyclinic. Materials, instruments,and procedures for epistaxis treatment. Video presentations of different procedures of epistaxis treatment performed on educational medical human model. Instruments and procedures for treatment of nasal injuries. Presentation of surgical treatment of sinonasal tumors. Monitoring of ENT-HN surgical procedures. Oropharyngoscopy: examination of oral cavity and pharynx. Work at ENT polyclinic. Regions of the neck. Neck palpation. Work at ENT polyclinic. Indirect laryngoscopy. ENT office for endoscopy – endoscopy of the larynx and hypopharynx. Work at ENT polyclinic. Specific features of an ENT-HN operating room – equipment for a microlaryngocopy, rigid oesophagoscopy and trecheobronhoscopy. Tracheal cannula. Caring for a patient with a tracheostomy. Work at ENT polyclinic.
Learning outcomes:	After attending and passing the course *Otorhinolaryngology*, the students will gain knowledge, skills and attitudes which make them capable to actively perform prevention, transfer of knowledge, basics of diagnostics, and provide first aid for ENT problems. Gained compentencies are listed below: **General competences:** During the study, the students will be able to plan self-study in a critical and self-critical way of investigating scientific truths. The students will be able to demonstrate personality qualities (team work and personal contribution, interest, active listening and construction of positive relationships with members of the group, ability to defend their attitudes). **Specific competences**: The student will know surgical anatomy of the organs and regions of the head and neck which are an otorhinolaryngologist's area of interest, and be able to use this knowledge for understanding of the basics of the ENT surgical procedures. The student will know to use the basics of clinical physiology, embriology and histology for explanation of many pathological conditions of the head and neck which are an otorhinolaryngologist's area of interest. The student will perform basics of management and provide first aid for ENT problems. The student will be able to use specific instruments and aids for basic diagnostic procedures to determine the state of the organs of the head and neck dealing with otorhinolaryngology. Based on the above acquired knowledge and skills, the students will be able to carry out the transfer of knowledge, prevention and treatment of diseases in areas of otorhinolaryngology. The students will acquire knowledge of all urgent conditions and the ability of giving first aid in part of urgent conditions, and in particular in the cases with diseases and injuries in the crossing area of the respiratory and digestive tract. Learning outcomes will be evaluated during classes by continuous assessment (oral, written) and acquired practical skills in exercises (work with patients), discussions during classes and the final exam (written).
Teaching methods:	The course is comprised of: - Lectures - Practicals for groups of no more than 10 students Student responsibilities are attendance and active participation in the teaching process and in the knowledge and skills evaluation.

	At practicals, the student learns about the instruments and devices used to diagnose and treat diseases that are in the domain of the course. The students first learn how to use these tools on each other, and afterwards use them to examine the patients. In practices and offices of the Polyclinic and hospital infirmaries, the student assist the specialist or independently performs diagnostic procedures or therapeutic interventions with the supervision and assistance from the specialist. In operating rooms, the students is acquainted with materials, instruments, devices and procedures that are specific to otorhinolaryngology. The students monitor and assist on operations of the head and neck, work independently on primary treatment of less regular wounds with specialist supervision. **Remark** – In the case of extraordinary situations limiting students` access to health institutions, teaching methods will be adjusted to online teaching (video presentations of skills performed on education medical models, video presentations of patients, video presentations of surgical procedures, etc.).

Methods for knowledge assessment and rules of grading:

Detailed evaluation within the European Credit Transfer System			
OTORHINOLARYNGOLOGY (ECTS points - 5)			
STUDENT RESPONSIBILITIES	**HOURS (ESTIMATE)**	**SHARE IN ECTS**	**SHARE IN GRADE**
Class attendance and active participation (with IL)	50	2.00	15%
Practicals (skills)	25	1.00	25%
Final exam (written)	70	2.00	60%
Total	145	5.00	100%

KNOWLEDGE AND SKILLS GRADES SCALES

PRACTICALS

Continuous evaluation of adopted knowledge and skills is performed at practicals. Absence from practical (0 points) must be compensated..
Scoring of student`s activity at practicals: 0 points – not satisfying, 1.5 – satisfying, 2.0 – good, 2.5 – very good, excellent

Knowledge and skills	Maximal score	Minimal satisfying score
Per practical	2.5	1.5
Total	20	12

INTERACTIVE LEARNING (IL)

Interactive learning (IL) is comprised of evaluation of student`s foreknowledge of next lecture (10 minutes) and active participation in later discussion on issues presented at lecture (10 minutes).
Scoring of IL per lecture: grade 6 – 1.0 point; grade 7 – 1.1 to 1.2 ponts; 8 – 1.3 to 1.4 points; 9 – 1.5 points; 10 – 1.6 points.

Interactive learning	Maximal score	Minimal satisfying score
Per lecture	1.6	1.0
Total	14	8

FINAL EXAM

Final exam – written test (32 items, multiple choice questions, one correct answer).

Grades	Scoring
5 (F)	≤18
6 (E)	19-21
7 (D)	22-24
8 (C)	25-28
9 (B)	29-30
10 (A)	31-32

	FINAL GRADE Grade / Scoring 5 (F) / ≤ 38 6 (E) / 39 - 45 7 (D) / 46 - 52 8 (C) / 53 - 58 9 (B) / 59 - 62 10 (A) / 63 - 66
Literature:	**Required**: 1. Baley JB, Johnson JT, and Rosen CA. Bailey's Head and Neck Surgery. 5th edition. Philadelphia, PA: Lippincott Williams and Wilkins; 2013. 2. Jelavić B, Leventić M. Clinical Skills in Otorhinolaryngology and Head and Neck Surgery for Medical Students. Mostar: Pressum; 2022. **Recommended**: 1. Probst R, Grevers G, Iro H. Otorhinolaryngology: A Step-by-Step Learning Guide, 2nd edition. Stuttgart, New York: Thieme; 2018. 2. . Scholes MA, Ramakrishnan VR. ENT Secrets, 4th edition. Philadelphia: Elsevier; 2016. 3. Presentations of lectures are available to students. 4. Video presentations of skills performed on education medical models are available to students.

Week	Teaching methods and topics	No of acad. hours
Week 1	LECTURE: Nose and paranasal sinuses: embriology in brief, applied anatomy and physiology. Functions of the nose. Nasal cycle. PRACTICALS: ENT office: instruments, tools, and devices for examination of head and neck.	1 1
Week 2	LECTURE: Rhinitis (acute, chronic, infectious, non-infectious). Rhinosinuitis (acute, chronic). PRACTICALS: Physical examinations of the nose and paranasal sinuses. Work at ENT polyclinic.	1 1
Week 3	LECTURE: Odontogenic sinusitis. Nasal polyposis. Antrochoanal polyp.. PRACTICALS: Radiological examinations of the nose and sinuses (X-rays, CT, MRI). Work at ENT polyclinic..	1 1
Week 4	LECTURE: Complications of rhinosinusitis. Rhinologic emergencies... PRACTICALS: Presentation of the EPOS guidelines and ARIA guidelines. Work at ENT polyclinic.	1 1
Week 5	LECTURE: Epistaxis. Nasal foreign bodies. PRACTICALS: Materials, instruments,and procedures for epistaxis treatment. Video presentations of different procedures of epistaxis treatment performed on educational medical human model..	1 1
Week 6	LECTURE: Nose injuries. Forensic significance. PRACTICALS: Instruments and procedures for treatment of nasal injuries	1 1
Week 7	LECTURE: Tumors of the nose, sinuses, and nasopharynx. Basic principles of sinonasal tumor treatment..	1 1

	PRACTICALS: Presentation of surgical treatment of sinonasal tumors. Monitoring of ENT-HN surgical procedures	
Week 8	LECTURE: Oral cavity, pharynx, tonsils: anatomy and physiology in brief. Inflammatory diseases of the pharynx and tonsils. Complications of tonsillitis. Laryngopharyngeal reflux. PRACTICALS: Oropharyngoscopy: examination of oral cavity and pharynx. Work at ENT polyclinic.	1 1
Week 9	LECTURE: Tonsil problem. International sore throat guidelines. Tumors of oral cavity and pharynx. PRACTICALS: Regions of the neck. Neck palpation. Work at ENT polyclinic.	1 1
Week 10	LECTURE:. Applied anatomy of the ear. Physiology of hearing and balance. Nystagmus. Inflammatory diseases of the ear.. PRACTICALS: Otoscopy. Presentation of otomicroscopy and ear endoscopy. Aural toilet. Work at ENT polyclinic.	1 1
Week 11	LECTURE: Hearing loss and deafness. Hearing aids. Peripheral vertigo. PRACTICALS: Types of tests used to evaluate hearing and balance. Audiology office. Office for examination of the vestibular system.	1 1
Week 12	LECTURE: Otogenic complications. Basics of surgical treatment of ear diseases. PRACTICALS: Presentation of features of an ENT-HN operating room. Monitoring of otosurgery and other ENT-HN surgical procedures	1 1
Week 13	LECTURE: Applied anatomy and physiology of the larynx. Congenital laryngeal malformations. Laryngeal injuries. PRACTICALS: Indirect laryngoscopy. ENT office for endoscopy – endoscopy of the larynx and hypopharynx. Work at ENT polyclinic..	1 1
Week 14	LECTURE: Stridor (types, differential diagnosis). Laryngitis. Epiglottitis. Traheotomy, coniotomy. Foreign body in the upper and lower respiratory tract. PRACTICALS:. Specific features of an ENT-HN operating room – equipment for a microlaryngocopy, rigid oesophagoscopy and trecheobronhoscopy. Work at ENT polyclinic.	1 1
Week 15	LECTURE:. Laryngeal tumors. Basic principles of laryngeal tumor treatment. PRACTICALS: Tracheal cannula. Caring for a patient with a tracheostomy. Work at ENT polyclinic	1 1
Week 17 - 20	Final exam –(retake)	

Subject code: SFSOM1103E	**Name of the subject: Oncology**		
Cycle: integrated	**Year: V**	**Semester: IX**	**Number of ECTS credits:** 2
Status: Obligatory		**Total number of hours: 30** **Lectures: 15** **Exercises: 10** **Seminars: 5**	
Participans in classes	**Teachers and associates selected for the field to which the subject belongs**		

Prerequisite for enrollment:	**All students enrolled in the fifth year of study**
Aim (aims) of the subject:	Students should: They acquire basic knowledge about the process of diagnosis, treatment, monitoring and research of malignant diseases, as well as being able to recognize risk factors that can influence the development of the disease.
Thematic units: *(if necessary, the performance plan per week is determined taking into account the specifics of the organizational units)*	Thematic units are formed with the aim of the student gaining an idea of: - epidemiology of malignant diseases - the biological basis of cancer - cytological and pathological diagnosis of tumors - laboratory diagnostics in oncology - treatment methods in oncology - malignant tumors of the head and neck - malignant breast tumors - malignant tumors of the digestive system - malignant tumors of the urinary system -malignant tumors of the male and female reproductive system -malignant tumors of the skin -malignant tumors of soft tissues and bones - malignant tumors of the central nervous system - tumors of glands with internal excretion - palliative care in oncology - psychological psychotherapeutic approach to the oncology patient.
Learning outcomes:	The student will be able to: - state, describe and explain the biology, etiology and epidemiology of malignant tumors with an emphasis on tumors of the orofacial area - explain and classify malignant tumors according to stages - recognize the symptoms of a malignant tumor with an emphasis on tumors of the orofacial area - describe, analyze, connect, select, differentiate and discuss the forms of specific oncological treatment and compare the similarities and differences of certain forms of specific oncological treatment (cytostatic therapy, radiotherapy, hormonal therapy, immunotherapy, other forms [gene therapy, photodynamic therapy, hyperthermia, antiangiogenic therapy , antimetastatic therapy]). -give an example for therapeutic options for an individual patient - list and discuss the unwanted consequences of specific oncological treatment - critically assess teaching topics and materials, and participate in argumentative discussions and express opinions and views on this topic.
Teaching methods:	Classes are conducted in the form of: -lectures - exercises - groups of 6-8 students - seminars Teaching Methods: Interactive, theoretical and practical teaching

Methods of checking knowledge with a grade structure:	The students knowledge will be tested continuously throughout the semester and at the final exam. All parts of the exam will be covered by evaluation. Continuous knowledge testing includes partial exams 1 and 2 in the 7th and 15th week of classes, and a practical exam that is taken at the end of the semester. It is considered that the student has passed the partial exam if he has achieved the minimum number of points for passing (55 points out of 100 points). Unpassed parts of the exam will be evaluated on the final exam. A student who passes partial 1 and 2 is required to sit and pass the practical part of the exam in order to gain the right to enter the grade. Attendance and activity in class 5 points, partial exam 1 - 40 points, partial exam 2 - 40 points, practical part of the exam 15 points. The final grade is formed according to the points scale: 10(A)- exceptional success, without errors or with minor errors, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8(C) – average, with noticeable errors, carries 75-84 points 7(D)- generally good, but with significant shortcomings, carries 65-74 points. 6(E)- satisfies the minimum criteria, carries 55-64 points. 5(F)- does not meet the minimum criteria, less than 55 points
Literature:	Compulsory: Z. Kusić et al." Oncology for students of dental medicine" textbook, Zagreb, Medicinska naklada, 2013 E Vrdoljak, Z Krajina, M Šamija, Z Kusić, M Petković, D Gugić. Clinical oncology. Medicinska naklada, Zagreb 2013. Additional: -Halperin EC, Brady LW, Wazer DE, Perez CA, editors. Perez and Brady's Principles and Practice of Radiation Oncology. 6th ed. Philadelphia (PA): Lippincott, Williams& Wilkins; 2013. - DeVita VT, Lawrence TS, Rosenberg SA, editors. DeVita, Hellman, and Rosenberg's Cancer: Principles & Practice of Oncology. 9th ed. Philadelphia (PA): Lippincott, Williams & Wilkins; 2012.

Item code: SFSOS5101	**Course Title: Clinical orthodontics**		
Cycle: Integrated	**Year: V**	**Semester: X**	**Number of ECTS credits: 4**
Status: Obligatory		**Total number of hours: 60** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 2 (30)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		

Prerequisite for enrollment:	All students enrolled in the 5th year of study
Aim (objectives) of the course:	-Define, describe and take the patient's orthodontic anamnesis, define, describe and perform the patient's diagnostic protocol -Introduce students to the indices for determining the need for orthodontic therapy, and the classification of orthodontic anomalies -Introduce students to the ways of occurrence and development of orthodontic anomalies, their characteristics and possibilities of orthodontic therapy. -Present students the role of orthodontics in multidisciplinary treatment of patients.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units were formed with the aim that the student learns the basic procedures of orthodontic diagnosis and therapy. The teaching plan is given by the week in the attachment.
Learning outcomes:	Knowledge: students will be able to do a complete orthodontic examination of the patient Skills: Students will be able to recognize malocclusion and determine the indication for orthodontic therapy. Competences: Students will be able to apply theoretical knowledge in order to timely identify orthodontic anomalies and refer the patient to an orthodontist.
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure[7]:	Students will take a partial exam, a practical exam and a final exam, and will be continuously evaluated during the semester while working on the exercises. The partial exam is conducted during the semester, in writing form in the 8th week and carries 20 points. By continuous evaluation of the work on the exercises, the student can win a maximum of 10 points. The practical exam implies an assessment of acquired skills, it is taken in the 14th week of the semester and carries a maximum of 20 points. The final oral exam carries a total of 50 points. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature[8]:	Required: 1. Nakaš E, Tiro A, Džemidžić V, Redžepagić - Vražalica L, Ajanović M.

[7] The structure of points and point criteria for each subject is determined by the council of the organizational unit before the beginning of the academic year in which the subject is taught following Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

[8] The Senate of the higher education institution as an institution or the council of the organizational unit of the higher education institution as a public institution determines mandatory and recommended textbooks and manuals, as well as other recommended literature based on which it prepares and takes the exam as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton

	"Osnovi ortodontske dijagnostike ", Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu, 2014. 2. Redžepagić – Vražalica L, Nakaš E, Tiro A, Džemidžić V, Jelešković A, Bajrić E. "Ortodontske nepravilnosti", Sarajevo : Univerzitet u Sarajevu – Stomatološki fakultet sa stomatološki kliničkim centrom, 2024. 3. Tiro A, Nkaš E, Džemidžić V, Redžepagić – Vražalica L, Jelešković A. "Kompleksne ortodontske nepravilnosti", Sarajevo: Stomatolški fakultet s aklinikama Univerziteta u Sarajevu, 2020. 4. Marković N , Rakanović –Todić m , Burnazović – Ristić L, Arslanagić A, Tiro A, Džemidžić V. "Oralno zdravlje trudnica i dojenčadi – specifičnosti stomatološkog tretmana", Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu, 2021 5. Marković M. Ortodoncija. Ortodontska sekcija Srbije, Beograd Supplementary: Proffit WR, Fields HW, Sarver DM. Contemporery orthodontics, 4th edition. St. Louis: Mosby; 2006

Teaching plan Clinical orthodontics

Week	Course form and content	Number of hours
Week 1.	Lecture: Introductory lectures Practical exercises: Introductory exercises	2 2
Week 2.	Lecture: First orthodontic examination – diagnostic protocol (orthodontic anamnesis, clinical orthodontic examination of the patient, impressions, intraoral scanning, registration of intermaxillary relations, radiographs, photographs) Practical exercises: They follow the lectures with their teaching content	2 2
Week 3.	Lecture: Classification of orthodontic anomalies; Assessment of the need for orthodontic treatment (indices of orthodontic treatment need) Practical exercises: They follow the lectures with their teaching content	2 2
Week 4.	Lecture: Irregularities of individual teeth Practical exercises: They follow the lectures with their teaching content	2 2
Week 5.	Lecture: Irregularities of the dental arches Practical exercises: They follow the lectures with their teaching content	2 2
Week 6.	Lecture: Class I malocclusion Practical exercises: They follow the lectures with their teaching content	2 2
Week 7.	Lecture: Class II malocclusion (II/1) Practical exercises: They follow the lectures with their teaching content	2 2
Week 8.	Lecture: Class II malocclusion (II/2) Practical exercises: They follow the lectures with their teaching content	2 2
Week 9.	Lecture: Class III malocclusion (pseudo, dentoalveolar) Practical exercises: They follow the lectures with their teaching content	2 2
Week 10.	Lecture: Class III malocclusion (skeletal) Practical exercises: They follow the lectures with their teaching content	2 2
Week 11.	Lecture: Transverse malocclusion (crossbite) Practical exercises: They follow the lectures with their teaching content	2 2

Week 12.	Lecture: Vertical malocclusion (open bite, deep bite) Practical exercises: They follow the lectures with their teaching content	2 2
Week 13.	Lecture: Congenital anomalies – cleft lip and palate, craniofacial syndromes Practical exercises: They follow the lectures with their teaching content	2 2
Week 14.	Lecture: Multidisciplinary treatment (adult orthodontics; periodontally compromised patients, pre-prosthetic orthodontic therapy, pre-surgical orthodontic therapy, impactions) Practical exercises: They follow the lectures with their teaching content	2 2
Week 15.	Lecture: Recapitulation Practical exercises: They follow the lectures with their teaching content Practical exam	2 2
Week 17.	Final exam	
Week 19.		

Item code: SFSIS5091E	**Course Title: Radiology in Restorative dentistry and Endodontics**		
Cycle: integrated	**Year: V**	**Semester: IX**	**Number of ECTS credits:** 2
Status: elective		**Total number of hours: 30** **Lectures** 15 **Practical** 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs**		
Prerequisite for enrollment:	All students enrolled in the 5th year of study		
Aim (objectives) of the course:	The aim of the course is to provide students with theoretical and practical basics of dental radiology as a diagnostic method, the method of performing certain radiological examinations, and the interpretation of dental radiographs depending on their type.		
Thematic units:	1. Dental radiographs performing techniques 2. Interpretation of radiographs depending on their type 3. Radiological differential diagnosis		
Learning outcomes:	After completing the ninth semester of the subject Radiology in Restorative Dentistry and Endodontics, students will be able to: - Describe different radiological clinical examinations, - Independently perform various radiological examinations. - Explain the origin of radiological artifacts, and describe ways to prevent their occurrence, - Independently interpret dental radiographs, with special reference to the condition of caries, restoration, supporting tissues, as well as other bone lesions of radiological significance.		
Teaching methods:	- Classes will be conducted through: - interactive lectures, - practical, - consultations.		

Assessment methods with assessment structure:	The exam consists of a partial exam during the semester and a final exam, which are taken in the written form. Each exam carries 50 points. A partial exam is considered passed if the student has achieved a minimum of 28 points. The final exam is considered passed if the student has passed 55% of the material. The final grade is formed by adding up the points achieved through the partial and final exam, as follows: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Iannucci JM, Howerton LJ. Dental radiography: principles and techniques. 5th ed. St. Louis, Missouri: Elsevier/Saunders; 2016. Additional:
	1. Whaites E. Essentials of Dental Radiography and Radiology. 3rd ed. Elsevier Science Limited; 2003. 2. Pramod JR. Textbook of Dental Radiology. 2nd ed. New Delhi: Jaypee Brothers Medical Publishers; 2011.

Course syllabus Radiology in Restorative Dentistry and Endodontics

Week	Teaching and learning methods	Number of hours
Week 1.	1. Lecture: Introduction to dental radiography, the importance of radiology in dentistry, short history, development of digital techniques, definition of basic terms in radiology, nomenclature in dental radiology. 1. Practical: Introductory class (introduction to the content of the course, the way of teaching and exams, and literature	1 1
Week 2.	2. Lecture: Fundamentals of radiation physics, equipment and radiation protection 2. Practical (X-ray cabinet): Radiation protection of staff and patients, organization of cabinet work, prevention of cross-infection.	1 1
Week 3.	3. Lecture: Dental radiography, retro-alveolar imaging techniques 3. Practical (X-ray cabinet): Conventional and digital dental radiology	1 1
Week 4.	4. Lecture: Dental radiography, techniques of performing bite-wing and occlusal radiography 4. Practical (X-ray cabinet): Techniques of performing standard retro-alveolar radiography, special retro-alveolar imaging techniques	1 1
Week 5.	5. Lecture: Dental radiography, panoramic imaging techniques 5. Practical (X-ray cabinet): Techniques of performing standard retro-alveolar radiography, special retro-alveolar imaging techniques	1 1

Week 6.	6. Lecture: CBCT in restorative dentistry and endodontics 6. Practical (X-ray cabinet): Techniques for performing family recordings with special emphasis on increasing the technical correctness and accuracy of the recording	1 1
Week 7.	7. Partial exam	1
Week 8.	8. Lecture: Anatomical structures visible on radiographs, anatomical X-ray luminosity and darkness 8. Practical: Technical correctness of the image, artifacts and prevention of their occurrence	1 1
Week 9.	9. Lecture: Interpretation of X-rays - caries and assessment of the quality of restoration, 9. Practical (X-ray cabinet): CBCT imaging techniques, increasing accuracy and reducing artifacts	1 1
Week 10.	10. Lecture: Interpretation of X-rays - Conditions of the supporting apparatus of teeth and periapical tissues, 10. Practical: Interpretation of X-rays - caries and assessment of the quality of restoration.	1 1
Week 11.	11. Lecture: Recognition of developmental anomalies	1

	11. Practical: Interpretation of X-rays-Conditions of the supporting apparatus of teeth and periapical tissues.	1
Week 12.	12. Lecture: Radiological differential diagnosis, lesion description, lesion recognition by density. 12. Practical: Interpretation of panoramic radiographs.	1 1
Week 13.	13. Lecture: Bone lesions of radiological significance 13. Practical: Interpretation of CBCT.	1 1
Week 14.	14. Lecture: Tooth and facial skeleton trauma 14. Practical: Interpretation of X-rays - individual treatment plan	1 1
Week 15.	15. Lecture: Interactive recapitulation of materials 15. Practical: Interpretation of X-rays - individual treatment plan	1 1
Week 17.	Final exam.	
Week 19.	Remedial.	

Item code:SFSIS0906E	**Course Title: DENTAL CARE OF PERSONS WITH DISABILITIES**		
Cycle:integrated	**Year: V**	**Semester: IX**	**Number of ECTS credits:** 2
Status: elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 15 **Exercises** 30	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]
Prerequisite for enrollment:	All students enrolled in the 5th year of study
Aim (objectives) of the course:	Acquire basic definitions and concepts regarding individuals diseases of persons with difficulties, to identify the specifics of oral pathology of the most common conditions and diseases of persons with difficulties Introduce the student to the specifics of individual diseases and how to provide appropriate dental care Identify the specifics of work under local and general anesthesia
Thematic units:(*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units will enable the student to master the planned goals in a way to get acquainted with the most common diseases of people with disabilities, diagnostic and therapeutic options in the provision of dental care, which is described in detail in the curriculum as a separate document.
Learning outcomes:	The student will successfully describe the clinical picture of individual diseases and apply a diagnostic protocol for each patient. They will evaluate the possibilities related to dental therapy, the possibility of applying local and general anesthesia for each patient with difficulties
Teaching methods:	Interactive lectures Practical exercises

Assessment methods with assessment structure:	Student can earn points in the following way: activity in lectures - 5 points activity on exercises – 5 points knowledge test via test - in the 8th week 40 Final exam 50 points The maximum number of points is 100. The finalgrade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, 95-100 points. 9 (B) - above average, with some errors, 85-94 points 8 (C) - average, with noticeable errors, 75-84 points 7 (D) -generally good, but with significant shortcomings, 65-74 points. 6 (E) -satisfies the minimum criteria, 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Zukanović A, Gržić R.Dental treatment of medially compromised patients., 2012. Supplementary: 1. Neville BW, Damm DD, Allen CM, Bouquot JE. Oral and maxillofacial pathology. 3rd edition Saunders Elsevier 2009 2. Lazarevski P, Škrinjarić I, Vranić A. Psychology for dentists Slap, 2005.

Implementation plan of the course Dental care for people with disabilities

Week	Teaching and learning methods	Hours
Week 1.	Lecture: Aim and importance of the course. Basic concepts and definition of people with disabilities, psychosocial aspects of dental health care, health insurance of people with disabilities. Models of dental care for people with disabilities in different countries around the world. Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 2.	Lecture: Terms and definitions of certain difficulties: physical disability, visual and hearing impairments, multiple impairments, Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 3.	Lecture: Terms and definition of certain disorders: autism, Down syndrome, Treacher-Collins syndrome, Crouzon syndrome, Gorlin-Goltz syndrome, mental retardation, Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 4.	Lecture: Person with disabilities, parent / guardian / caregiver and dentist - opportunities and importance in maintaining oral health Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 5.	Lecture: Preventive aspect of dental care for people with disabilities. Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 6.	Lecture: Specifics of certain diseases of people with disabilities and oral health Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 7.	Lecture: Dental care for people with disabilities and diagnostic protocol (first examination, diagnosis, therapy, premedication).	1

	Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	2
Week 8.	Lecture: Possibilities of providing dental care under local anesthesia Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 9.	Lecture: Sedation and general anesthesia - dental care for people with disabilities Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 10.	Lecture: Oral surgical interventions in persons with difficulties in local anesthesia with reference to the aspect of premedication, patient preparation and complications Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 11.	Lecture: Oral surgical interventions in persons with difficulties in general anesthesia with reference to the aspect of premedication, patient preparation and complications. Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 12.	Lecture: The importance of a multidisciplinary approach to the treatment of people with special difficulties. Dentist as a member of a multidisciplinary team. Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 13.	Lecture: Dental care for the elderly, Parkinson's, Alzheimer's disease. Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 14.	Lecture: Cerebral paralysis - oral health and dental care. Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 15.	Lecture: Oral health and dental care for people with myasthenia gravis and muscular dystrophy. Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 2
Week 17.	Final exam	
Week 19.	Corrective exam	

Item code: SFSIS0907E	**Course Title: EPIDEMIOLOGY OF DISEASES OF THE PERIODONTIUM**		
Cycle: integrated	**Year: V**	**Semester: IX**	**ECTS credits: 2**
Status: elective		**Total hours: 30** **Lectures** 15 **Practice** 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs**		
Prerequisite for enrollment:	All students enrolled in the 5th year of study		
Aim (objectives) of the course:	-The aim of the course is to educate students about the epidemiology of periodontal disease, the factors involved in the occurrence and development of periodontal disease		

	-Teach students about the methods of applying the index in periodontology, means and periodontal instruments, as well as the basic principles of initial periodontal therapy.
Thematic units: *(If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)*	1. Epidemiology of periodontal diseases 2. Teeth plaque 3. Means and equipment for plaque detection 4. Plaque indexes 5. Means and methods of maintaining oral hygiene 6. Anatomically-morphological characteristics of the gingiva 7. Gingival indexes 8. Gingival indexes 9. Periodontal pockets 10. Periodontal pockets 11. Periodontal indexes 12. Summary of indexes in periodontology 13. The aims of periodontal therapy 14. Basic principles of initial periodontal therapy 15. Basic principles of initial periodontal therapy
Learning outcomes:	Through the subject "Epidemiology of periodontal disease" students will know: - basic anatomical and morphological characteristics of periodontitis, - indices in periodontology and their reception, - the importance of periodontal indices for assessing the need for periodontal therapy.
Teaching methods:	The course is held: 1. lecture ex-cathedra for all the students 2. clinical exercises (practice)
Assessment methods with assessment structure:	One of the forms of activity is the lecture and practical exercise attendance. The assessment of theoretical knowledge from the completed semester will be conducted in the written form – by means of a test. The total grade consists of: - regular lecture attendance - 5 points, - practice attendance – 5 points - active work in practice – 35 points, (in week 10, a colloquium from attended topics - 15 points, demonstration of the application of periodontal indexes, individual work with a patient, seminar or case report – 20 points) - the final exam by means of a test – 55 points. The assessment and grading of students' knowledge will be conducted according to the following system: 10 (A) - exceptional results without mistakes or with insignificant mistakes,a total of 95-100 points; 9 (B) - above average, with few mistakes, a total of 85-94 points; 8 (C) - average, with noticeable mistakes, a total of 75-84 points; 7 (D) - generally good, but with significant shortcomings, a total of 65-74 points; 6 (E) - fulfills minimum criteria, a total of 55-64 points; 5 (F) - does not fulfill minimum criteria, less than 55 points.
Literature:	Obligatory:

	1. Berislav Topić, Periodontology, biology, immunopathogenesis, practice. Sarajevo -Zagreb, 2005. Supplementary: 2. Jan Lindhe, Clinical Periodontology and dental implantology. According to the Fourth English edition (translation in the Croatian language). Zagreb 2004. 3. Đajic Dragoljub: Atlas- Periodontology, Belgrade 2001.

Implementation plan for the course: Epidemiology of diseases of the periodontium

Week	Form of teaching and curriculum	Number of hours
Week 1.	Lecture: Epidemiology of periodontal diseases Practice: Basic principles of periodontal examination	1 1
Week 2.	Lecture: Teeth plaque Practice: Basic principles of periodontal examination	1 1
Week 3.	Lecture: Means and equipment for plaque detection Practice: Basic principles of periodontal examination	1 1
Week 4.	Practice: Demonstration of the application of plaque indexes Lecture: Means and methods of maintaining oral hygiene	1 1
Week 5.	Lecture: Plaque indexes Practice: Individual work	1 1
Week 6.	Lecture: Anatomically-morphological characteristics of the gingiva Practice: Individual work	1 1
Week 7.	Lecture: Gingival indexes Practice: Demonstration of the application of gingival indexes	1 1
Week 8.	Lecture: Gingival indexes Practice: Individual work	1 1
Week 9.	Lecture: Periodontal pockets Practice: Individual work	1 1
Week 10.	Lecture: Periodontal pockets Student assessment by means of a colloquium	1 1
Week 11.	Lecture: Periodontal indexes Practice: Individual work	1 1
Week 12.	Lecture: Summary of indexes in periodontology Practice: Individual work	1 1
Week 13.	Lecture: The aims of periodontal therapy Practice: Individual work	1 1
Week 14.	Lecture: Basic principles of initial periodontal therapy Practice: Individual work	1 1
Week 15.	Lecture: Basic principles of initial periodontal therapy Practice: Demonstration of the application of periodontal indexes – individual work with a patient	1 1
Week 17.	Final exam (test)	
Week 19.	Makeup exam date for students who have not passed the final exam	

Item code: SFSIS0908E	Course Title: CLINICAL GNATHOLOGY		
Level: Integrated study	**Year: V**	**Semester: IX**	**Number of ECTS credits: 2**
Status: Elective		**Total number of hours: 45** Lecture 15 Exercise 30	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** **Department of Prosthodontics with Dental Implantology**		
Prerequisite for enrollment:	Prerequisites for course attendance are regulated by the Rules of Studies for the Integrated Study Program of the first and second cycles in establishments of higher education at Sarajevo University.		
Aim (objectives) of the course:	- to teach basic theoretical and practical knowledge of clinical gnathology - to enable the student to perform the function analysis of orofacial complex and planning of occlusal therapy disorder, based on the basic principles of achieving and maintenance occlusal harmony - to acquire knowledge of modern standards of normal, functional, healthy and compensated stomatognatic system - acquire understandings about the complex relationships between stomatognatic system's components during rest and during the function, which are applicable to all dental procedures.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Temporomandibular disorders; definition and diagnostic categories, medical history and clinical examination of the orofacial complex 2. Evaluation of occlusion complex status 3. Analysis of maxillomandibular relationships – registration of mandibular reference positions 4. Analysis of the contact relationships of teeth in the centric position of the mandible 5. Analysis of the occlusal contacts in the intercuspal position (maximum intercuspation) of the mandible 6. Analysis of the occlusal contacts in eccentric mandibular positions 7. Modalities, objectives, indications and plan of the occlusion therapy; Selection of the reference (therapeutic) position of the mandible during occlusal therapy 8. Reversible occlusal therapy 9. Determinant of occlusal morphology during irreversible occlusal therapy 10. Selection of the occlusion model during irreversible occlusal therapy 11. Model of bilateral balanced occlusion 12. Model of mutually protected occlusion 13. Irreversible occlusal therapy - selective grinding 14. Irreversible occlusal therapy - guidelines for prosthetic therapy 15. Possibilities and limits of Helkimo index for temporomandibular disorder; The purpose of RDC/TMD protocol in diagnosing of temporomandibular disorders (TMD)		
Learning outcomes:	Knowledge:		

	- method of evaluating the condition of occlusal complex and temporomandibular joints - general attitudes in occlusal therapy - basic principles of reversible and irreversible therapy of temporomandibular dysfunctions Skills: - to obtain anamnestic data and clinical examination of patients with temporomandibular disorders - evaluation of occlusion and identification of occlusal interferences - radiographic evaluation of temporomandibular joint - techniques of registering mandibular reference positions - fabrication of the occlusal stabilization appliance - selective grinding Competenciens: - to master diagnosis of temporomandibular disorders - therapy of temporomandibular disorders using occlusal appliance - planning reconstructive therapy in accordance with applicable concepts of occlusion
Teaching methods:	- ex catedra lectures for all students - practical exercises
Assessment methods with assessment structure:	Acquired knowledge and skills are tested continually during the semester. In the structure of the total number of points the student can achieve for activities and knowledge tests: - activity during exercises - maximum 10 points, minimum 5.5 points - partial exam in the 8th week of the semester - maximum 40 points, minimum 22 points - final exam - maximum 50 points, minimum 27.5 points. The partial exam is taken in the form of a test and can be awarded points only if the student achieves at least 55% of correct answers in exam. All the exam questions need not be awarded the equal number of points. The decision on the method of scoring questions from the test is made by subject teachers before the test is administered. The final exam consists of a practical test of knowledge and an oral test of theoretical knowledge. The student takes the practical part of the exam in the 15th week of classes as part of clinical exercises. The condition for taking the oral test of theoretical knowledge of the final exam is passing the practical part of the exam. The passed practical part of the exam is valid for one academic year. A student who did not pass the partial knowledge test, takes the final exam integrally. The passing score level on the exam is 55%. In accordance with the above, the grade scale is as follows:

	m) 10(A) - exceptional success without errors or with insignificant errors - 95-100 points n) 9(B) - above average with few errors- 85-94 points; o) 8 (C) - average with noticeable errors - 75 -84 points; p) 7(D) - generally good but with significant errors- 65-74 points; q) 6(E) - meets the minimum criteria - 55-64 points; r) 5 (F, FX) – does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Ajanović M. i sar. Osnovi gnatologije. Stomatološki fakultet s klinikama Univerziteta u Sarajevu. Sarajevo, 2015. 2. Okeson JP. Management of Temporomandibular Disorders and Occlusion. 8th Edition Mosby Elsevier, 2019. Recommended: 1. Gray RJM, Al-Ani Z. Temporomandibular Disorders: A Problem-Based Approach. Blackwell Publishing Ltd. 2011.

CLINICAL GNATHOLOGY COURSE SCHEDULE

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lecture, exercises)
Week 1.	Lecture: Temporomandibular disorders; definition and diagnostic categories Medical history and clinical examination of the orofacial complex: • medical history • examination of the head, face and jaw • examination of TMJ: - measurement of jaw motion (range and uniformity) - palpation - auscultation - radiographic evaluation of TMJ • examination of the orofacial muscles Exercises: - Students are to get familiarized with medical history form for patients with orofacial pain and temporomandibular disorders - practical exercises – filling a medical history form	1 2
Week 2.	Lecture: Evaluation of occlusion complex status: • clinical and radiographic evaluation of the health status of the remaining teeth • atipical tooth wear-abrasion, erosion, attrition • examination of the periodontal status • tooth position analysis • analysis of the position and continuity of the occlusal plane Exercises: Practical exercises - functional analysis of the orofacial complex	1 2

	- Clinical examination and filling medical history form –dental status, periodontal status, tooth abrasion.	
Week 3.	Lecture: Analysis of maxillomandibular relationships – registration of mandibular reference positions: • analysis of the vertical dimension of occlusion - determining the position of physiologic rest position - determining freeway space • determining the centric relation - patient preparation, - methods Exercises: Practical exercises - functional analysis of the orofacial complex - determining the position of physiologic rest position and freeway space - determining the centric relation	1 2
Week 4.	Lecture: Analysis of the contact relationships of teeth in the centric position: - centric relation and centric relation to maximum intercuspation position slide - occlusal markers - identification of occlusal contacts in centric relation - identification centric relation to maximum intercuspation position slide Exercises: Practical exercises - functional analysis of the orofacial complex - work with occlusal markers - identification of occlusal contacts in centric position - identification centric relation to maximum intercuspation position slide (in frontal and sagittal plane) - entering data into form	1 2
Week 5.	Lecture: Analysis of the occlusal contacts in the intercuspal position (maximum intercuspation): • criteria for occlusal contacts in the intercuspal position • stability of the intercuspal position • relationship of anterior teeth in the intercuspal position • misalignment between the middle of two dental arches • number and location occlusal contacts in the intercuspal position Exercises: Practical exercises - functional analysis of the orofacial complex - determination of overbite - determination of overjet	1 2

	- Angle classification of occlusion - determination of anterior open bite, cross bite - identification of number and location occlusal contacts in the intercuspal position - entering data into form	
Week 6.	Lecture: Analysis of the occlusal contacts in eccentric mandibular positions • analysis of mandible guidance • determination of occlusal interferences during protrusive mandibular movements • determination of occlusal interferences during lateral mandibular movements • occlusion analysis in the articulator Exercises: Practical exercises - functional analysis of the orofacial complex - analysis of mandible guidance - identification of occlusal interferences during protrusive and lateral mandibular movements - entering data into form	1 2
Week 7.	Lecture: • Modalities, objectives, indications and plan of the occlusion therapy • Selection of the reference (therapeutic) position of the mandible during occlusal therapy Exercises: Practical exercises - functional analysis of the orofacial complex - Mandibular movement analysis: opening - comfortable (mm), opening - maximum (mm), deviation, deflection (mm), left mandibular laterotrusion- maximum (mm), right mandibular laterotrusion- maximum - entering data into form	1 2
Week 8.	Lecture: Reversible occlusal therapy: • Splints and bite plane • conventional and digital technology of splint manufacturing Exercises: Practical exercises - functional analysis of the orofacial complex - Examination of TMJ (type and intensity of sound, movement in which sound occurs, time and frequency of sound, pain on palpation, movement in which pain is palpated, pain during palpation of retrodiscal tissue) - entering data into form	1 2

Week 9.	Lecture: Determinant of occlusal morphology during irreversible occlusal therapy: • Occlusal load distribution • Determinants of occlusal morphology - Vertical determinants of occlusal morphology - Horizontal determinant of occlusal morphology Exercises: Practical exercises - functional analysis of the orofacial complex - Examination of orofacial muscles (place of pain, intensity of pain, type of pain, movement in which pain occurs, pain at rest, muscle palpation technique) - entering data into form	1 2
Week 10.	Lecture: Selection of the occlusion model during irreversible occlusal therapy: Historical review Modern concept Exercises: Practical exercises - functional analysis of the orofacial complex - Examination of orofacial muscles (place of pain, intensity of pain, type of pain, movement in which pain occurs, pain at rest, muscle palpation technique) - entering data into form	1 2
Week 11.	Lecture: Model of bilateral balanced occlusion Exercises: - Video presentation- conventional technology of splint manufacturing	1 2
Week 12.	Lecture: Model of mutually protected occlusion Exercises: - Video presentation- digital technology of splint manufacturing - demonstrate intraoral scanning in dental practice - demonstrate the method of manufacturing a stabilization splint using milling technology and / or 3D printing in the laboratory	1 2
Week 13.	Lecture: Irreversible occlusal therapy -selective grinding: • evaluation of the efficiency of selective grinding • elimination of deflective contacts in the central position of the mandible • establishing optimal guidance of the mandible by selective grinding • material and instruments used during selective grinding Exercises: Video presentation- selective grinding	1 2

Week 14.	Lecture: Irreversible occlusal therapy - guidelines for prosthetic therapy: • indications • goals of occlusal therapy • selection of reference position of the mandible during irreversible occlusal therapy • optimal anterior guidance • establishing an appropriate working side guidance • establishing stable central contacts at optimal vertical dimension of occlusion • application of the model of bilateral balanced occlusion in prosthetic therapy Exercises: Special plan of occlusal therapy- -selection of reference position of the mandible and selection of occlusal concept for a particular case-presentation and case analysis	1 2
Week 15.	Lecture: • Possibilities and limits of Helkimo index for temporomandibular disorder • The purpose of RDC/TMD protocol in diagnosing of temporomandibular disorders (TMD) Exercises: RDC / TMD protocol	1 2

Item code: SFSIS5103	**Course Title: Interceptive Orthodontics**		
Cycle: Integrated	**Year: V**	**Semester: X**	**Number of ECTS credits: 4**
Status: Elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 5th year of study		
Aim (objectives) of the course:	The aim of the course is to educate students about preventive and interceptive measures in orthodontics, and the importance of early recognition and elimination of factors that affect the growth and development of the orofacial complex.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units were formed with the aim that the student learns the basic procedures of preventive and interceptive measures in orthodontics. The teaching plan is given by the week in the attachment.		

Learning outcomes:	Knowledge: Describe preventive and interceptive measures, describe interceptive devices. Skills: Student will be able to recognize deviations from normal growth and development of the orofacial complex; identify factors influencing the development of orthodontic anomalies; identify situations in which it is possible to apply measures of interceptive orthodontics. Competences: Student will be able to refer the patient to a specialist orthodontic examination; know how to apply preventive and interceptive orthodontic measures.
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure[9]:	Students will take a partial exam, practical exam and final exam and will be continuously evaluated while working on the exercises. The partial exam is conducted during the semester, in written form, in the 8th week and carries 30 points. By continuously evaluating the work on the exercises, along with the preparation of a seminar paper, the student can gain a maximum of 40 points. During the semester, based on the midterm exam and activity throughout the semester, the student can achieve a maximum of 70 points, thereby meeting the requirements to receive a grade of 7 without taking the final exam, except in cases where they wish to achieve a higher grade.The final exam is taken after the end of the semester in written form and carries a total of 30 points. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 54 points.
Literature[10]:	Required: 1. Nakaš E, Tiro A, Džemidžić V, Redžepagić – Vražalica L, Ajanović M. "Osnovi ortodontske dijagnostike", Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu, 2014. 2. Tiro A, Nkaš E, Džemidžić V, Redžepagić – Vražalica L, Jelešković A. "Kompleksne ortodontske nepravilnosti", Sarajevo: Stomatolški fakultet s aklinikama Univerziteta u Sarajevu, 2020. 3. Marković N , Rakanović –Todić m , Burnazović – Ristić L, Arslanagić A, Tiro A, Džemidžić V. "Oralno zdravlje trudnica i dojenčadi – specifičnosti stomatološkog tretmana", Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu, 2021 4. Redžepagić – Vražalica L, Nakaš E, Tiro A, Džemidžić V, Jelešković A, Bajrić E. "Ortodontske nepravilnosti", Sarajevo : Univerzitet u Sarajevu – Stomatološki fakultet sa stomatološki kliničkim centrom, 2024. 5. Proffit WR, Fields HW, Sarver DM. Contemporery orthodontics, 4th

[9] The structure of points and point criteria for each subject is determined by the council of the organizational unit before the beginning of the academic year in which the subject is taught following Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

[10] The Senate of the higher education institution as an institution or the council of the organizational unit of the higher education institution as a public institution determines mandatory and recommended textbooks and manuals, as well as other recommended literature based on which it prepares and takes the exam as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton

	edition. St. Louis: Mosby; 2006 Supplementary: 1. Marković M. Ortodoncija. Ortodontska sekcija Srbije, Beograd

Teaching plan Interceptive Orthodontics

Week	Course form and content	Number of hours
Week 1.	Lecture: Introduction – The concept of preventive and interceptive orthodontics Practical exercises: They follow the lectures with teaching content	2 1
Week 2.	Lecture: Child and adolescent psychology from the aspect of orthodontics; Patient motivation for orthodontic treatment Practical exercises: They follow the lectures with teaching content	2 1
Week 3.	Lecture: Prevention of orthodontic anomalies (prenatal and early childhood prevention) Practical exercises: They follow the lectures with teaching content	2 1
Week 4.	Lecture: Prevention of premature tooth loss Practical exercises: They follow the lectures with teaching content	2 1
Week 5.	Lecture: Prevention of bad habits Practical exercises: They follow the lectures with teaching content	2 1
Week 6.	Lecture: Interceptive orthodontics (space maintainers) Practical exercises: They follow the lectures with teaching content	2 1
Week 7.	Lecture: Possibilities of interceptive orthodontics in the treatment of parafunctions and dysfunctions Practical exercises: They follow the lectures with teaching content	2 1
Week 8.	Lecture: Possibilities of interceptive orthodontics in the treatment of functional anomalies (premature contact, anterior cross - bite, etc.) Practical exercises: They follow the lectures with teaching content	2 1
Week 9.	Lecture: Possibilities of interceptive orthodontics in the treatment of missing teeth (hypodontia, trauma, caries) Practical exercises: They follow the lectures with teaching content	2 1
Week 10.	Lecture: Myofunctional therapy Practical exercises: They follow the lectures with teaching content	2 1
Week 11.	Lecture: Early orthodontic treatment Practical exercises: They follow the lectures with teaching content	2 1
Week 12.	Lecture: Early treatment of Class II malocclusion Practical exercises: They follow the lectures with teaching content	2 1
Week 13.	Lecture: Early treatment of Class III malocclusion Practical exercises: They follow the lectures with teaching content	2 1
Week 14.	Lecture: Guided eruption of teeth and proper timing for referral to an orthodontist Practical exercises: They follow the lectures with teaching content	2 1
Week 15.	Lecture: Review of the material Practical exercises: They follow the lectures with teaching content	2 1
Week 17.	Final exam	

Item code: SFSIS1001E	**Course Title: Traumatic dental injuries in children and adolescents**		
Cycle: integrated	**Year: V**	**Semester: X**	**Number of ECTS credits:** 2
Status: elective		**Total number of hours: 30** Optionally develop the distribution of hours by type: **Lectures** 1 (15) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	Students enrolled in the 5th year of study		
Aim (objectives) of the course:	On successful completion of theoretical lectures and case studies provided in this module, students should be fully acquainted with diagnostic procedures and treatment modalities for acute traumatic injuries of primary and permanent teeth in children and adolescents.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Epidemiology and etiology of traumatic dental injuries in children and adolescents, predisposing factors. 2. Classification of dental injuries and consequences of dental trauma. Examination and diagnosis of dental injuries, treatment plan. 3.. Dental trauma in permanent and young permanent dentition. 4. Dental trauma in in primary dentition 5. Treatment priorities after dental trauma. Diagnosis of pulpal and periodontal healing complications after traumatic dental injuries. 6. Endodontic considerations in dental trauma. Surgical considerations in dental trauma. 7. Fractured crown reconstruction. Orthodontic considerations in dental trauma. Medico-legal aspect of dental trauma. 8. Prevention of dental injuries		
Learning outcomes:	Knowledge: Acquisition of knowledge about epidemiology, etiology and classification of traumatic dental injuries in children and adolescents. Acquisition of knowledge about healing, treatment options and priorities after traumatic dental injuries as well as consequences of dental trauma in children and adolescents. Skills: Practical application of gained knowledge regarding traumatic dental injuries in children and adolescents when conducting diagnostic protocol (anamnesis, examination, radiographic examination) and treatment planning. Preparation of lectures about prevention of dental trauma (for the parents and for the patients). Competences: Ability to implement an appropriate diagnostic procedure and develop an appropriate treatment plan for dental trauma in children primary and permanent dentition. Ability to counsel patients and their parents on prevention of dental and facial trauma.		
Teaching methods:	Lectures Practical exercises (case study/education lecture) Consultations		

Assessment methods with assessment structure:	After taking part in all lectures and hands-on training activities and upon completing the final exam, students can earn a maximum of 100 points. The final grade will include the following: 1. Points earned for student activity in practical exercises. Students can earn a maximum of 30 points. During practical exercises students will prepare one case study and one lecture. Student activity will be observed and assessed continuously. Each assignment carries 15 points. 2. Points earned for completed partial exam. Students can earn a maximum of 50 points per completed partial exam. Written partial exams are administered in the 8th week of the program, to assess the knowledge acquired by the student in the first 10 weeks of the program. The sitting of partial exam is not mandatory; a student may decide to instead sit a single cumulative final exam. 3. Final exam in which a student can earn a maximum of 20 points. Final exam is not mandatory if student acquire sufficient number of points during practical exercises and partial exam.
	The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: Andreasen JO and associates. Traumatske ozljede zubi. Naklada Slap, Jastrebarsko, 2008. Marković D and associates. Povrede zuba (vodič za svakodnevnu kliničku praksu). Stomatološki fakultet Beograd, 2016. Jurić H and associates. Dječija dentalna medicina. Naklada Slap, Zagreb, 2015 Additional: Cameron AC, Widmer RP. Handbook of Pediatric Dentistry (2003).

Teaching plan subject Traumatic dental injuries in children

Week	Lectures and practical exercises	Number of hours
Week 1.	Lecture: Introduction. Epidemiology and etiology of traumatic dental injuries in children and adolescents, predisposing factors.	2

Week 2.	Lecture: Classification of dental injuries and consequences of dental trauma. Examination and diagnosis of dental injuries, treatment plan.	2
Week 3.	Lecture: Prevention of dental injuries. Treatment priorities after dental trauma. Practical exercise: Prevention of traumatic dental injuries: Information for the public and for the patients about dental trauma.	2 3
Week 4.	Lecture: Injuries to the primary dentition. Consequences of dental trauma in primary dentition. Practical exercise: Prevention of traumatic dental injuries: Information for the public and for the patients about dental trauma	2 4
Week 5.	Lecture: Dental trauma in permanent and young permanent dentition: crown fractures without and with pulp exposure; root fractures and crown-root fractures; luxation injuries. Practical exercise: Clinical cases, diagnosis based on clinical documentation, treatment plan.	2 4
Week 6.	Lecture: Prevention of dental injuries. Treatment priorities after dental trauma. Practical exercise: Clinical cases, diagnosis based on clinical documentation, treatment plan.	2 4
Week 7.	Lecture: Endodontic considerations in dental trauma. Surgical considerations in dental trauma.	2
Week 8.	Lecture: Orthodontic considerations in dental trauma. Medico-legal aspect of dental trauma. Partial exam	1
Week 17.	Final exam I	
Week 19.	Final exam II	

Item code: SFSIS5104	**Course Title: TEMPOROMANDIBULAR DISORDERS**		
Cycle: Integrated study	**Year: V**	**Semester: X**	**Number of ECTS Credits: 2**
Status: Elective		**Total number of hours: 30** Optionally develop the distribution of hours by type: Lectures 15 Exercises 15	
Teaching participants	**Teachers and associates selected in the field to which the subject belongs / subject** **Department of Prosthodontics with Dental Implantology**		
Prerequisite for enrollment:	The requirements are regulated by the Study Rules for the Integrated study program of the first and second cycles at the Higher Education Institutions of the University of Sarajevo.		

Aim (objectives) of the course:	The aim of the course is to teach students basic theoretical, modern knowledge about the etiology, types of temporomandibular disorders, diagnosis and therapeutic possibilities of temporomandibular disorders.
Thematic units: *(If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)*	1. Temporomandibular disorders - epidemiology and etiology disorders 2. TMD - diagnostic categories 3. Disorders of masticatory muscles - myalgia 4. Temporomandibular joint disorders – condyl - disc complex disorders, arthralgia 5. Temporomandibular joint disorders - shape deviations, subluxation and luxation of the joint 6. Inflammatory disorders of the temporomandibular joint 7. Ankylosis, muscle contracture, congenital and developmental disorders 8. Clinical examination and additional diagnostic tests 9. Protocols in the diagnosis of temporomandibular disorders 10. Occlusal appliance therapy 11. Fabrication of the occlusal appliance by conventional method 12. Bruxism, diagnosis and therapy
	13. Fabrication of the occlusal appliance by digital method 14. Exercise, relaxation, physical therapy, pharmacotherapy 15. Occlusal balance and definitive occlusal therapy TMD
Learning outcomes:	Knowledge: - Describe the etiology and clinical features of muscular, intracapsular, inflammatory disorders and growth disorders - Describe bruxism, consequences and therapeutic possibilities - Explain diagnostic procedures and therapeutic options certain types of temporomandibular disorders Skills: - Determine the type of temporomandibular disorder based on clinical examination and radiological diagnostics - Identify the problem of bruxism - Distinguish differential diagnostic temporomandibular disorders from other disorders - Act preventively on the development of temporomandibular disorders Competences: - Make an occlusal appliance and perform selective grinding - Give instructions on physical therapy methods
Teaching methods:	- ex catedra lectures for all students and - practical exercises

Assessment methods with assessment structure:	Acquired knowledge and skills are tested continually during the semester. In the structure of the total number of points the student can achieve for activities and knowledge tests: - activity during exercises - maximum 10 points, minimum 5.5 points - partial exam in the 8th week of the semester - maximum 40 points, minimum 22 points - final exam - maximum 50 points, minimum 27.5 points. The partial exam is taken in the form of a test and can be awarded points only if the student achieves at least 55% of correct answers in exam. All the exam questions need not be awarded the equal number of points. The decision on the method of scoring questions from the test is made by subject teachers before the test is administered. The final exam consists of a practical test of knowledge and an oral test of theoretical knowledge. The student takes the practical part of the exam in the 15th week of classes as part of clinical exercises. The condition for taking the oral test of theoretical knowledge of the final exam is passing the practical part of the exam. The passed practical part of the exam is valid for one academic year. A student who did not pass the partial knowledge test, takes the final exam integrally. The passing score level on the exam is 55%. In accordance with the above the grade scale is as follows:
	g) 10(A)- exceptional success, without mistakes or with minor mistakes, carries - 95-100 points h) 9(B) - above average with few errors, carries - 85-94 points; i) 8 (C)- average with noticeable errors, carries - 75 -84 points; j) 7(D) – generally good but with significant errors, carries- 65-74 points; k) 6(E) – satisfies the minimum criteria, carries - 55-64 points; l) 5(F, FX) – does not meet the minimum criteria, less than 55 points.
Literature:	Obligatory: 1. Okeson PJ. Management of Temporomandibular Disorders and Occlusion. 6th Mosby,2006. 2. Edward F Wright: Manual of Temporomandibular disorders; Willey Blackwell third ed, 2014. Recommended**:** 3. Laskin DM, Greene CS, Hylander WL. Temporomandibular disorders, an evidence - based approach to diagnosis and Treatment. Quintessence Publishing Co. Inc. Chicago, 2006. 4. Bumann A, Lotzmann U. TMJ Disorders and Orofacial pain. The role of Dentistry in a Multidisciplinary Diagnostic Approach. Thieme Stuttgart, New York;2002. 5. Carlsson GE, Magnusson T. Management of temporomandibular disorders in the general dental practice. Quintessence Publishing Co, Inc; 1999.

COURSE SYLLABUS: TEMPOROMANDIBULAR DISORDERS

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lectures, exercises)
Week 1.	Lecture: Temporomandibular disorders - epidemiology and etiology Disorders. Exercises: Anamnesis and clinical examination - non-specific. Measurements of active mandibular movements, range of mouth opening, deviation, deflection, range of lateral movement and protrusion.	1 1
Week 2.	Lecture: TMD - diagnostic categories. Clinical signs and symptoms of temporomandibular disorders. TMD-related headaches. Exercises: Palpation of the temporomandibular joint - examination of pain and sounds in the joint.	1 1
Week 3.	Lecture: Disorders of masticatory muscles - myalgia, myofascial pain myospasm, myositis, fibromyalgia. Exercises: Palpation of muscles, isometric muscle tension, trigger points, functional manipulation.	1 1
Week 4.	Lecture: Temporomandibular joint disorders – arthralgia. Condye - disc complex disorders. Exercises: Clinical diagnosis of arthrogenic temporomandibular pain and diagnosis of arthrosis and discopathy of TMJ.	1 1
Week 5.	Lecture: Temporomandibular joint disorders - shape deviations, adhesions, adherence, subluxation and luxation of the joint. Exercises: Specific clinical examination - orthopedic tests of manual functional analysis.	1 1

Week 6.	Lecture: Inflammatory disorders of the temporomandibular joint - synovitis / capsulitis, retrodiscitis, arthritides - osteoarthritis, osteoarthrosis. Systemic arthritis - rheumatoid arthritis. Exercises: Analysis of occlusion, identification of occlusal interferences, laterotrusion, mediotrusion, tooth attrition, decreased vertical dimension of occlusion.	1 1
Week 7.	Lecture: Ankylosis, muscle contracture, congenital and developmental disorders - hypoplasia, condylar hyperplasia, muscle hypertrophy, neoplasms. Exercises: Analysis and interpretation of radiographic findings in diagnostics of temporomandibular disorder.	1 1
Week 8.	Lecture: Clinical examination and additional diagnostic tests. Differential diagnostics. Exercises: Guidelines in the diagnosis of temporomandibular disorders.	1 1
Week 9.	Lecture: Protocols in the diagnosis of temporomandibular disorders, DC / TMD. Exercises: Guidelines in the diagnosis of temporomandibular disorders.	1 1
Week 10.	Lecture: Occlusal appliance therapy, types, indications, mechanism actions and types of occlusal appliances. Exercises: Reversible occlusal therapy, making an occlusal splint	1 1
Week 11.	Lecture: Fabrication of the occlusal appliance by conventional method Exercises: Reversible occlusal therapy, making an occlusal splint	
Week 12.	Lecture: Bruxism, diagnosis and therapy Exercises: Reversible occlusal therapy, occlusal appliance fabrication - clinical making of Michigan splint.	
Week 13.	Lecture: Fabrication of the occlusal appliance by digital method. Exercises Reversible occlusal therapy, occlusal appliance fabrication - digital fabrication of stabilization appliance.	1 1
Week 14.	Lecture: Exercise, relaxation, physical therapy, pharmacotherapy. Exercises: Exercises in therapy, passive stretching of muscles, assisted stretching of muscle, resistance exercises, supportive therapy. Manual manipulation techniques. Treatment of spontaneous dislocation of the TMJ.	1 1
Week 15.	Lecture: Occlusal balance and definitive occlusal therapy of TMD. Exercises: Irreversible occlusal therapy.	1 1

SIXTH YEAR OF STUDY

Item code: SFSOS1101E	**Course Title: MAXILLOFACIAL SURGERY**		
Cycle: integrated	**Year: VI**	**Semester:XI**	**Number of ECTS credits:** 7
Status: obligatori		**Total number of hours: 75** Optionally develop the distribution of hours by type: **Lectures** 45 **Exercises** 30	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]
Prerequisite for enrollment:	All students enrolled in the 6 year of study
Aim (objectives) of the course:	Introducing students on etiology, clinical signs, diagnosis and treatment of diseases and injuries in the field of maxillofacial surgery. Obtaining basic knowledge about clinical manifestations and clinical recognition of certain diseases and injuries to the maxillofacial region, diagnosis and surgical and medicament therapy .
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Definition and basic concepts about the emergence of various inflammatory conditions of salivary glands (etiology, pathogenesis and therapy). Tumors of Salivary glands - etiology, pathogenesis and therapy. Congenital anomalies (bone deformities-disgnathias, lip and palate breaks), Traumatology in maxillofacial surgery - etiology, pathogenesis and therapy, Lower and upper jaw injuries (clinical image recognition, rtg diagnostics, conservative and surgical therapies), Zigomatic bone injuries (Clinical Image Recognition, Rtg Diagnostics, Conservative and Surgical Therapies) Orbital injuries (Clinical Image Recognition, Rtg Diagnostics, Conservative and Surgical Therapies), Injuries of intraorbital region (eye, eye muscles) and periorbital soft skin cover. (clinical image recognition, rtg diagnostics, conservative and surgical therapies), Injuries of the fronto-ethmoid complex.(clinical image recognition,rtg diagnostics, conservative and surgical therapies), Injuries of head and neck soft tissue in general, pathogenesis, rtg diagnostics, Skin and subcutaneous tissue injuries and the treatment method (primary and secondary treatment of surgical wounds, postoperative protocol of antimicrobial therapy and pain therapy), Skin and subcutaneous tissue injuries and the treatment method (primary and secondary treatment of surgical wounds, postoperative protocol of antimicrobial therapy and pain therapy), Cranial nerve injury- etiology, clinical presentation and therapy method, Reconstructive Surgery (Basic Principles and types of lobes). Aesthetic Surgery, Temporomandibular joint conditions-etiology, pathogenesis, RTG diagnostics and therapy methods, outpatient care surgery, Necessary laboratory analysis in outpatient
Learning outcomes:	At the end of classes, students must: Maintain basic clinical recognition and presentation of various forms of diseases and injuries of the maxillofacial region. Align algorithms in therapy (from the set clinical preconditions, adequate diagnosis, to adressing the patient to specialized clinics). Maintain basic knowledge about interventive ambulant maxillofacial surgery.
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	The student's success in the exam and other forms of knowledge assessment is evaluated by a system comparable to the ECTS system as follows: 10 (A) -extraordinary success without mistakes or with insignificant mistakes, it makes 95 to 100 points; 9 (B) – above the average, with some mistake, makes 85-94 points; 8 (C) - average, with noticeable mistakes, makes 75-84 points; 7 (D) - generally good but with significant deficiencies,makes 65-74;

	6 (E) - meets the minimum criteria, makes 55-64 points; 5 (F) – unsatisfying, not even the minimum criteria, less than 55 points.
Literature:	6. Literature: Obligatory: 1. Orthognathic Surgery - 2 Volume Set : Principles and Practice Hardback Saunders W.B. Jeffrey C. Posnick ,2014 Elsevier Health Sciences 2. Jatin Shah's Head and Neck Surgery and Oncology 4th edition, by Jatin P. Shah, Snehal G. Patel, and Bhuvanesh Singh2012.Publisher Elsevier 3. Atlas of Operative Maxillofacial Trauma Surgery: Primary Repair of Facial Injuries Michael Perry, Simon Holmes. Publisher: Springer; 2014 4. Fractures of the Facial Skeleton, 2nd Edition Michael Perry, Andrew Brown, Peter Banks.April 2015. Publisher: Wiley-Blackwell 5. Cleft Lip and Palate Management: A Comprehensive Atlas 1st Edition by George K. B. Sándor , David Genecov , Ricardo D. Bennun , Julia F. Harfin Wiley-Blackwell; 1 edition (December 21, 2015) Expanded: other literature by local and foreign authors in the field of maxillofacial surgery

Course syllabus Maxillofacial surgery

Week	Teaching and learning methods	Course load
Week 1.	Lecture: Definition and basic concepts about the emergence of various inflammatory conditions of salivary glands (etiology, pathogenesis and therapy). Practicals:	
Week 2.	Lecture: Tumors of Salivary glands - etiology, pathogenesis and therapy. Practicals:	
Week 3.	Lecture: Congenital anomalies (bone deformities-disgnathias, lip and palate breaks) Practicals:	
Week 4.	Lecture: Traumatology in maxillofacial surgery - etiology, pathogenesis and therapy Practicals:	
Week 5.	Lecture: Lower and upper jaw injuries (clinical image recognition, rtg diagnostics, conservative and surgical therapies) Practicals:	
Week 6.	Lecture: Zigomatic bone injuries (Clinical Image Recognition, Rtg Diagnostics, Conservative and Surgical Therapies) Practicals:	
Week 7.	Lecture: Orbital injuries (Clinical Image Recognition, Rtg Diagnostics, Conservative and Surgical Therapies) Practicals:	
Week 8.	Lecture Injuries of intraorbital region (eye, eye muscles) and periorbital soft skin cover. (clinical image recognition, rtg diagnostics, conservative and surgical therapies) Practicals:	
Week 9.	Lecture: Injuries of the fronto-ethmoid complex.(clinical image recognition,rtg diagnostics, conservative and surgical therapies) Practicals:	
Week 10.	Lecture: Injuries of head and neck soft tissue in general, pathogenesis, rtg diagnostics Practicals:	
Week 11.	Lectures: Skin and subcutaneous tissue injuries and the treatment method (primary and secondary treatment of surgical wounds, postoperative protocol of antimicrobial therapy and pain therapy)	

	Practicals:	
Week 12.	Lectures: Skin and subcutaneous tissue injuries and the treatment method (primary and secondary treatment of surgical wounds, postoperative protocol of antimicrobial therapy and pain therapy) Practials:	
Week 13.	Lecture: Cranial nerve injury- etiology, clinical presentation and therapy method. Practicals:	
Week 14.	Lecture: Reconstructive Surgery (Basic Principles and types of lobes). Aesthetic Surgery Practicals:	
Week 15.	Lecture: Temporomandibular joint conditions-etiology, pathogenesis, RTG diagnostics and therapy methods Practicals:	
Week 17.	Final exam, Corrective exam period.	

Item code: SFSOS1105	**Course Title: DENTAL IMPLANTOLOGY**		
Cycle: integrated study	**Year: VI**	**Semester: XI and XII**	**Number of ECTS credits: 8**
Status: Obligatory		**Total number of hours: 120 (60+60)** XI semester XII semester Lectures 30 Lectures 30 Exercises 30 Exercises 30	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** **Department of Prosthodontics with Dental Implantology**		
Prerequisite for enrollment:	The requirements are regulated by the Study Rules for the Integrated study program of the first and second cycles at the Higher Education Institutions of the University of Sarajevo. Passed exams from the previous years.		
Aim (objectives) of the course:	The aim of the course is to provide the student with knowledge in the field of implant therapy in accordance with professional and scientific developments in the field of modern dental science.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	The course consists of two modules: Module 1. (XI semester) and Module 2. (XII semester) Modul 1. 1. Anatomy consideration in implant dentistry. Anatomy of the maxilla. 2. Anatomy of the mandible. Dissemination of dental infection. 3. Clinical biomechanics in implant dentistry. 4. Bone physiology, metabolism and biomechanics. 5. Seminars for students- Discussion of previous lecture themes. 6. Evaluation of the patient for implant treatment . 7. Pre-implant prosthodontics consideration. 8. Seminars for students - Discussion of previous lecture themes. 9. Protocol of implant placement “STEP BY STEP” I PART Partial edentulism 10. Protocol of implant placement “STEP BY STEP” II PART Complete edentulism		

	11. Bone replacement before, during and after implant placement. Medical care of patients 12. Seminars for students - Discussion of previous lecture themes. 13. Prosthodontic treatment in patients with dental implants – I Part. 14. Prosthodontic treatment in patients with dental implants – II Part. 15. Recapitulation on previous themes. Modul 2. 1. Types of prosthetic restorations on dental implants with case report. 2. Patient profile, aesthetic profile, replacement profile. 3. Planning of implant prosthetic therapy with using of software, development of surgical guides with radiographic analysis. 4. Implantation time and loading protocols in dental implantology. 5. Implant impressions. 6. Intraoral digital impression in dental implant prosthetics. 7. Abutments types. 8. Seminars for students- Discussion of previous lecture themes. 9. Temporary prosthodontic replacement on implants, output profile. 10. Types of fixed prosthetic restoration on implants. 11. Types of removable prosthetic restoration on implants. 12. Occlusal concepts. 13. Patient follow-up and maintenance of replacement. 14. Prosthetic complications in fixed and removable restorations on Implants. 15. Seminars for students - Discussion of previous lecture themes.
Learning outcomes:	Module 1. XI semester Knowledge: - Anatomic basis of the maxilla and mandible from dental implantology aspect - Clinical biomechanics in implant dentistry - Osseointegration - Pre-implant prosthodontics consideration - Protocol of implant placement - Complications in Implantology Skills: - Make diagnostic procedures and treatment plan, analyze different images in view of assessing the implant placement - Implant placement in the maxilla and mandible - model - Set up the suture Competencies: - The student's ability to see all the stages that precede implantoprosthetic rehabilitation Module 2. XII semester Knowledge: - Types of impressions in implantology - Patient profile, esthetic profile, replacement profile - Implantation time and loading protocols in dental implantology - Types of prosthodontics restorations on implants (fixed and removable) - Prosthetic complications in fixed and removable restorations on

	implants Skills: - Take the impression on implants - Carry out all clinical testing phases of fixed and removable prosthetics restaurations on implants Competencies: - Independently perform all clinical phases of manufacturing fixed and removable prosthodontics restorations on implants
Teaching methods:	Teaching are conducted in the form of: - interactive lectures - practical exercise - seminars in the form of interactive learning
Assessment methods with assessment structure:	Acquired knowledge and skills are tested continuously during the semester. In the structure of the total number of points, the student can achieve for activities and knowledge tests: - activity - individual work with patients on clinical exercises - maximum 10 points, minimum 5.5 points - partial exam in the 15th week of classes of the first semester - maximum 40 points, minimum 22 points - final exam - maximum 50 points, minimum 27.5 points. The partial exam consists of a practical test of knowledge and an oral examination of theoretical knowledge. The student takes the practical part of the partial exam in the 15th week of the first semester as part of clinical exercises. The condition for taking the oral examination of theoretical knowledge of the partial exam is passing the practical part of the exam. The final exam consists of a practical test of knowledge and an oral examination of theoretical knowledge. The student takes the practical part of the final exam in the 15th week of the second semester as part of clinical exercises. The condition for taking the oral examination of theoretical knowledge of the final exam is passing the practical part of the exam. The passed practical part of the exam is valid for one academic year. A student who did not pass the partial knowledge test takes the integral practical and/or theoretical part of both semesters on the final exam. A student can score a maximum of 90 points, and a minimum of 49.5 points, on the final exam, which is taken integrally. The passing score level on the exam is 55%. In accordance with the above the grade scale is as follows: a) 10(A)- exceptional success without errors or with insignificant errors, carries - 95-100 points b) 9(B) - above average with few errors, carries - 85-94 points ; c) 8 (C)- average with noticeable errors, carries - 75 -84 points; d) 7(D) – generally good but with significant errors, carries -

	65-74 points; e) 6(E) – meets the minimum criteria, carries - 55-64 points; f) 5(F,FX) – does not meet the minimum criteria, less than 55 points.
Literature:	Obligatory: 1. Carl E. Misch. Contemporary Implant Dentistry. Third edition. Missouri: Mosby Elsevier; 2007. 2. Wolfart S. Implant Prosthodontics. A Patient-Oriented Strategy. Quintessenz Verlags – GmbH, Berlin 2014. 3. Lang NP, Lindhe J. Periodontology and Implant Dentistry. Sixtd edition. West Sussex: Wiley Blackwell; 2015.

COURSE SYLLABUS: DENTAL IMPLANTOLOGY MODUL 1 - XI semester

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lectures, exercises)
Week 1.	Lecture: Anatomy consideration in implant dentistry a. Anatomy of the maxilla - Muscle insertion of the maxilla - Sensor innervation of the maxilla - Maxillary artery - Vein drainage of the maxilla - Lymph drainage of the maxilla Exercises: Anamnesis and first check	2 2
Week 2.	Lecture: Anatomy consideration in implant dentistry b. Anatomy of the mandible - Muscle insertion of the mandible - innervation of the mandible - Blood vessels of the mandible c. Dissemination of dental infection Exercises: Methods of patient evaluation for implant treatment	2 2
Week 3.	Lecture: Clinical biomechanics in implant dentistry a. Loads applied to dental implants b. Mass, force and weight c. Force delivery and failure mechanism d. Moment of inertia Exercises: Analysis of different types of dental x-rays for evaluation for implantation and planning	2 2
Week 4.	Lecture: Bone physiology, metabolism and biomechanics a. Osteology: maxilla, mandible and TMJ b. Specific methods of evaluation	2

	c. Bone Classification d. Modeling and remodeling e. Growth and maturation of the cortex f. Deposition of calcium g. Metabolic bone disorders h. Wound healing of the bone tissu Exercises: Implant and surgical sets- introduction	2
Week 5.	Seminars for students- Discussion of previous lecture themes Exercises: Types of anesthesia in dental implantology	2 2
Week 6.	Lecture: Evaluation of the patient for implant treatment a. Diagnostic protocol and techniques in implant dentistry b. Forces factors related to health condition in patients c. Chewing dynamics d. Position of dental arches e. Risk factors Exercises: Types of sutures.	2 2
Week 7.	Lecture: Pre-implant prosthodontics consideration: evaluation, specific criteria and pre-implant prosthodontics solution a. Maxillary anterior tooth position b. Vertical dimension c. Occlusal plane d. Lip angle e. Maxilla-mandibular arch relationship f. Existing occlusion g. Temporomandibular joint h. Fixed prosthodontics restorations i. Removable prosthodontics j. Esthetic evaluation k. Psychological profile l. Financial barrier m. Progressive load Exercises: Preparation of the surgical field in implant dentistry	2 2
Week 8.	Seminars for students- Discussion of previous lecture themes Exercises: Implant placement in mandible – model.	2 2
Week 9.	Lecture: Protocol of implant placement “STEP BY STEP” I Part a. Surgical set introduction b. Implantology set introduction c. Implant positioning at partial edentulous patient Exercises: Implant placement in maxilla – model.	2 2
Week 10.	Lecture: Protocol of implant placement “STEP BY STEP” II Part d. Implant positioning at complete edentulous patient e. Surgical incision f. Pilot drill	2

	g. Twist drill h. Bone spreading i. Treatment of the cortex before implant placement j. Implant and cover screw placement Exercises: Impression techniques and pour cast model.	 2
Week 11.	Lecture: e. Selection of suture technique and surgical thread f. Bone replacement before, during and after implant insertion g. Medical treatment of patients with dental implants n. Complications Exercises: Abutments	2 2
Week 12.	Seminars for students- Discussion of previous lecture themes Exercises: Fixation finished prosthodontics restauration	2 2
Week 13.	Lecture: Prosthodontic treatment in patients with dental implants a. Learning about prosthodontics abutments and tools in dental implantology b. Impression technique in dental implantology c. Role and importance of occlusal anatomy and height of artificial teeth in patients with dental implants Exercises: Fixation finished prosthodontics restauration	2 2
Week 14.	Lecture: Prosthodontic treatment in patients with dental implants d. Procedures and options for replacing one tooth e. Methods and possibilities of replacing more teeth in partially edentulous patients f. Procedures and possibilities for replacing all lost teeth with totally edentulous patients Exercises: Fixation finished prosthodontics restauration	2 2
Week 15.	Recapitulation on previous Themes Exercises: Fixation finished prosthodontics restauration	2 2

COURSE SYLLABUS: DENTAL IMPLANTOLOGY MODUL 2 - XII semester

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lectures, exercises)
Week 1.	Lecture: Types of prosthetic restorations on dental implants with case report Exercises: Introducing students to the types of prosthetic restorations on implants, the use of prosthetic sets	2 2
Week 2.	Lecture: Patient profile, aesthetic profile, replacement profile Exercises: Planning in implant software	2 2
Week 3.	Lecture: Planning of implant prosthetic therapy with using of software, development of surgical guides with radiographic analysis Exercises: Making a surgical guide	2 2
Week 4.	Lecture: Implantation time and loading protocols in dental implantology Exercises: Open tray impression taking – hands on	2 2
Week 5.	Lecture: Implant impressions (open and closed tray technique) Exercises: Closed tray impression taking – hands on	2 2
Week 6.	Lecture: Intraoral digital impression in dental implant prosthetics Exercises: Introduction to intraoral scanner, taking a digital impression	2 2
Week 7.	Lecture: Abutments types Exercises: Determination and fixation of intermaxillary relations in dental implantology	2 2
Week 8.	Seminars for students- Discussion of previous lecture themes Exercises: Making of temporary prosthodontics replacement	2 2
Week 9.	Lecture: Temporary prosthodontic replacement on implants, output profile Exercises: Laboratory procedure for making a fixed prosthetic restoration (pour cast, gingival mask adaptation, selection of a suprastructure)	2 2
Week 10.	Lecture: Types of fixed prosthetic restoration on implants Exercises: Fixed prosthodontics on dental implants- making	2 2
Week 11.	Lecture: Types of removable prosthetic restoration on implants Exercises: Fixed prosthodontics on dental implants- making	2 2
Week 12.	Lecture: Occlusal concepts Exercises: Laboratory procedure for making a removable prosthetic restoration	2 2
Week 13.	Lecture: Patient follow-up and maintenance of replacement Exercises: Removable prosthodontics on dental implants- making	2 2

Week 14.	Lecture: Prosthetic complications in fixed and removable restorations on implants Exercises: Removable prosthodontics on dental implants- making	2 2
Week 15.	Seminars for students- Discussion of previous lecture themes Exercises: Removable prosthodontics on dental implants- making	2 2

Item code: SFSOS6111	**Course Title: Contemporary Orthodontic Therapy**		
Cycle: Integrated	**Year: VI**	**Semestar: XI**	**Number of ECTS credits: 4**
Status: Obligatory		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 6th year of study		
Aim (objectives) of the course:	- Acquisition of basic knowledge about the possibilities and methods of orthodontic therapy. - Introduce students to the mechanism of action of orthodontic appliances, and biomechanics of orthodontic tooth movement. - Introduce students to the possibilities of an interdisciplinary approach to solving orthodontic problems. -Teach dental students to recognize orthodontic anomalies and timely referrals for further orthodontic treatment		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units were formed with the aim that the student learns the basic procedures of orthodontic therapy. The teaching plan is given by the week in the attachment.		
Learning outcomes:	Knowledge: Explain what types of orthodontic therapy exist. Identify indications and contraindications for fixed and mobile orthodontic appliances. Know the possibilities of modern treatment methods, self-ligating techniques, and aligners. Skills: Students will be able to recognize malocclusion and determine the indication for orthodontic treatment. Competences: Students will be able to apply theoretical knowledge in order to timely identify orthodontic anomalies and refer the patient to an orthodontist.		
Teaching methods:	Interactive lectures Practical exercises		
	Students will take a partial exam, a practical exam and a final exam, and		

Assessment methods with assessment structure[11]:	will be continuously evaluated during the semester while working on the exercises. The partial exam is conducted during the semester, in writing form in the 8th week and carries 20 points. By continuous evaluation of the work on the exercises, the student can win a maximum of 10 points. The practical exam implies an assessment of acquired skills, it is taken in the 14th week of the semester and carries a maximum of 20 points. The final oral exam carries a total of 50 points. The final grade is formed by summing all points obtained through all forms of knowledge assessment: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 54 points.
Literatura[12]:	Required: 1. Nakaš E, Tiro A, Džemidžić V, Redžepagić – Vražalica L, Ajanović M. "Osnovi ortodontske dijagnostike", Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu, 2014. 2. . Tiro A, Nkaš E, Džemidžić V, Redžepagić – Vražalica L, Jelešković A. "Kompleksne ortodontske nepravilnosti", Sarajevo: Stomatolški fakultet s aklinikama Univerziteta u Sarajevu, 2020. 3. Redžepagić – Vražalica L, Nakaš E, Tiro A, Džemidžić V, Jelešković A, Bajrić E. "Ortodontske nepravilnosti", Sarajevo : Univerzitet u Sarajevu – Stomatološki fakultet sa stomatološki kliničkim centrom, 2024. 4. Demirović D. Osnovi fiksne tehnike u ortodonciji, Sarajevo, 2005. 5. Proffit WR, Fields HW, Sarver DM. Contemporery orthodontics, 4th edition. St. Louis: Mosby; 2006 Supplementary: 1. Marković M. Ortodoncija. Ortodontska sekcija Srbije, Beograd

Teaching plan Contemporary Orthodontic Therapy

Week	Course form and content	Number of hours
Week 1.	Lecture: Contemporary orthodontic therapy- introduction Practical exercises: They follow the lectures with their teaching content	2 1
Week 2.	Lecture: Biomechanics of the tooth moving Practical exercises: They follow the lectures with their teaching content	2 1
Week 3.	Lecture: Types of the tooth moving Practical exercises: They follow the lectures with their teaching content	2 1
Week 4.	Lecture: Therapy with removable orthodontic appliances Practical exercises: They follow the lectures with their teaching content	2 1

[11] The structure of points and point criteria for each subject is determined by the council of the organizational unit before the beginning of the academic year in which the subject is taught following Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

[12] Senat visokoškolske ustanove kao ustanove odnosno vijece organizacione jedinice visokoškolske ustanove kao javne ustanove, utvrduje obavezne i preporučene udžbenike i priručnike, kao i drugu preporucenu literaturu na osnovu koje se priprema i polaže ispit posebnom odlukom koju obavezno objavljuje na svojoj internet stranici prije početka studijske godine u skladu sa članom 56. st 3. Zakona o visokom obrazovanju Kantona Sarajevo

Week 5.	Lecture: Therapy with functional orthodontic appliances Practical exercises: They follow the lectures with their teaching content	2 1
Week 6.	Lecture: Fixed orthodontic therapy Practical exercises: They follow the lectures with their teaching content	2 1
Week 7.	Lecture: Additional devices in fixed orthodontic therapy Practical exercises: They follow the lectures with their teaching content	2 1
Week 8.	Lecture: Self-ligated systems, Partial exam Practical exercises: They follow the lectures with their teaching content	2 1
Week 9.	Lecture: Aligner therapy Practical exercises: They follow the lectures with their teaching content	2 1
Week 10.	Lecture: Combined orthodontic-surgical therapy Practical exercises: They follow the lectures with their teaching content	2 1
Week 11.	Lecture: Therapy of adult patients Practical exercises: They follow the lectures with their teaching content	2 1
Week 12.	Lecture: Therapy of adult patients Practical exercises: They follow the lectures with their teaching content	2 1
Week 13.	Lecture: Adverse effects of orthodontic therapy Practical exercises: They follow the lectures with their teaching content	2 1
Week 14.	Lecture: Retention and relapse Practical exercises: They follow the lectures with their teaching content	2 1
Week 15.	Lecture: Recapitulation Practical exercises: They follow the lectures with their teaching content	2 1
Week 17.	Final exam	
Week 19.		

Item code: SFS0S1104E	**Course Title: CLINICAL PERIODONTOLOGY**		
Cycle: integrated	**Year: VI**	**Semester: XI**	**Number of ECTS credits:** 5
Status: obligatory		**Total number of hours: 45** **Lectures** 15 **Exercises** 30	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		

Prerequisite for enrolment:	All students enrolled in the 6th year of study
Aim (objectives) of the course:	The aim of the course is to educate the students about the significance of periodontological surgical interventions with the aim of establishing morphological-physiological condition of the periodont. - To introduce the students to the indications, techniques and instrumentation necessary for surgical interventions, as well as modern methods of guided tissue and bone regeneration, as well as the use of medications (locally and systemically) in periodontal treatment, pre-operatively and post-operatively. - To educate students about the significance of periodontal aspect of occlusion, occlusion analysis, occlusal balancing and teeth stabilization using splints.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. General principles and aims of periodontal surgery (Full mouth therapy) 2. Resective periodontal surgery – Gingivectomy with gingivoplasty 3. Periodontal access surgical therapy 4. Access lobes in periodontal surgery (Access flap) 5. Peridonotal surgical therapy – furcation involvement 6. General aims and principles of mucogingival plastic surgery 7. Mucogingival surgery – modern therapy procedures 8. Guided bone regeneration (GBR) 9. Guided tissue regeneration (GTR) 10. Laser application in periodontal therapy 11. Drug therapy in periodontology 12. Periodontal aspect of occlusion 13. Periodontal aspect of occlusion 14. Splints in periodontal therapy 15. Supportive periodontal therapy
Learning outcomes:	Through the course Clinical periodontology student is going to adopt the following knowledge: - They are going to know indications, contraindications, techniques and instruments for gingivectomy, lobe-surgery, mucogingival surgery, and they are going to be familiarized with modern methods of guided bone-tissue regeneration. - They are going to be introduced to the terms of statics, articulation and dynamics, occlusal disorders and their influence on the onset of periodontal diseases, imbalances and to introduce the students. - They will be introduced to the local and systemic drug therapy which is, in periodontology, indicated in the treatment of acute and chronic conditions, pre-operatively and post-operatively.
Teaching methods:	The course is held: 1. lecture ex cathedra for all the students 2. clinical exercises
Assessment methods with assessment structure:	One of the forms of activity is lecture and practice attendance. Points can be earned in the following way: - regular lecture attendance - 5 points, - practice attendance – 5 points - exam by means of a test – 15 points, - (in week 7 written exam - indications, contraindications and work techniques in periodontal surgery) - case presentation – 20 points - (in week 10 written processing of a clinical case)

	- practical exam – 10 points - oral exam – 45 points. Maximum number of points is 100. According to the above-mentioned grade scale is as follows: m) 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points; n) 9 (B) - above average, with some errors, carries 85-94 points; o) 8 (C) - average, with noticeable errors, carries 75-84 points; p) 7 (D) -generally good, but with significant shortcomings, carries 65-74 points; q) 6 (E) -satisfies the minimum criteria, carries 55-64 points; r) 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 7. Berislav Topić, Periodontology, biology, immunopathogenesis, practice. Sarajevo – Zagreb, 2005. Additional: 8. Jan Lindhe, Clinical periodontology and dental implantology, According to the Fourth edition (translation in Croatian language), Zagreb, 2004. 9. Đajić Dragoljub: Atlas – Periodontology. Beograd 2001.

Implementation plan for the course Clinical periodontology

Week	Form of teaching and curriculum	Number of hours
Week 1	Lecture: General principles and aims of periodontal surgery (Full mouth therapy) Practice: Individual work with a patient	1 2
Week 2	Lecture: Resective periodontal surgery – Gingivectomy with gingivoplasty Practice: Individual work with a patient	1 2
Week 3	Lecture: Periodontal access surgical therapy Practice: Individual work with a patient	1 2
Week 4	Lecture: Access lobes in periodontal surgery (Access flap) Practice: Individual work with a patient	1 2
Week 5	Lecture: Peridonotal surgical therapy – furcation involvement Practice: Individual work with a patient	1 2
Week 6	Lecture: General aims and principles of mucogingival plastic surgery Practice: Individual work with a patient	1 2
Week 7	Lecture: Mucogingival surgery – modern therapy procedures Written exam by means of a test (indications, contraindications and work techniques in periodontal surgery)	1 2
Week 8	Lecture: Guided bone regeneration (GBR) Practice: Individual work with a patient	1 2
Week 9	Lecture: Guided tissue regeneration (GTR) Practice: Individual work with a patient	1 2
Week 10	Lecture: Laser application in periodontal therapy Practice: Individual work with a patient	1 2
Week 11	Lecture: Drug therapy in periodontology Written elaboration of a clinical case	1 2

Week 12	Lecture: Periodontal aspect of occlusion Practice: Individual work with a patient	1 2
Week 13	Lecture: Periodontal aspect of occlusion Practice: Individual work with a patient	1 2
Week 14	Lectures: Splints in periodontal therapy Practice: Individual work with a patient	1 2
Week 15	Lecture: Supportive periodontal therapy Practice: Practical exam	1 2
Week 17	Final exam (Oral exam)	
Week 19	Makeup exam date for students who have not passed the final exam	

Item code: SFSOS6112E	**Course Title: Pedodontics 1**		
Cycle: integrated	**Year: VI**	**Semester: XI**	**Number of ECTS credits:** 4
Status: obligatory		**Total number of hours: 45** **Lectures** 1 (15) **Exercises** 2 (30)	
Teaching participants	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	All students enrolled in the 6th year of study		
Aim (objectives) of the course:	- Acquiring a basic knowledge about the the specifics of pediatric patient and of the clinical dental examination (age-specific approach to patient, establishing communication with a patient and pain management). - Acquiring basic knowledge about all aspects of diagnosis and treatment of non-physiological conditions in children and adolescents. - Acquiring knowledge about mental and physical growth and development from conception to the end of adolescence. - Acquiring knowledge and understanding of the causes and clinical presentation of non-physiological conditions in children and adolescents. - Introduce students to dental materials used in pedodontics and implement the dental interventions adopted.		
Thematic units: *(If necessary, the performance plan is determined by taking into account the specifics of organizational units)*	1. Physical and psychological development and growth of a child. 2. Types of child personalities. Behavioral problems and behavioral control techniques. 3. Prevention and management of dental anxiety and fear. 4. First dental visit. 5. Tooth formation, tooth eruption, the transition from the deciduous to the permanent dentition. 6. Eruption disorders. 7. Anomalies in the number, size, shape, color and location of teeth. 8. Developmental defects of teeth. 9. Growth and development of jaws, teeth and occlusion in deciduous, mixed and permanent dentition.		

	10. Radiographic diagnosis in the pediatric dental patient. 11. Dental restorative materials in pediatric dentistry . 12. Pain and pain control in children and adolescents. 13. Interceptive orthodontics.
Learning outcomes:	Knowledge: Theoretical concept and practical information on: physiological growth and development, diagnostic procedures of developmental disturbances of jaws and teeth and treatment methods. Skills: Know and use diagnostic protocol (history taking, clinical examination, differential diagnosis, final diagnosis) and treatment planning for the non-physiological conditions through work with patients at practical exercises. Competences: Ability to treat non-physiological conditions, selection and application of adequate dental materials and control of pain and anxiety in children and adolescents.
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Acquired knowledge is assessed through partial assessment and final exam. The partial exam and practical excercise activities carry 50% of the grade. The final exam carries a maximum of 50% of the grade. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: • Jurić H.(urednik), Dječija dentalna medicina . Naklada Slap, Zagreb, 2015. • Kobašlija S, Vulićević ZR, Jurić H i sar. Minimalna invazivna terapija (2012). • Vulićević ZR, Jurić H, Kobašlija S i sar. Klinička primena materijala u dečijoj stomatologiji (2010). • Koch G, Poulsen S. Pedodoncija-klinički pristup (2005). • Beloica D i sar. Dečja stomatologija, Elit Medica, (2000). Additional: • Cameron AC, Widmer RP. Handbook of Pediatric Dentistry (2003). • Pinkham JR i sar. Pediatric Dentistry-Infancy through Adolescence (2005).

Sillabus plan : Pedodontics 1

Week	Lectures/practicals	Hours
Week 1.	Lecture: Physical and psychological development and growth of a child. Exercises/ Practical: following the lecture topic	1 2
Week 2.	Lecture: Types of child personalities. Behavioral problems and behavioral control techniques. Exercises/ Practical: following the lecture topic	1 2
Week 3.	Lecture: Prevention and management of dental anxiety and fear. Exercises/ Practical: following the lecture topic	1 2

Week 4.	Lecture: First dental visit – First dental visit - the specifics of working with children, the time and structure of the first dental visit, history taking and record keeping. Exercises/ Practical: following the lecture topic	1 2
Week 5.	Lecture: First dental visit – clinical examination, early dental examination, initial treatment, treatment plan. Exercises/ Practical: following the lecture topic	1 2
Week 6.	Lecture: Tooth formation, tooth eruption, the transition from the deciduous to the permanent Dentition. Eruption disorders. Exercises/ Practical : following the lecture topic	1 2
Week 7.	Lecture: Anomalies in the number, size, shape, color and location of teeth. Exercises/ Practical : following the lecture topic	1 2
Week 8.	Lecture: Developmental defects of the teeth. Exercises/ Practical : following the lecture topic	1 2
Week 9.	Lecture: Growth and development of jaws, teeth and occlusion in deciduous, mixed and permanent dentition. Functions, dysfunctions and parafunctions. Exercises/ Practical : following the lecture topic	1 2
Week 10.	Lecture: Radiographic diagnosis in the pediatric dental patient. Exercises/ Practical : following the lecture topic	1 2
Week 11.	Lecture: Dental restorative materials in pediatric dentistry (I). Exercises/ Practical : following the lecture topic	1 2
Week 12.	Lecture: Dental restorative materials in pediatric dentistry (II). Exercises/ Practical : following the lecture topic	1 2
Week 13.	Lecture: Pain and pain control in children and adolescents (I). Exercises/ Practical : following the lecture topic	1 2
Week 14.	Lecture: Pain and pain control in children and adolescents (II). Exercises/ Practical : following the lecture topic	1 2
Week 15.	Lecture: Interceptive orthodontics. Exercises/ Practical : following the lecture topic	1 2
Week 17.	Final examination	
Week 19.	Final examination/ retake	

Item code: SFSOS1103E	**Course Title: Forensic Medicine and Dentistry**		
Cycle: integrated	**Year: VI**	**Semester: XI**	**Number of ECTS credits:** 5
Status: obligatory		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 6th year of study		
Aim (objectives) of the course:	The course aims to acquaint students with the role of dentists in the procedures of identification of living and deceased persons, with the legal		

	framework of practicing dental medicine with special emphasis on professional errors and negligence of doctors
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units were formed with the aim that the student learns the basic procedures of identification of persons through dental methods, and to get acquainted with other fields of forensic dentistry, such as jurisprudence and forensic expertise. The teaching plan is given by the week in the attachment.
Learning outcomes:	Knowledge: Accept and understand the ways of gathering information important in identification and forensic expertise. To know the forensic significance of the responsibilities and mistakes of a dental practitioner, and know the forensic qualification of oral injuries Skills: Master the nomenclature and terminology used in forensic dentistry, know the basics of dental identification methods, know and use radiographic analysis in determining dental age Competences: To be able to collect, compare and analyze antemortem and post-mortem dental data, estimate dental age in different age groups, understand forensic expertise and the responsibility of dentists
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Acquired knowledge is assessed through partial assessment and final exam. The partial knowledge test is performed during the semester and contains a practical task that carries a maximum of 10% of the grade and a test that carries a maximum of 30% of the grade. For a test to be scored, it must contain a minimum of 50% correct answers. The final exam contains a practical task that carries a maximum of 10% of the grade and a final test that carries a maximum of 50% of the grade. For a test to be scored, it must contain a minimum of 50% correct answers. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Brkić H. and associates: Forensic Dentistry, Školska knjiga dd Zagreb, 2000. Additional: 1. Stimson PG, Mertz CA Forensic Dentistry, CRC Press LLC, 1997. 2. Whittaker DK, Mac Donald DG: A Color Atlas of Forensic Dentistry, Wolf Medical Publications Ltd, England, 1998. 3. Irish JD, Nelson GC, Techniques and Applications in Dental Anthropology, Cambridge University Press, 2008

Teaching plan of the course Forensic medicine and dentistry

Week	Form of teaching and lectures	Hours

Week 1.	Lecture: Introductory remarks on the subject. Definition of forensic dentistry History of the development of forensic dentistry Exercises: Nomenclature and records in forensics	2 1
Week 2.	Lecture: Death, causes, and signs of death Exercises: Forms and tools in forensic dentistry	2 1
Week 3.	Lecture: Knowledge and skills of the forensic dentist. Identification through dental methods, equipment, and procedures. Collection, maintenance, and storage of evidence; protocols Exercises: Analysis of AM and PM data sources.	2 1
Week 4.	Lecture: Specific characteristics of teeth and jaws important for forensic identification: hereditary and acquired Exercises: Working on WinId forms AM and PM. Recording of specific tooth characteristics	2 1
Week 5.	Lecture: WinId and Interpol identification forms: antemortem and postmortem. Terminology and codes Exercises: Working on Interpol AM forms	2 1
Week 6.	Lecture: Comparison of AM and PM data - derivation of identification conclusion Exercises: Working on Interpol PM forms	2 1
Week 7.	Lecture: Mass disasters: the role of dentists. Work organization, teams, stress control Exercises: Computer-aided identification	2 1
Week 8.	Lecture: Estimation of dental age in adults: morphological, radiological, biochemical, and histological techniques for estimating dental age Exercises: Estimation of dental age in adults based on radiographic analysis and morphological analysis of teeth	2 1
Week 9.	Lecture: Assessment of dental age in subadults - visual, morphological, radiological, and histological techniques of dental age assessment Exercises: Estimation of dental age in children based on radiographic analysis	2 1
Week 10.	Lecture: Race assessment by methods of forensic anthropology Exercises: Estimation of dental age in adolescents based on radiographic analysis. Writing a forensic anthropological report	2 1
Week 11.	Lecture: Gender assessment by analysis of the skull, jaw and teeth Exercises: Gender assessment by radiographic analysis of the jaw and teeth	2 1
Week 12.	Lecture: Analysis of bite marks: gathering evidence, recording, and interpretation Exercises: Analysis of simulated bite marks	2 1
Week 13.	Lecture: Jurisprudence and expertise Exercises: Analysis of lip prints and palatal folds	2 1
Week 14.	Lecture: Professional responsibility of dentists Exercises: A case study from practice	2 1
Week 15.	Lecture: Dental trauma-medical and forensic classification Exercises: Analysis of dental trauma	2 1
Week 17.	Final exam	
Week 19.	Corrective exam	

Item code:	**Course: DIGITAL DENTAL TECHNOLOGIES**		
Cycle: integrated	**Year: VI**	**Semester: XI**	**Number of ECTS credits: 3**

Status: Obligatory	**Total number of hours: 20 (15+5)** Lecture 15 Laboratory exercises 5 Seminar 5
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** **Department of prosthodontics with dental implantology**
Prerequisite for enrollment:	The requirements are regulated by the Study Rules for the Integrated study program of the first and second cycle at the higher education institutions of the University of Sarajevo.
Aim (objectives) of the course:	The aim of the course is to acquire modern theoretical knowledge in the field of digital dental technologies and to understand how and when they are applied in clinical practice.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Introduction to digital dental technologies 2. Digital recording – methods 3. Digital imaging, diagnosis, planning and assessment of treatment outcomes 4. Intraoral and extraoral scanners 5. Digital impressions - applications and limitations 6. Virtual articulator 7. CAD - Computer-Aided Design 8. CAM – computer-aided manufacturing – subtractive technology 9. CAM – computer-guided manufacturing – additive technology 10. Dental materials in digital technologies 11. Clinical application of digital technologies in fixed prosthodontics 12. Clinical application of digital dental technology in removable prosthodontics 13. Clinical application of digital dental technology in implant surgery computer-guided surgery 14. Clinical application of digital dental technology in implant prosthodontics 15. Virtual patient
Learning outcomes:	Knowledge: - The student will acquire contemporary knowledge about all available digital dental technologies, their capabilities, limitations, and the advantages of their use in planning and application in everyday clinical practice. Skills: - Proper selection and purposeful application of specific digital technology. - Analyze and plan treatment, evaluate treatment outcomes - The student will be able to critically evaluate and compare commercially available digital dental technologies. Competences: - Apply contemporary digital dental technologies in daily clinical practice
Teaching methods:	Teaching are conducted in the form of: - lectures for all students - laboratory exercises - seminars in the form of interactive learning

Assessment methods with assessment structure:	Acquired knowledge and skills are continuously assessed throughout the semester. Within the structure of the total points, students can achieve points for activities and knowledge assessments: - seminar paper on a given topic - maximum 20 points, minimum 11 points - partial exam (in the form of a test in the 8th week of the semester) maximum 30 points, minimum 16.5 points - final exam – maximum 50 points, minimum 27.5 points. Partial exams can only be scored if each test has at least 55% correct answers. Not all questions in the test need to be graded with the same number of points. The decision on how to score questions in the test is made by the course professor before the test is administered. The final exam is conducted as an oral examination of theoretical knowledge. A student who does not pass the partial exam must take the entire comprehensive material during the final exam The passing score level on the exam is 55%. In accordance with the above the grade scale is as follows: s) 10(A) - exceptional success without errors or with insignificant errors - 95-100 points t) 9(B) - above average with few errors- 85-94 points; u) 8 (C) - average with noticeable errors - 75 -84 points; v) 7(D) - generally good but with significant errors- 65-74 points; w) 6(E) - meets the minimum criteria - 55-64 points; x) 5 (F, FX) – does not meet the minimum criteria, less than 55 points
Literature:	**Required literature:** 1. Masri R, Discroll CF. Clinical Application of Digital Dental Technology. Wiley-Blackwell; 2023. 2. Literature - articles available online in full versions from references database (PubMed, SCOPUS, Science Citation Index Expanded, EBSCO) and Google Scholar, Semantic Scholar, SciELO, SpringerLink, Wiley Online Library.

COURSE SYLLABUS: DIGITAL DENTAL TECHNOLOGIES

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lectures, exercises)
Week 1.	Lecture: Introduction to digital dental technologies	1
Week 2.	Lecture: Digital imaging – methods	1
Week 3.	Lecture: Digital imaging, diagnosis, planning and assessment of treatment outcomes	1
Week 4.	Lecture: Intraoral and extraoral scanners	1

	Seminar	
Week 5.	Lecture: Digital impressions - applications and limitations Seminar	1
Week 6.	Lecture: Virtual articulator	1
Week 7.	Lecture: CAD – Computer - Aided Design Laboratory exercises: Computer - Aided Design	1 1
Week 8.	Lecture: CAM – Computer - aided manufacturing – subtractive technology Laboratory exercises: Subtractive technology Seminar	1 1
Week 9.	Lecture: CAM – Computer - aided manufacturing – additive technology Laboratory exercises: Additive technology Seminar	1 1
Week 10.	Lecture: Dental materials in digital technologies Seminar	1
Week 11.	Lecture: Clinical application of digital dental technology in fixed prosthodontics Laboratory exercises: Digital dental technology in fixed prosthodontics	1 1
Week 12.	Lecture: Clinical application of digital dental technology in removable prosthodontics	1
Week 13.	Lecture: Clinical application of digital dental technology in implant surgery computer - guided surgery	1
Week 14.	Lecture: Clinical application of digital dental technology in implant prosthodontics Laboratory exercises: Digital dental technology in implant prosthodontics	1 1
Week 15.	Lecture: Virtual patient	1

Item code: SFSOS1205E	**Course Title: CLINICAL PRACTICE**		
Cycle: integrated	**Year: VI**	**Semester: XII**	**Number of ECTS credits:** 9
Status: obligatory		**Total number of hours: 180** Optionally develop the distribution of hours by type: **Lectures** 0 **Exercises 12** Sseminars 1	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** Department of Prosthodontics with Dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of Preventive dentistry and Pedodontics.		

Prerequisite for enrollment:	All students enrolled in the 6th year of study
Aim (objectives) of the course:	Train students for independent work with patients
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	• Diagnostic and therapeutic procedures in prosthetic rehabilitation of patients- clinical work • Diagnostic and therapeutic protocol of periodontal disease - clinical work • Diagnostic and therapeutic protocol for diseases of the oral mucosa - clinical work • Diagnostic and therapeutic procedures of orthodontic irregularities, their characteristics and the possibilities of their therapy. - clinical work • Diagnostic therapeutic protocol in restorative dentistry and endodontics - clinical work. • Diagnostic therapeutic protocol in oral surgery - clinical work • Diagnostic therapeutic protocol in pedodontics - clinical work
Learning outcomes:	After attending the class, the student should adopt the attitudes. A complete understanding of the importance of the correct selection of therapy and the implementation of therapy: Set the indication, carry out diagnostic procedures, make a therapy plan and perform prosthetic therapy for patients. Know how to recognize orthodontic irregularities, their characteristics and the possibilities of their therapy, and determine the degree of need for orthodontic therapy and refer the patient to an orthodontist in a timely manner. To be trained to independently create cavities of all classes and to properly reconstruct a tooth tissue defect with the appropriate material, to recognize non-carious lesions, dentine hypersensitivity and tooth discoloration, and the ways and means of their care. To master the endodontic diagnostic and therapeutic protocol. By the end of the course at the Department of Preventive Dentistry and Pedodontics, the student should be able to: Practically apply gained diagnostic protocol knowledge (anamnesis, examination, differential diagnosis, final diagnosis), and plan and implement treatment of the listed pathological conditions through work with patients on practical exercises. Treat pathological conditions in clinics, choose adequate dental materials, and apply them using appropriate methods. Students will improve the techniques of local anesthesia, they will master the techniques of tooth extraction under local anesthesia as well as extractions with all possible complications. Recognition of morphological specificities of teeth and their influence on the outcome of modern restorative treatments. Analysis of the morphological specificities of the endodontic space - the first step towards successful endodontic treatment.
Teaching methods:	Practical teaching on the patient, clinical work for all students

Assessment methods with assessment structure:	Acquired knowledge is assessed through partial assessment and final exam. Attendance at exercises - 60 points Exercise activity - 30 points Seminar – 10 points 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	All textbooks - periodontology, oral surgery and restorative dentistry and endodontics, prosthetics and pedodontics and preventive dentistry. Literature - articles available online in full versions from reference databases (PubMed, SCOPUS, Science Citation Index Expanded, EBSCO) and Google Scholar, Semantic Scholar, SciELO, SpringerLink, Wiley Online Library.

Course syllabus

Week	Teaching and learning methods	Number of hours
Week 1.	Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	2 2 2 2 2 2
Week 2.	Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	2 2 2 2 2 2
Week 3.	. Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	2 2 2 2 2 2
Week 4.	Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	2 2 2 2 2 2
Week 5.	Department of dental prosthetics with dental implantology,	2 2

	The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	 2 2 2 2
Week 6.	Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	2 2 2 2 2 2
Week 7.	Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	2 2 2 2 2 2
Week 8.	Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	2 2 2 2 2 2
Week 9.	Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	2 2 2 2 2 2
Week 10.	Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	2 2 2 2 2 2
Week 11.	Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	2 2 2 2 2 2
Week 12.	Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics,	2 2 2 2 2

	Department of preventive dentistry and pedodontics.	2
Week 13.	Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	2 2 2 2 2 2
Week 14.	Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	2 2 2 2 2 2
Week 15.	Department of dental prosthetics with dental implantology, The Department of Dental Pathology and Endodontics and the Department of Dental Morphology with Dental Anthropology (jointly), Department of Oral Medicine and Periodontology, Department of Oral Surgery with Dental Implantology, Department of Orthodontics, Department of preventive dentistry and pedodontics.	2 2 2 2 2 2

Item code: SFSOS1202E	**Course Title: Pedodontics 2**		
Cycle: integrated	**Year: VI**	**Semester: XII**	**Number of ECTS credits:** 5
Status: obligatory		**Total number of hours: 75** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 3 (45)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**		
Prerequisite for enrollment:	All students enrolled in the 6th year of study		
Aim (objectives) of the course:	Basic knowledge acquisition of all aspects of diagnosis and treatment of pathological dental changes in children and adolescents. Acquisition of knowledge and understanding of the causes of those clinical conditions. The overall aim is to prepare the student to provide basic clinical treatment of the listed medical conditions and to gain the knowledge about modern dental materials used for that purpose.		

Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Dental diseases: caries, attrition, abrasion, erosion. 2. Macroscopic and microscopic characteristics of early stages of caries lesion (reversible stages). Early childhood caries. 3. Restorative and minimally invasive treatment. 4. Endodontic treatment of primary teeth. 5. Endodontic treatment of the young permanent dentition. 6. Oral pathology- periodontal diseases in children and adolescents. 7. Oral pathology- oral mucosa diseases in children and adolescents. 8. Pediatric oral surgery procedures (tooth extraction, inflammatory processes in oral tissues and jaw bones. 9. Traumatic dental injuries (epidemiology, classification, initial assessment, diagnosis). Traumatic dental injuries in the primary dentition. 10. Traumatic dental injuries in the young permanent dentition. 11. Pediatric esthetics. Pediatric dental prosthetics. Stainless steel crowns. 12. Oral manifestations of systemic diseases in children and adolescents. Dental management of the medically compromised children. 13. Pediatric emergency dental care and principles of appropriate antibiotic use in children. 14. Assessment and treatment planning in children and adolescents. 15. Management of pregnant patient in dentistry.
Learning outcomes:	Knowledge: Acquisition of theoretical knowledge and practical information regarding diseases of mineralized dental tissues, dental pulp, oral mucosa and periodontal diseases, as well as dental traumatic injuries and oral surgical interventions in both healthy and medically compromised children. Skills: Practical application of gained diagnostic protocol knowledge (anamnesis, examination, differential diagnosis, final diagnosis), as well as planning and implementation of treatment of the listed pathological conditions through work with patients on practical exercises. Competences: Ability to treat pathological conditions, ability to choose adequate dental materials and apply them using appropriate methods.
Teaching methods:	Interactive lectures Practical exercises Consultations
Assessment methods with assessment structure:	Acquired knowledge is assessed through practical exercise activity, partial assessment and final exam. The partial assessment and practical exercise activity carries 50% of the grade. Final exam carries 50% of the grade. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: Jurić H.(urednik), Dječija dentalna medicina. Naklada Slap, Zagreb, 2015. Kobašlija S, Vulićević ZR, Jurić H i sar. Minimalna invazivna terapija

	(2012). Vulićević ZR, Jurić H, Kobašlija S i sar. Klinička primena materijala u dečijoj stomatologiji (2010). Koch G, Poulsen S. Pedodoncija-klinički pristup (2005). Beloica D i sar. Dečja stomatologija, Elit Medica, (2000). Additional: Cameron AC, Widmer RP. Handbook of Pediatric Dentistry (2003). Pinkham JR i sar. Pediatric Dentistry-Infancy through Adolescence (2005). Stimson PG, Mertz CA Forensic Dentistry, CRC Press LLC, 1997.

Teaching plan subject Pedodontics 2

Week	Lectures and practical exercises	Number of hours
Week 1.	Lecture: Dental diseases: caries, attrition, abrasion, erosion. Practical exercise: following the lecture topic.	2 2
Week 2.	Lecture: Macroscopic and microscopic characteristics of early stages of caries lesion (reversible stages). Early childhood caries. Practical exercise: following the lecture topic.	2 2
Week 3.	Lecture: Restorative and minimally invasive treatment. Practical exercise: following the lecture topic.	2 2
Week 4.	Lecture: Endodontic treatment of primary teeth. Practical exercise: following the lecture topic.	2 2
Week 5.	Lecture: Endodontic treatment of the young permanent dentition. Practical exercise: following the lecture topic.	2 2
Week 6.	Lecture: Oral pathology- periodontal diseases in children and adolescents. Practical exercise: following the lecture topic.	2 2
Week 7.	Lecture: Oral pathology- oral mucosa diseases in children and adolescents. Practical exercise: following the lecture topic.	2 2
Week 8.	Lecture: Pediatric oral surgery procedures (tooth extraction, inflammatory processes in oral tissues and jaw bones). Practical exercise: following the lecture topic.	2 2
Week 9.	Lecture: Traumatic dental injuries (epidemiology, classification, initial assessment, diagnosis). Traumatic dental injuries in the primary dentition. Practical exercise: following the lecture topic.	2 2
Week 10.	Lecture: Traumatic dental injuries in the young permanent dentition. Practical exercise: following the lecture topic.	2 2
Week 11.	Lecture: Pediatric esthetics. Pediatric dental prosthetics. Stainless steel crowns. Practical exercise: following the lecture topic.	2 2
Week 12.	Lecture: Oral manifestations of systemic diseases in children and adolescents. Dental management of the medically compromised children. Practical exercise: following the lecture topic.	2 2
Week 13.	Lecture: Pediatric emergency dental care and principles of appropriate antibiotic use in children. Practical exercise: following the lecture topic.	2 2
Week 14.	Lecture: Assessment and treatment planning in children and adolescents. Practical exercise: following the lecture topic.	2 2
Week 15.	Lecture: Management of pregnant patient in dentistry. Practical exercise: following the lecture topic.	2 2
Week 17.	Final exam I	
Week 19.	Final exam II	

Item code: SFSOS1204E	**Course Title: ESTHETIC DENTISTRY**		
Cycle: integrated study	**Year: VI**	**Semester: XII**	**Number of ECTS credits: 3**
Status: obligatory		**Total number of hours: 45 (30+15)** Optionally develop the distribution of hours by type: **Lectures** 30 **Exercises** 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	The requirements are regulated by the Study Rules for the Integrated study program of the first and second cycle at the higher education institutions of the University of Sarajevo.		
Aim (objectives) of the course:	The aim of the course is for the student in the education to work with patients to acquire the necessary knowledge in the field of aesthetic dentistry in accordance with professional and scientific trends in the field of modern dental science.		
Thematic units:(*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Aesthetic parameters of the face 2. Aesthetic parameters of a smile 3. Shape and color of teeth - perception, contrast effects, conventional and digital determination of tooth color 4. Analysis of aesthetic deviations and patient preparation 5. Waxing (wax up) – wax and waxing technique, aesthetics and front teeth, function and side teeth, waxing design trial. 6. Digital Smile Design DSD – first examination and communication with the patient, virtual planning – Photoshop Smile Design 7. Photography in dentistry 8. Aesthetic preparatory periodontal procedures 9. The role of orthodontic therapy in achieving optimal dental aesthetics 10. Aesthetic preparatory procedures for teeth whitening 11. Aesthetic procedures - restorative solution 12. Aesthetic procedures - prosthetic solution 13. Aesthetic procedures - implant - prosthetic solution 14. Dermal fillers based on hyaluronic acid - properties and possibilities of aesthetic correction 15. Active ingredient botulinum toxin - properties and possibilities of aesthetic correction		
Learning outcomes:	Knowledge: After listening to the lesson, the student should adopt the attitudes. A complete understanding of the importance of the correct selection of therapy and the implementation of therapy: - planning indicated therapy - implementation of the indicated therapy Skills: Independently create and implement therapy in esthetic dentistry. Competences: Independent work of the student in the realization of complete indicated therapy in esthetic dentistry - dental prosthetics.		
Teaching methods:	- lectures - practical teaching, exercises for all students		
Assessment methods with assessment	Acquired knowledge and skills are tested continually during the semester.		

structure:	The structure of the total number of points the students can acquire for activities and tests is as follows: - Activities in lectures - maximum 10 points - Verification of acquired knowledge on clinical exercises - maximum 15 points - Clinical exercises - individual work with the patient - maximum 25 points - Final exam - maximum 50 points The final exam consists of a practical test of knowledge and an oral test of theoretical knowledge. The student takes the practical part of the final exam in the 15th week of classes as part of clinical exercises. The condition for taking the oral test of theoretical knowledge of the final exam is passing the practical part of the exam. The passed practical part of the exam is valid for one academic year. The passing score level on the exam is 55% In accordance with the above the grade scale is as follows: g) 10(A) - exceptional success without errors or with insignificant errors - 95-100 points h) 9(B) - above average with few errors - 85-94 points; i) 8 (C) - average with noticeable errors - 75 -84 points; j) 7(D) - generally good but with significant errors- 65-74 points; k) 6(E) - meets the minimum criteria - 55-64 points; l) 5 (F, FX) – does not meet the minimum criteria, less than 55 points.
Literature:	Required literature: 1. Goldstein RE, Chu SJ, Lee EA, Stappert CFJ, urednici. Ronald E. Goldstein's Esthetics in Dentistry. 3. izd. Hoboken, NJ: Wiley-Blackwell; 2018. Recommended literature: 1. References - articles available online in full versions from reference databases (PubMed, SCOPUS, Science Citation Index Expanded, EBSCO) i Google Scholar, Semantic Scholar, SciELO, SpringerLink, Wiley Online Library.

COURSE SYLLABUS: ESTHETIC DENTISTRY

Week	Form of teaching and materials	Number of hours
Week 1.	Lecture: Aesthetic parameters of the face Exercises: Diagnostic and therapeutic procedures in aesthetic dentistry	2 1
Week 2.	Lecture: Aesthetic parameters of a smile Exercises: Diagnostic and therapeutic procedures in aesthetic dentistry	2 1
Week 3.	Lecture: Tooth shape and color - perception, contrast effects, conventional and digital tooth color determination Exercises: Diagnostic and therapeutic procedures in aesthetic dentistry	2 1
Week 4.	Lecture: Analysis of aesthetic deviations and patient preparation Exercises: Diagnostic and therapeutic procedures in aesthetic dentistry	2 1
Week 5.	Lecture: Wax up - wax and technique, esthetics and anterior teeth, function and posterior teeth, wax-up design trial. Exercises: Wax up –techniques, wax-up design trial.	2 1
Week 6.	Lecture: Digital Smile Design DSD - first examination and communication with the patient, virtual planning - Photoshop Smile Design. Exercises: DSD – Digital Smile Design.	2 1
Week 7.	Lecture: Photography in Dentistry Exercises: Analysis and Treatment Plan	2 1
Week 8.	Lecture: Aesthetic periodontal preparatory procedures Exercises: Diagnostic and therapeutic procedures in aesthetic dentistry	2 1
Week 9.	Lecture The role of orthodontic therapy in achieving optimal dental aesthetics. Exercises: Diagnostic and therapeutic procedures in aesthetic dentistry	2 1
Week 10.	Lecture: Aesthetic preparation procedures for teeth whitening Exercises: Diagnostic and therapeutic procedures in aesthetic dentistry	2 1
Week 11.	Lecture: Aesthetic procedures – restorative solution Exercises: Diagnostic and therapeutic procedures in aesthetic dentistry	2 1
Week 12.	Lecture: Aesthetic procedures – prosthetic solution Exercises: Diagnostic and therapeutic procedures in aesthetic dentistry	2 1

Week 13.	Lecture: Aesthetic procedures – implant-prosthetic solution Exercises: Diagnostic and therapeutic procedures in aesthetic dentistry	2 1
Week 14.	Lecture: Dermal fillers based on hyaluronic acid - properties and possibilities of esthetic correction Exercises: Diagnostic procedures in aesthetic dentistry	2 1
Week 15.	Lecture: Active ingredient botulinum toxin - properties and possibilities of esthetic correction Exercises: Diagnostic procedures in aesthetic dentistry	2 1

Item code: SFSIS1106E	**Course Title: RECONSTRUCTION OF ENDODONTICALLY TREATED TEETH**		
Cycle: Integrated	**Year: VI**	**Semester: XI**	**Number ECTS credit: 2**
Status: Elective		**Total number of hours: 45** Lectures 15 Exercises 30	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** **Department of Prosthodontics with Dental Implantology**		
Prerequisite for enrollment:	The conditions are regulated by the Rules of Study for the Integrated Study Program of the first and second cycle of studies at higher education institutions of the University of Sarajevo.		
Aim (objectives) of the course:	To prepare students for work on patients in the field of fixed dental prosthodontics in the field of reconstruction of endodontically treated teeth. To enable students to be trained in the development of indicated prosthetic therapies in the field of reconstruction of endodontically treated teeth.		

Thematic units: (If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)	1. Anamnesis, clinical examination. 2. Changes in endodotically treated teeth. 3. Indications and contraindications. 4. Therapy plan. 5. Instruments. 6. Preparation of root canals of the intercanine region 7. Preparation of root canals of the transcanine region. 8. Impression methods. 9. Try in post core. 10. Adhesive cementation process. 11. Individual post and core. 12. Prefabricated posts. 13. Reconstruction of vertical dimension. 14. Selection of prosthetic restoration. 15. Discussion on the topic of previously processed units.
Learning outcomes:	Knowledge: - Acquire knowledge about changes in endodotically treated teeth and indications and contraindications for their care. - Know the instruments for preparation. - Know the types of post and cores, their advantages and disadvantages, as well as the types of materials from which the future restoration will be made. Skills: Student needs independently: - Take the anamnesis and do a clinical examination of the patient, analyze the X-ray and make a treatment plan. - Explain to the patient the type of possible therapy.
	- Handle equipment. - Select the appropriate preparation tool. - Prepare the root for the post and core. - Take the impression of a root canal. - Test the post and core. - Cement the post and core in the root canal. - Make adequate preparation of the tooth for the indicated prosthetic work. - Place the retraction cord (s) in the gingival sulcus and take adequate impressions, by classical and digital methods. - Take the register of intermaxillary relations independently. - Try in fixed prosthetic restoration in stages. - Cement prosthetic restoration, temporarily and permanently. - Remove prosthetic restoration. - Give instructions to the patient on the use of fixed prosthetic restoration. Competences: - Independently make and implement a plan of therapy for endodontically treated teeth by making adequate prosthetic restoration.

Teaching methods:	- lectures for all students - practical classes -exercises in groups according to the standard
Assessment methods with assessment structure:	Acquired knowledge and skills are tested continuously during the semester. In the structure of the total number of points, the student can achieve during the semester for activities and knowledge tests: - Activity on exercises - individual work with the patient - maximum 10 points, minimum 5,5 points - Partial exam in the 8th week of the 11th semester - maximum 40 points, minimum 22 points. - The final exam- maximum 50 points, minimum 27.5 points The partial exam is taken in the form of a test and can be awarded points only if the student achieves at least 55% of correct answers in exam. All the exam questions need not be awarded the equal number of points. The decision on the method of scoring questions from the test is made by subject teachers before the test is administered. The final exam consists of a practical and a theoretical part of the exam. The student takes the practical part of the exam in the 15th week of classes as part of clinical exercises. The condition for taking the oral test of theoretical knowledge of the final exam is passing the practical part of the exam. The passed practical part of the exam is valid for one academic year. A student who did not pass the partial knowledge test, takes the final exam integrally. The passing score level on the exam is 55%. In accordance with the above, the grade scale is as follows: - 10(A) - exceptional success without errors or with insignificant errors - 95-100 points - 9(B) - above average with few errors- 85-94 points; - 8 (C) - average with noticeable errors - 75 -84 points;
	- 7(D) - generally good but with significant errors- 65-74 points; - 6(E) - meets the minimum criteria - 55-64 points; - 5 (F, FX) – does not meet the minimum criteria, less than 55 points
Literature:	Mandatory: 1. Schillinburg TH, Hobo S, Whitsett l, Jacobi R. Osnove fiksne protetike 3 rd edition. Media ogled 2008. 2. Hargreaves KM, BermanLB. Cohen´s Pathways of the Pulp, 11. th edition, St Louis: Elsevier, 2016. Additional: 1. Rosenstiel S, Land F, Fujimoto J. Contemporary fixed prosthodontics. 3rd ed. Mosby inc. Publishing, 2001 2. Gurel G. Znanje i vještina u izradi estetskih keramičkih ljuski. Media-ogled d.o.o., Zagreb, 2009.

COURSE SYLLABUS: RECONSTRUCTION OF ENDODONTICALLY TREATED TEETH

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lectures, exercises)

Week 1.	Lectures: Anamnesis, clinical examination, radiological diagnostics, surgical, periodontal, conservative and orthodontic preparation in the making of fixed restorations. Exercises: Taking anamnestic data from the patient, clinical examination, fixed prosthetic therapy plan and X-ray diagnostics.	1 2
Week 2.	Lectures: Changes in endodotically treated teeth (structural changes, changes in the physical characteristics of dentin, aesthetic changes). Exercises: Preparation of root canals of the intercanine region.	1 2
Week 3.	Lectures: Indications and contraindications for the reconstruction of endodontically treated teeth Exercises: Preparation of root canals of the transcanine region.	1 2
Week 4.	Lectures: Therapy plan, choice of materials and types of restorations. Exercises: Choosing an impression tray, taking an impression for a post and core. Registration of intermaxillary relations with wax register and elastomers or with base plate rims.	1 2
Week 5.	Lectures: Instruments for root canal preparation. Exercises: Try in post and core. Selection of cements and cementation process.	1 2
Week 6.	Lectures: Preparation of root canals of the intercanine region. Exercises: Preparation of reconstructed teeth.	1 2
Week 7.	Lectures: Preparation of root canals of the transcanine region. Exercises: Gingival retraction.	1 2
Week 8.	Lectures: Impression methods. Exercises: Choosing a tray, taking impressions. Registration of intermaxillary relations with wax register and elastomers or with the help of bite rims.	1 2
Week 9.	Lectures: Try in of post and core. Selection of cements and cementation process. Exercises: Determining color by classical and digital methods.	1 2
Week 10.	Lectures: The process of adhesive cementing aesthetics posts and making the extraradicular part (core build-up). Exercises: Making and cementing an immediate crown by the direct method in the patient's mouth or temporary cementation of a temporary crown made in the laboratory.	1 2

Week 11.	Lectures: Post and core, advantages and disadvantages. Exercises: Test substructure for crowns.	1 2
Week 12.	Lectures: Prefabricated posts, advantages and disadvantages. Exercises: Restoration try in.	1 2
Week 13.	Lectures: Reconstruction of vertical dimension with post and cores. Exercises: Crown cementation procedure.	1 2
Week 14.	Lectures: Selection of prosthetic restoration on certain types of post and cores (post cores). Exercises: Removing existing crowns.	1 2
Week 15.	Lectures: Discussion on the topic of previously processed units. Exercises: The process of adhesive cementation of aesthetic prefabricated pins and making the extraradicular part of the core build-up.	1 2
Week 17.	Final exam	
Week 19.	Corrective exam	

Item code:SFSIS1107E	**Course Title: EMERGENCIES IN DENTISTRY**		
Cycle: integrated	**Year: VI**	**Semester: XI**	**Number of ECTS credits:**2
Status: elective		**Total number of hours: 30** Optionally develop the distribution of hours by type: **Lectures** 15 **Exercises** 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 6th year of study		
Aim (objectives) of the course:	Acquisition of basic knowledge and clinical skills in the field of emergency medicine Introduce students how to recognize signs of emerging or life-threatening Master the basic skills of early recognition and treatment of emergencies that may occur in the dental office		
Thematic units:(*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units will enable the student to master the planned goals in a way to get acquainted during the course with the most common emergencies that can occur in dentistry, their clinical picture and emergency therapeutic procedures, which is described in detail in the curriculum as a separate document		
Learning outcomes:	The student will be able to itemize the most common causes of emergencies in the dental office. In accordance with the anamnestic data of the patient, they will assess the risk of a certain emergency in the dental office and at the same time adjust the necessary dental therapy according to the possible risk They will successfully identify the clinical picture of individual emergencies and the procedures for their care.		

Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	Student can earn points in the following way: activity in lectures - 5 points, activity on exercises - 5 points knowledge test via test - in the 8th week - 40 points final exam - 50 points The maximum number of points is 100 The finalgrade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, 95-100 points. 9 (B) - above average, with some errors, 85-94 points 8 (C) - average, with noticeable errors, 75-84 points 7 (D) -generally good, but with significant shortcomings, 65-74 points. 6 (E) -satisfies the minimum criteria, 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 1. Petrović V, Gavrić M:Emergency in dentistry. Draganić, Beograd, 1995. 2. Šečić S., Ajanović M., Ahmić A., Zukić S., Zukanović A., Tosum S., Dervišević A. Dental aesteziology Sarajevo 2018. 4.Kućanski B, Sulejmanagić H, Mustagrudić D, Gojkov T. Oral surgry , I part, II edition, editor: Sulejmanagić H. Sarajevo: USBiH; 1998. 4.Sulejmanagić H.Infetions of dentogenic etiology. Sarajevo 2000 Supplementary: 1. F.M. Andreasen, J.O. Andreasen, L.K. Bakland, M.T. Flores Traumatic injuries of the teeth

Implementation plan of course Emergencies in dentistry

Week	Teaching and learning methods	Hours
Week 1.	Lecture: Importance and goal of studying emergency conditions. The role of dentists in resolving urgent medical conditions. Emergency prevention: history, patient preparation and premedication. Forensic responsibility of dentists in resolving emergencies. Standards, certified level of personnel and equipment for life-threatening situations. Exercises: Following teaching content of lectures	1 1
Week2.	Lecture: Urgent cardiovascular conditions: sinus bradycardia, sinus tachycardia, angina pectoris, hypertensive crisis, acute myocardial infarction. Initial treatment of acute myocardial infarction. Cardiopulmonary cerebral resuscitation in adults. Exercises: Following teaching content of lectures	1 1
Week3.	Lecture: Urgent respiratory conditions: laryngospasm, laryngeal edema, bronchospasm, airway obstruction. Foreign bodies in the upper respiratory tract. Treatment of acute asthma attacks, establishment, and maintenance of the airway Exercises: Following teaching content of lectures	1 1
Week 4.	Lecture: Diabetes mellitus, hypoglycemic shock, hyperglycemic crisis. Exercises: Following teaching content of lectures	1 1
Week 5.	Lecture: Disorders of consciousness in the dental office Exercises: Following teaching content of lectures	1 1

Week6.	Lecture: Toxic reaction to local anesthetics. Evaluation of the use of an adequate anesthetic, determination of the maximum dose of a local anesthetic. Exercises: Following teaching content of lectures	1 1
Week 7.	Lecture: Allergic reactions: systemic and local. Anaphylactic reaction and anaphylactic shock. Exercises: Following teaching content of lectures	1 1
Week8.	Lecture: Painful conditions: diagnosis, origin and characteristics of orofacial pain. Exercises: Following teaching content of lectures	1 1
Week9.	Bleeding: causes, types. Hemostasis: mechanical, chemical, biological and physical methods. Exercises: Following teaching content of lectures	1 1
Week 10.	The lectures are accompanied by lectures Lecture: Bleeding as a consequence of surgical interventions in the oral cavity. Bleeding as a result of soft and bone tissue injuries Exercises: Following teaching content of lectures	1 1
Week 11.	Lecture: Odontogenic infections: etiology, clinical picture, diagnosis and differential diagnosis. Acute dentogenic infection. Surgical treatment of dentogenic infection: principles of intraoral and extraoral incision, drainage. Therapeutic use of antibiotics. Choice of adequate antibiotic. Complications of dentogenic infection. Exercises: Following teaching content of lectures	1 1
Week 12.	Lecture: Injuries of the oral cavity, jaw and face: first aid for soft tissue injuries of the oral cavity. Exercises: Following teaching content of lectures	1 1
Week 13.	Lecture: Injuries of the oral cavity, jaw and face: first aid for injuries of teeth and jaws. Exercises: Following teaching content of lectures	1 1
Week 14.	Lecture: Urgent conditions during surgical therapy: (during the application of local anesthesia and tooth extraction, when performing an incision, when working with surgical instruments, complications during suturing, postoperative emergencies). Exercises: Following teaching content of lectures	1 1
Week 15.	Lecture: Urgent conditions during endodontic, periodontal and prosthetic dental therapy. Exercises: Following teaching content of lectures	1 1
Week 17.	Final exam	
Week 19.	Corrective exam	

Item code: SFSIS6113e	**Course Title: DENTAL PRINCIPLES FOR TREATMENT BY SYSTEMS**		
Cycle: integrated	**Year: VI**	**Semester: XI**	**Number of ECTS credits: 2**

Status: elective	**Total number of hours: 30** **Lectures** 15 **Exercises** 15
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject**
Prerequisite for enrolment:	All students enrolled in the 6th year of study
Aim (objectives) of the course:	The aim of the course is to educate the students of the Faculty of Dentistry about the diseases of certain organs, differential-diagnostic protocol and classification of dental treatments and principles for the treatment of diseases of individual organ systems.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. Classification of dental treatments of patients with diseases of individual organs 2. Dental principles for treatment of diseases of the cardio-vascular system 3. Dental principles for treatment of diseases of the respiratory system 4. Dental principles for treatment of diseases of the gastro-intestinal tract 5. Dental principles for treatment of diseases of the urinary tract and kidneys 6. Dental principles for treatment of erythropoesis and leukopoesis diseases 7. Therapy procedures for haemostasis disease 8. Dental principles for treatment of allergies 9. Dental principles for treatment of endocrine glands diseases 10. Dental principles for treatment of neurological and psychogenic diseases 11. Dental principles for treatment of orofacial and congenital diseases 12. Dental casuistics and principles for treatment of age-related diseases 13. Dental principles for treatment of venereal diseases 14. Dental principles for treatment of skin diseases 15. Dental principles of treatment of premalignant and malignant diseases
Learning outcomes:	Through the course "Dental principles for treatment by systems" the student is going to be able to comprehend and apply the classification of dental treatments of diseases of individual organ systems. They are going to adopt the knowledge about dental principles for treatment of diseases of cardiovascular, respiratory organs, gastrointestinal, urogenital tracts, kidney disease, blood, endocrine glands, skin diseases, neurological, psychogenic, congenital diseases, and they are also going to know dental casuistics and therapy principles for treatment of diseases related to age and malignancy.
Teaching methods:	The course is held: 1. lecture ex cathedra for all the students 2. practice
Assessment methods with assessment structure:	One of the forms of activity is lecture and practice attendance. The assessment of theoretical knowledge from the completed semester will be conducted in the written form – by means of a test. The total grade consists of: - regular lecture attendance - 5 points, - practice attendance – 5 points - active work in practice – 35 points, (in week 7, short test with three questions - 15 points and in week 15 a seminar paper of case presentation – 20 points), - final exam by means of a test – 55 points. Maximum number of points is 100.

	Evaluation and assessment of students' knowledge is going to be based on the following system: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points; 9 (B) - above average, with some errors, carries 85-94 points; 8 (C) - average, with noticeable errors, carries 75-84 points; 7 (D) -generally good, but with significant shortcomings, carries 65-74 points; 6 (E) -satisfies the minimum criteria, carries 55-64 points; 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 10. Berislav Topić, Dental practice and diseases of individual organ systems, Sarajevo-Zagreb, 2008. 11. Berislav Topić and assoc., Oral medicine, Sarajevo, 2001. Additional: 1. Ana Cekić, Oral medicine, Zagreb, 2005. 2. Dubravka Šimić, Diseases of the mucosa, Zagreb, 2012.

Implementation plan for the course Dental principles for treatment by systems

Week	Form of teaching and curriculum	Number of hours
Week 1	Lecture: Classification of dental treatments for patients with diseases of certain organs Practice: Classification of dental treatments for diseases of certain organ systems – practical approach	1 1
Week 2	Lecture: Dental principles for treatment of cardiovascular system diseases Practice: Classification of dental treatments for diseases of certain organ systems – practical approach	1 1
Week 3	Lecture: Dental principles for treatment of respiratory system diseases Practice: Teaching content follows lectures	1 1
Week 4	Lecture: Dental principles for treatment of gastrointestinal tract diseases Practice: Teaching content follows lectures	1 1
Week 5	Lecture: Dental principles for treatment of urinary tract and kidney diseases Practice: Teaching content follows lectures	1 1
Week 6	Lecture: Dental principles for treatment of erythropoiesis and leukopoiesis diseases Practice: Teaching content follows lectures	1 1
Week 7	Lecture: Therapeutic procedures in haemostasis disease Short test by means of a quiz	1 1
Week 8	Lecture: Dental principles for allergy treatment Practice: Teaching content follows lectures	1 1
Week 9	Lecture: Dental principles for treatment of endocrine gland diseases Practice: Teaching content follows lectures	1 1
Week 10	Lecture: Dental principles for treatment of neurological and psychogenic diseases Practice: Teaching content follows lectures	1 1
Week 11	Lecture: Dental principles for treatment of orofacial and congenital diseases Practice: Teaching content follows lectures	1 1
Week 12	Lecture: Dental casuistics and principles for treatment of age-related diseases Practice: Teaching content follows lectures	1 1
Week 13	Lecture: Dental principles for treatment of venereal diseases Practice: Teaching content follows lectures	1 1

Week 14	Lecture: Dental principles for treatment of skin diseases Practice: Teaching content follows lectures	1 1
Week 15	Lecture: Dental principles for treatment of premalignant and malignant diseases Seminar paper or case presentation	1 1
Week 17	Final exam (test)	
Week 19	Makeup exam date	

Item code: SFSIS1002	**Course Title: Presurgical Orthodontic Treatment**		
Cycle: Integrated	**Year: VI**	**Semester: XI**	**Number of ECTS credits: 4**
Status: Elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 6th year of study		
Aim (objectives) of the course:	The course aims to acquaint students with possibilities of the multidisciplinary treatment of orthodontic-surgical patients.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units were formed with the aim of teaching student basic information on multidisciplinary treatment of orthodontic-surgical cases. The teaching plan is given by the week in the attachment.		
Learning outcomes:	Knowledge: Describe the possibilities and indications of orthodontic - surgical therapy of impacted/retained teeth, multidisciplinary approach in the treatment of orofacial clefts; describe the possibilities and indications of orthodontic - surgical treatment of skeletal discrepancies. Skills: To be able to recognize indications for orthodontic surgical treatment. Competences: To be able to prepare the patient for orthodontic-surgical treatment; participate in multidisciplinary treatment of complex orthodontic anomalies.		
Teaching methods:	Interactive lectures Practical exercises		
Assessment methods with assessment structure[13]:	Students will take a partial exam, practical exam and final exam and will be continuously evaluated while working on the exercises. The partial exam is conducted during the semester, in written form in the 8th week, and is worth 30 points. Through continuous evaluation of work in practical sessions, along with the preparation of a seminar paper, a student can earn a maximum of 40 points. During the semester, based on the midterm exam and activities, a student can achieve a maximum of 70 points, which qualifies them to receive a grade of 7 without taking the final exam, unless they wish to achieve a higher grade. The final exam is		

[13] The structure of points and point criteria for each subject is determined by the council of the organizational unit before the beginning of the academic year in which the subject is taught following Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

	taken after the semester in written form and is worth a total of 30 points. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature[14]:	Required: 1. Tiro A, Nakaš E, Džemidžić V, Redžepagić – Vražalica L, Jelešković A. „Kompleksne ortodontske nepravilnosti“, Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu, 2020. 2. Nakaš E, Tiro A, Džemidžić V, Redžepagić-Vražalica L, Ajanović M. „Osnovi ortodontske dijagnostike“, Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu, 2014. 3. Marković N, Rakanović – Todić M, Burnazović – Ristić L, Arslanagić A, Tiro A, Džemidžić V. „Oralno zdravlje trudnica i dojenčadi – specifičnosti stomatološkog tretmana“, Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu, 2021. 4. Redžepagić – Vražalica L, Nakaš E, Tiro A, Džemidžić V, Jelešković A, Bajrić E. “Ortodontske nepravilnosti”, Sarajevo: Univerzitet u Sarajevu – Stomatološki fakultet sa stomatološkim kliničkim centrom, 2024. Supplementary: 1. Proffit WR, Fields HW, Sarver DM. Contemporary orthodontics, 4th edition. St. Louis: Mosby; 2006.

Teaching plan Presurgical Orthodontic Treatment

Week	Course form and content	Number of hours
Week 1.	Lecture: Introduction Practical exercises: They follow the lectures with teaching content	2 1
Week 2.	Lecture: Diagnostics procedures in orthodontic-surgery patients Practical exercises: They follow the lectures with teaching content	2 1
Week 3.	Lecture: Tooth retention/impaction Practical exercises: They follow the lectures with teaching content	2 1
Week 4.	Lecture: Tooth retention/impaction Practical exercises: They follow the lectures with teaching content	2 1
Week 5.	Lecture: Third molars extraction in orthodontics Practical exercises: They follow the lectures with teaching content	2 1
Week 6.	Lecture: Mini implants and mini plates in orthodontics Practical exercises: They follow the lectures with teaching content	2 1
Week 7.	Lecture: Classification and epidemiology of malocclusions Practical exercises: They follow the lectures with teaching content	2 1

[14] The Senate of the higher education institution as an institution or the council of the organizational unit of the higher education institution as a public institution determines mandatory and recommended textbooks and manuals, as well as other recommended literature based on which it prepares and takes the exam as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton

Week 8.	Lecture: Orthognathic Surgery Practical exercises: They follow the lectures with teaching content	2 1
Week 9.	Lecture: Pre-surgical orthodontics for orthognathic surgery of Class III malocclusion Practical exercises: They follow the lectures with teaching content	2 1
Week 10.	Lecture: Pre-surgical orthodontics for orthognathic surgery of Class II malocclusion discrepancy Practical exercises: They follow the lectures with teaching content	2 1
Week 11.	Lecture: Presurgical orthodontics for orthognathic surgery of vertical skeletal discrepancy Practical exercises: They follow the lectures with teaching content	2 1
Week 12.	Lecture: Presurgical orthodontics for orthognathic surgery of transversal skeletal discrepancy Practical exercises: They follow the lectures with teaching content	2 1
Week 13.	Lecture: Craniosynostosis Practical exercises: They follow the lectures with teaching content	2 1
Week 14.	Lecture: Surgical treatment of CLP (early and late) Practical exercises: They follow the lectures with teaching content	2 1
Week 15.	Lecture: Recapitulation Practical exercises: They follow the lectures with teaching content	2 1
Week 17.	Final exam	

Item code: SFSIS6114E	**Course Title: ENDODONTIC MANAGEMENT OF TEETH WITH COMPLEX MORPHOLOGY**		
Cycle: integrated	**Year: VI**	**Semester: XI**	**Number of ECTS credits:** 2
Status: elective		**Total number of hours: 30** **Lectures:** 15 **Exercises:** 15	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs**		
Prerequisite for enrollment:	All students enrolled in the 6th year of the study; For taking the Final exam, passing the exam Endodontics (5th year) is required.		
Aim (objectives) of the course:	The course aims to provide students with atypical forms of morphology of the root-canal system and to ensure greater competence of the future dentist in conducting endodontic therapy.		
Thematic units:	1. The Dental Operating Microscope in Endodontics 2. Variations in the Root Form and Root Canal Morphology of Molars 3. Endodontic Treatment of Calcified and Curved Root Canals		
Learning outcomes:	At the end of the course, students will be able to: - discuss the application of modern optical and radiographic devices in endodontic treatment, - explain variations in the morphology of the root canal system of each tooth type, - demonstrate knowledge of the internal and apical root anatomy of permanent teeth, and implications for endodontic treatment, - be able to recognize teeth with complicated morphology of the endodontic space.		

Teaching methods:	Classes will take place through: - Interactive lectures - Practical exercises - Consultations.
Assessment methods with assessment structure:	Acquired knowledge is assessed through partial exam and final exam, enrolled in written form. Every exam carries 50 points. The partial exam is performed during the semester and considered passed if the student has achieved a minimum of 28 points. The final exam is considered passed if contain a minimum 55% of correct answers. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature:	Required: 6. Versiani, M. A., Basrani, B., Sousa-Neto, M. D. (Eds.). The root canal anatomy in permanent dentition. Cham: Springer International Publishing. 2019. 7. De Deus G. Shaping for cleaning the root canals : a clinical based strategy. Springer Nature, 2021. 8. Vertucci FJ. Root canal morphology and its relationship to endodontic procedures. Endodontic topics. 2005;10(1):3-29. Additional: 1. Peters O.A. The Guidebook to Molar Endodontics Springer-Verlag Berlin Heidelberg. 2017.

A Course Syllabus Endodontic Management of Teeth with Complex Morphology

Week	Teaching and learning methods	Number of hours
Week 1.	6. Lecture: The Dental Operating Microscope in Endodontics 16. Practicals: Introductory class (introduction to the content of the course, the manner of conducting classes and exams, and the literature)	1 1
Week 2.	2. Lecture: Use of Cone-Beam Computed Tomography in Endodontics 17. Practicals: Nonsurgical endodontic treatment, a case-based discussion	1 1
Week 3.	3. Lecture: The Complexity of the Root Canal System and the Apical Region of the Root 3. Practicals: Nonsurgical endodontic treatment, a case-based discussion	1 1
Week 4.	4. Lecture: Vital and the Exposed Pulp Therapy for Permanent Molars 4. Practicals: Nonsurgical endodontic treatment, a case-based discussion	1 1
Week 5.	5. Lecture: Detecting the Presence of Multiple or Calcified Canals – Clinical Guidelines 5. Practicals: nehirurški endodontski tretman zuba, analiza slučaja	1 1
Week 6.	6. Lecture: Root Canal Instrumentation and Irrigation 6. Practicals: Nonsurgical endodontic treatment, a case-based discussion	1 1

Week 7.	7. Partial Exam	
Week 8.	8. Lecture: Abnormalities in the Length, Curving, or Angulation of Tooth Roots (long roots, dilaceration, S-shape) 8. Practicals: Nonsurgical endodontic treatment, a case-based discussion	1 1
Week 9.	8. Lecture: Endodontic Treatment of Calcified and Curved Root Canals 9. Practicals: Nonsurgical endodontic treatment, a case-based discussion	1 1
Week 10.	9. Lecture: Dens Invaginatus and Dens Evaginatus 9. Practicals: Nonsurgical endodontic treatment, a case-based discussion	1 1
Week 11.	10. Lecture: Taurodontism of Teeth 10. Practicals: Nonsurgical endodontic treatment, a case-based discussion	1 1
Week 12.	11. Lecture: Supernumerary Roots 11. Practicals: Nonsurgical endodontic treatment, a case-based discussion	1 1
Week 13.	12. Lecture: C-shaped Root Canal System 12. Practicals: Nonsurgical endodontic treatment, a case-based discussion	1 1
Week 14.	13. Lecture: External Cervical Resorption 13. Practicals: Nonsurgical endodontic treatment, a case-based discussion	1 1
Week 15.	14. Lecture: Interactive repetition 14. Practicals: Nonsurgical endodontic treatment, a case-based discussion	1 1
Sedmica 17.	Final Exam, Remedial Exam	
Sedmica 19.	Remedial Exam	

Item code: SFSIS1108	**Course Title: Fixed Orthodontics**		
Cycle: Integrated	**Year: VI**	**Semester: XI**	**Number of ECTS credits: 4**
Status: Elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 2 (30) **Exercises** 1 (15)	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]		
Prerequisite for enrollment:	All students enrolled in the 6th year of study		
Aim (objectives) of the course:	The course aims to acquaint students with different fixed orthodontic appliances and their possibilities.		
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Thematic units were formed with the aim that the student learns the basic parts of fixed orthodontic appliances and biomechanics of the fixed appliances. The teaching plan is given by the week in the attachment.		
Learning outcomes:	Knowledge: The student will be able to list and describe parts of fixed orthodontic appliances; describe different fixed orthodontic techniques and materials used in fixed orthodontic techniques.		

	Skills: Recognize different types of fixed orthodontic appliances; identify complications and side effects of fixed orthodontic therapy. Competences: To be able to manage orthodontic emergency patients.
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure[15]:	Students will take a partial exam, practical exam and final exam and will be continuously evaluated while working on the exercises. The partial exam is conducted during the semester, in written form in the 8th week and is worth 30 points. Through continuous evaluation of work in practical sessions, along with the preparation of a seminar paper, a student can earn a maximum of 40 points. During the semester, based on the midterm exam and overall activity, a student can achieve up to 70 points, thereby meeting the requirements to receive a grade of 7 without taking the final exam, unless they wish to obtain a higher grade. The final exam is taken after the end of the semester in written form and is worth a total of 30 points. The final grade is formed based on points won and according to the scale of points: 10 (A) - exceptional success, without mistakes or with minor mistakes, carries 95-100 points. 9 (B) - above average, with some errors, carries 85-94 points 8 (C) - average, with noticeable errors, carries 75-84 points 7 (D) -generally good, but with significant shortcomings, carries 65-74 points. 6 (E) -satisfies the minimum criteria, carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature[16]:	Required: 1. Demirović D. Osnovi fiksne tehnike u ortodonciji, Sarajevo, 2005. 2. Nakaš E, Tiro A, Džemidžić V, Redžepagić-Vražalica L, Ajanović M. „Osnovi ortodontske dijagnostike“, Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu, 2014. 3. Tiro A, Nakaš E, Džemidžić V, Redžepagić – Vražalica L, Jelešković A. „Kompleksne ortodontske nepravilnosti“, Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu, 2020. 4. Redžepagić – Vražalica L, Nakaš E, Tiro A, Džemidžić V, Jelešković A, Bajrić E. “Ortodontske nepravilnosti”, Sarajevo: Univerzitet u Sarajevu – Stomatološki fakultet sa stomatološkim kliničkim centrom, 2024. Supplementary: 1. Karađinović D. Osnovi fiksne ortodoncije, Beograd 2. Proffit WR, Fields HW, Sarver DM. Contemporary orthodontics, 4th edition. St. Louis: Mosby

[15] The structure of points and point criteria for each subject is determined by the council of the organizational unit before the beginning of the academic year in which the subject is taught following Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

[16] The Senate of the higher education institution as an institution or the council of the organizational unit of the higher education institution as a public institution determines mandatory and recommended textbooks and manuals, as well as other recommended literature based on which it prepares and takes the exam as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton

Teaching plan Fixed Orthodontics

Week	Course form and content	Number of hours
Week 1.	Lecture: Introduction Practical exercises: They follow the lectures with teaching content	2 1
Week 2.	Lecture: History of fixed orthodontic appliances Practical exercises: They follow the lectures with teaching content	2 1
Week 3.	Lecture: Orthodontic diagnosis and orthodontic treatment planning Practical exercises: They follow the lectures with teaching content	2 1
Week 4.	Lecture: Biomechanics of fixed orthodontic appliances Practical exercises: They follow the lectures with teaching content	2 1
Week 5.	Lecture: Materials in fixed orthodontics Practical exercises: They follow the lectures with teaching content	2 1
Week 6.	Lecture: Elements (parts) of fixed orthodontic appliances Practical exercises: They follow the lectures with teaching content	2 1
Week 7.	Lecture: Different techniques of fixed orthodontic appliances - Tweed, Roth, MBT, segmental techniques Practical exercises: They follow the lectures with teaching content	2 1
Week 8.	Lecture: Different techniques of fixed orthodontic appliances - self-ligating techniques Practical exercises: They follow the lectures with teaching content	2 1
Week 9.	Lecture: Different techniques of fixed orthodontic appliances - lingual techniques Practical exercises: They follow the lectures with teaching content	2 1
Week 10.	Lecture: Stages in fixed orthodontics appliances therapy Practical exercises: They follow the lectures with teaching content	2 1
Week 11.	Lecture: Complications and side effects of fixed orthodontic treatment Practical exercises: They follow the lectures with teaching content	2 1
Week 12.	Lecture: Orthodontic treatment in a periodontally compromised patients Practical exercises: They follow the lectures with teaching content	2 1
Week 13.	Lecture: Fixed orthodontic treatment of medically compromised patients Practical exercises: They follow the lectures with teaching content	2 1
Week 14.	Lecture: Possibilities and limitations of fixed orthodontic therapy Practical exercises: They follow the lectures with teaching content	2 1
Week 15.	Lecture: Recapitulation Practical exercises: They follow the lectures with teaching content	2 1
Week 17.	Final exam	

Item code: SFSIS1109E	**Course Title: AMBULANTAL ORAL AND MAXILLOFACIAL SURGERY**		
Cycle: integrated	**Year: VI**	**Semester:XI**	**Number of ECTS credits:** 2
Status: Elective		**Total number of hours: 45** Optionally develop the distribution of hours by type: **Lectures** 1 (15) **Exercises** 2 (30)	

Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** [**do not enter names in this section. Leave the wording as indicated in this section**]
Prerequisite for enrollment:	All students enrolled in the 6 year of study
Aim (objectives) of the course:	Introducing students with the meaning of outpatient surgery and gaining basic insights from various forms or operational procedures that are performed. Acquiring practical knowledge and performance of certain operating techniques performed ambulatory in local anesthesia.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Surgical topography of the head and neck, Significance of outpatient surgery, Division of operational procedures within ambulatory procedures in local anesthesia, Probatory biopsy, Elliptical excision of skin and mucous membranes overcoming the defect by direct sutures, An incision of abscess in the mouth area of the mouth, oral cavities and extraoral regions, Ambulatory surgery on oral mucous membranes- in general, Ambulatory surgery on bone tissues of the upper and lower jaws- in general, Post-operative follow-up (overcoming pain therapy and antimicrobial therapy), Analysis of postoperative results, Drainage systems in ambulatory surgery, Necessary diagnostic procedures in outpatient care surgery, Necessary laboratory analysis in outpatient clinics surgery, Specificity of outpatient surgery in chronic patients: - cardiovascular diseases, blood disorders, hepatitis, specific diseases , Intra and postoperative complications in outpatient surgery / diagnosis and therapy method /
Learning outcomes:	After completing classes, students must: To master basic theoretical insights of outpatient surgery To master the basic surgical skills of outpatient surgery Conceive the postoperative monitoring of outpatient patients
Teaching methods:	Interactive lectures Practical exercises
Assessment methods with assessment structure:	The exam is written in a text form containing 10 questions. For a transient grade it is necessary that 60% of the answer is correct. Each test period is compiled with new tests, divided into groups A, B, and C. The final exam represents 50% of the final grade. The regular attendance at the lesson is 50% of the final grade. Upon completion of the semester, a
	student can earn a maximum of 100 points. According to the above, the scale rating is as follows:> 50 points- 10 (A) -experienced success without error or with minor mistakes, bears 91-100 points; 9 (B) - above the average, with some mistake, it is 81-90points; 8 (C) - average, with noticeable errors, bears 71-80 points; 7 (D) - generally good, but with significant defects,wears 61-70; 6 (E) - meets minimum criteria, bears 51-60 points; 5 (F) -not meets minimum criteria, less than 55points.
Literature:	Required: 1. Textbook of Oral and Maxillofacial Surgery, Neelima Anil Malik. Publication date 01 Aug 2016. Publisher Jaypee Brothers Medical Publishers. 2. Oral and Maxillofacial Diseases, Fourth Edition, Crispian Scully, Stephen Flint, Published June 15, 2010. Publisher INFORMA,London.

Week	Teaching and learning methods	Course load
Week 1.	Lecture: Surgical topography of the head and neck Practicals:	1 2
Week 2.	Lecture: Significance of outpatient surgery Practicals:	1 2
Week 3.	Lecture: Division of operational procedures within ambulatory procedures in local anesthesia Practicals:	1 2
Week 4.	Lecture: Probatory biopsy Practicals:	1 2
Week 5.	Lecture: Elliptical excision of skin and mucous membranes overcoming the defect by direct sutures Practicals:	1 2
Week 6.	Lecture: An incision of abscess in the mouth area of the mouth, oral cavities and extraoral regions Practicals:	1 2
Week 7.	Lecture: Ambulatory surgery on oral mucous membranes- in general Practicals:	1 2
Week 8.	Lecture Ambulatory surgery on bone tissues of the upper and lower jaws-in general Practicals:	1 2
Week 9.	Lecture: Post-operative follow-up (overcoming pain therapy and antimicrobial therapy) Practicals:	1 2
Week 10.	Lecture: Analysis of postoperative results Practicals:	1 2
Week 11.	Lectures: Drainage systems in ambulatory surgery Practicals:	1 2
Week 12.	Lectures: Necessary diagnostic procedures in outpatient care surgery Practials:	1 2
Week 13.	Lecture: Necessary laboratory analysis in outpatient clinics surgery Practicals:	1 2
Week 14.	Lecture: Specificity of outpatient surgery in chronic patients: -cardiovascular diseases, blood disorders, hepatitis, specific diseases Practicals:	1 2
Week 15.	Lecture: Intra and postoperative complications in outpatient surgery / diagnosis and therapy method/ Practicals:	1 2
Week 17.	Final exam, Corrective exam period.	