UNIVERSITY OF SARAJEVO

FACULTY OF DENTISTRY WITH CLINICS

CURRICULUM OF INTEGRATED STUDY PROGRAM

I – XII SEMESTER

Sarajevo, 2022.

First year

Subject code	Compulsory courses I semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSOM1011E	Human anatomy 1	30	30			60			6
SFSOM1012E	Histology and embryology 1	30	30			60			5
SFSOM0103E	Medical biochemistry	60	30			90			9
SFSOM0104E	Human genetics and cell biology	45	0			45			5
SFSOS1015E	Dental morphology with dental anthropology 1	30	15			45	4	1	5
	Compulsory courses I semester								
SFSOM1021E	Human anatomy 2			45	45	90			7
SFSOM1022E	Histology and embryology 2			30	30	60			5
SFSOS1023E	Dental morphology with dental anthropology 2			15	15	30			3
	Elective courses II semester								
	Elective course 2.1					45			5
	Elective course 2.2					45			5
	Elective course 2.3					45			5
	Total number of classes and ECTS credits					**615**			**60**

Subject code	Elective courses II semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIS0106E	Introduction to dentistry with history of dentistry and ethics			30	15	45			5
SFSIO0203E	Health informatics			30	15	45			5
SFSIM0107E	Introduction to experiment and laboratory			30	15	45			5
SFSIM0204E	Biomechanics in dentistry			30	15	45			5
SFSIS1024E	Biology of human teeth			30	15	45			5
SFSIM0202E	Hygiene and social medicine			15	30	45			5

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			5
SFSOS0304E	Dental materials	45	0			45			5
SFSOS2032E	Cariesology	15	0			15			2
	Elective courses III semester								
	Elective course 3.1					45			5
	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
	Elective courses IV semester								
	Elective course 4.1					45			5
	Total number of classes and ECTS credits					**675**			**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			5
SFSIS0404E	Legal aspects of dental practice	30	15			45			5

Subject code	Elective courses IV semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIS0406E	Management in dentistry			30	15	45			5
SFSIO0405E	Data processing in dentistry			30	15	45			5

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	15	60			75			5
SFSOM0503E	Internal medicine	45	60			105			8
SFSOM0504E	Basics of radiology	45	30			75			4
SFSOS3052E	Preclinical restorative dentistry 1	15	30			45			4
	Elective courses V semester								
	Elective course 5.1					45			5
	Compulsory courses VI semester								
SFSOS3061E	Preclinical and laboratory fixed prosthodontics			15	45	60			4
SFSOS3062E	Preclinical restorative dentistry 2			15	30	45			4
SFSOM0601E	Surgery			45	45	90			9
SFSOS0506E	Dental anesthesiology			30	15	45	4	1	5
SFSOM3063E	Dermatovenerology			15	15	30			3
	Elective courses VI semester								
	Elective course 6.1					45			5
	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			5
SFSIS0603E	Public health	30	15			45			5
SFSIS3054E	Oral hygiene	15	30			45			5

Subject code	Elective courses VI semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIS3064E	Complex restorations			15	30	45			5
SFSIM0604E	Infectious diseases			30	15	45			5
SFSIM0602E	Ophthalmology			30	15	45			5

Fouth year

Subject code	Compulsory courses VII and VIII semester	L	P	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	75	30	75	210	12	2	14
SFSOS0704E	Oral medicine - pathology	15	30	30	30	105	7	2	9
SFSIS0707E	Dental radiology	30	15			45			5
SFSOS0705E	Preclinical endodontics (VIII semester)			15	30	45	4	1	5
	Elective courses VII semester								
	Elective course 7.1					45			5
	Elective courses VIII semester								
	Elective course 8.1					45			5
	Total number of classes and ECTS credits					**780**			**60**

Subject code		Elective courses VII semester	L	P	L	P
SFSIS0801E		Prophylaxis of oral diseases	15	15		
SFSIS0706E		Orofacial pain	15	15		
SFSIS4071E		Oral health care in pregnancy	15	15		

Subject code	Elective courses VIII semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIM0708E	Pediatrics			15	15	30			4
SFSIS4081E	Modern techniques in endodontics			15	15	30			4
SFSIS4082E	Pharmacological protocols in oral medicine and periodontology			15	15	30			4

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	75	15	75	195	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
SFSOM1102E	Otorhinolaryngology (IX semester)	15	15			30			4
SFSOS5101E	Clinical orthodontics (X semester)			30	30	60	3	1	4
	Elective courses IX semester								
	Elective course 9.1					30 (45)			4
	Elective course 9.2					30 (45)			4
	Elective courses X semester								
	Elective course 10.1					30 (45)			4
	Total number of classes and ECTS credits					**780 (825)**			**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			4
SFSIS0906E	Dental care of persons with disabilities	15	30			45			4
SFSIS0907E	Epidemiology of diseases of the periodontium	15	15			30			4
SFSIS0908E	Clinical gnathology	15	30			45			4

Subject code	Elective courses X semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSIS5102E	Gerontostomatology			15	15	30			4
SFSIS5103E	Interceptive orthodontics			30	15	45			4
SFSIS1001E	Traumatic dental injuries in children and adolescents			15	15	30			4
SFSIS5104E	Temporomandibular disorder			15	15	30			4

Sixth year

Subject code	Compulsory courses XI and XII semester	L	P	L	P	Classes total	T	Pr	ECTS
SFSOS1101E	Maxillofacial surgery	30	30	30	30	120	5	2	**7**
SFSOS1105E	Dental implants	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**
SFSOS1201E	Final Course I: Restorative Dentistry – Prosthetic Dentistry (XII semester)			30	30	165	7	1	**8**
SFSOS1202E	Pedodontics 2 (XII semester)			30	45	75	4	1	**5**
SFSOS1203E	Graduate Thesis (XII semester)								**10**
	Elective courses XI semester								
	Elective course 11.1					30 (45)			
	Total number of classes and ECTS credits					**720 (735)**			**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			4
SFSIS1107E	Emergencies in dentistry	15	15			30			4
SFSIS6113E	Dental principles of treatment by systems	15	15			30			4
SFSIS1002E	Presurgical orthodontic treatment	30	15			45			4
SFSIS6114E	Endodontic management of teeth with complex morphology	15	15			30			4
SFSIS1108E	Fixed orthodontics	30	15			45			4
SFSIS1109E	Ambulantal oral and maxillofacial surgery	15	30			45			4

L – lessons, P – practice, T – theory, Pr – practical lessons

FIRST YEAR OF STUDY

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[1]:	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[2]:	Required: 1.Kulenović A, Kapur E, Voljevica A. Lokomotorni sistem (univerzitetski udžbenik), DES, Sarajevo, 2008. 2.Perović D. Anatomija čovjeka I i II, Glas Medicinara, Sarajevo, 1965.

[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**

[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**

	3.Topografske regije ljudskog tijela, Medicinski fakultet Sarajevo, Štamparija Fojnica, 2012. ANATOMSKI ATLASI 1.Sobotta J. Atlas anatomije čovjeka, Slap, Jastrebarsko, 2001. 2.Netter F. Atlas anatomije čovjeka, Data status, Beograd, 2004. Additional: Krmpotić Nemanić J, Marušić A. Anatomija čovjeka, Medicinska naklada, Zagreb, 2004..

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 Practicals: Skull as a whole, division and composition, frontal bone, parietal bone	2 2
Week 2.	Lecture: occipital bone, sphenoid bone Practicals: occipital bone, sphenoid bone	2 2
Week 3.	Lecture: temporal bone, canals in temporal bone, tympanic cavity Practicals: temporal bone, canals in temporal bone, tympanic cavity	2 2
Week 4.	Lecture: ethmoid bone, cranial cavity (division, cranial base, anterior, middle and posterior cranial fossa, calvaria), fontanelle Practicals: ethmoid bone, cranial cavity (division, cranial base, anterior, middle and posterior cranial fossa, calvaria), fontanelle	2 2
Week 5.	Lecture: maxilla, palatine bone, zygomatic bone, nasal bone, vomer, inferior nasal concha, lacrimal bone Practicals: maxilla, palatine bone, zygomatic bone,nasal bone, vomer, inferior nasal concha, lacrimal bone.	2 2
Week 6.	Lecture: Mandible, hyoid bone, craniofacial cavities 2 (nasal and orbital cavity, temporal fossa, infratemporal fossa, pterygopalatine fossa) Practicals: Mandible, hyoid bone, craniofacial cavities 2 (nasal and orbital cavity, temporal fossa, infratemporal fossa, pterygopalatine fossa)	2 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,	2 2

	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.	
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) **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 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: (*If necessary, the performance plan is determined by taking into account the specifics of organizational 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 exercises - interactive learning
Assessment methods with assessment structure[3]:	During the exercises, a continuous check of the acquired knowledge and accompanying skills is performed. In the interactive classes, unannounced testing (once a semester) of independently acquired knowledge is performed on an inquiry. The final exam in the course is done in writing in the form of an essay (theoretical part), and the practical part - processing two histological specimens, one electron micrograph and recognizing three elements of blood (on demonstration specimens of peripheral blood smears). The student must meet a minimum of theoretical and practical part to pass the exam. The final grade is formed based on points won and according to the scale of 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**

	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[4]:	Required: 1. Nikolić RI. i saradnici. Osnovna i oralna histologija i embriologija. 3. izdanje. Data status, Beograd, 2019. 2. Mornjaković Z. i saradnici. Praktikum za vježbe iz Histologije 1. Univerzitet u Sarajevu, 2011. 3. Sadler TW. Langmanova medicinska embriologija. Prevod američkog izdanja knjige "Langman's medical embryology", 10th ed. Izdavač: Školska knjiga, Zagreb, 2009. Additional: 1.Junqueira LC. i Carneiro J. Osnovi histologije. Prevod sa engleskog jezika jedanaestog izdanja knjige "Basic Histology". Izdavač: Data status, 2005. Beograd. 2.Mornjaković Z. i saradnici. Signirani fotomikrografi histoloških preparata tkiva s komentarom. Univerzitet u Sarajevu, Medicinski fakultet, Sarajevo, 2014. 3. Mornjaković Z. i saradnici: Signirani fotomikrografi histoloških preparata organa s komentarom. Univerzitet u Sarajevu, Medicinski fakultet, Sarajevo, 2015.

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 exercises : 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. Practical exercises: Cell shape - spherical cell shape (light microscopy = LM), pyramidal cell shape (LM)	2 2
Week 3.	Lecture: 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.	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**

	Practical exercises: Plasmalemma - cell membrane (TEM = transmission electron microscopy), microvilli (TEM)	2
Week 4.	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 exercises: Membrane bounded organelles - lysosome (TEM), endosome (TEM), peroxisome (TEM)	2 2
Week 5.	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 exercises : Membrane bounded organelles - rough and smooth endoplasmic reticulum (TEM), rough endoplasmic reticulum (LM – indirectly), smooth endoplasmic reticulum (LM – indirectly)	2 2
Week 6.	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 exercises: Membrane bounded organelles - Golgi apparatus (TEM), glandular cell (thyroid gland – LM and TEM), mitochondria (TEM)	2 2
Week 7.	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 exercises: Cytosol, cell inclusions and cytoskeleton - lipid droplets (LM), pigment in the cytosol (LM), actin filaments (TEM), microtubules (TEM), cilia (TEM)	2 2
Week 8.	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 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 exercises: 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 exercises: 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	2

	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 exercises: Supportive connective tissue - hyaline cartilage (LM), elastic cartilage (LM), compact bone (LM), endochondral ossification (LM), osteocyte (TEM)	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 exercises: 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 exercises: 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 exercises: 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.	partial exam	
Week 17.	Final exam, Corrective exam period.	

Item code: SFSOM0103E	**Course Title: Medicinal Biochemistry**		
Cycle: integrated	**Year: I**	**Semester: I**	**Number of ECTS credits:** 9
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:	All students enrolled in the 1th year of study		
Aim (objectives) of the course:	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
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	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
Learning outcomes:	Konwledge: Students will know the basic structural characteristics and functions of biomolecules, the basic principles of metabolic processes and their importance. 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[5]:	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[6]:	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.

[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**

	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.

Medicinal biochemistry – weekly plan of lectures and practivals

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.	2 2 2
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: Solutions. Osmosis, diffusion, filtration, dialysis, hemolysis. Biological methods for the determination of osmotic pressure.	2 2 3
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: Calculatons in chemistry: preparation of solutions, calculatinf concentrations of solutions.	2 2 2
4	Lecture: Oxidative phosphorylation, creation and storage of metabolic energy Lecture: Carbohydrates - biomedical significance and basic representatives Practicals: Calculations of osmotic pressure.	2 2 2
5	Lecture: Digestion and carbohydrate resorption. Lecture: Glycolysis - pathway, energy balance. Practicals: Combined calculations.	2 2 2
6	Lecture: glycogenolysis, oxidative decarboxylation of pyruvates. 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: Carbohydrates. Redox reactions of monosaacharides. Polysaccahrides (starch, celulose).	2 2 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	2 2

	Practicals: Amino acid reactions; Kastle – Mayer test for hemoglobin detection.	2
8	Lecture: Nitrogen metabolism. EXAM1 Practicals: Protein precipitation. Urin protein analysis. Electrophoresis of serum proteins (theoretical part).	2 2 3
9	Lecture: Special products that arise from metabolism of amino acids Lecture: Proteins. Structure. Serum proteins. Practicals: Lipids. Reactions for cholesterol and bile salt detection.	2 2 2
10	Lecture: Chromoproteids - hemoglobin, myoglobin, cytochromes Lecture: Chromoprotein metabolism; synthesis and degradation of heme; bile color formation (icterus) Practicals: Spectrophotometry. Lambert-Beerov law.	2 2 2
11	Lecture: Immunochemical reactions. Antibodies. Antigens. Lecture: Vitamins: function, sources, metabolism, hypovitaminosis. Practicals: Some examples of applied spectrophotometry: glucose quantification using enzymatic methods; determination of serum creatinine and urea concentrations.	2 2 2
12	Lecture: Nucleic acids, structure and functions; protein synthesis; genetic mutations Practicals: Some examples of applied spectrophotometry: determination of total protein content using Biuret method; cholesterol quantification using the cholesterol-oxidase method, quantification of serum LDL concentration	4 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: Enzyme activity. Pepsine activity. Fermentative hydrolysis of urea.	2 2 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.	2 2 2
15	Lecture: Biochemical characteristics of dental tissues (cement, dentin and enamel); Biochemical characteristics of the gingiva. EXAM 2	2 2
17	Final exam	
19	Final retake exam	

Code: SFSOM0104E	**COURSE TITLE: HUMAN GENETICS AND CELL BIOLOGY**		
Level: undergraduate	**Year: I**	**Semester: I**	**ECTS credits: 5**
Course status: compulsory		**Total classes: 45** Lectures 45 Excercise Seminars Lab work	

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.	<u>Partial exam I</u>	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),	3

	- allelic gene interaction - monogenic inheritance: (dominant, recessive, intermediate, pseudoautosomal, co-dominant - examples). Epigenetics.	
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. Free combination of genes, genetic maps.	3
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: 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 into account the specifics of organizational units):	Thematic units were formed with the aim that the student learns the basics of recognizing the characteristics of deciduous and permanent 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[7]:	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.

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

Literature[8]:	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. Practical exercise: The stomatognathic system. Description of dental organ, tooth groups, dental arches, and dentition.	2 1
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

[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**

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	

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. The condition for taking the final exam in human anatomy 2 is passing the human anatomy 1.		
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*	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.		

account the specifics of organizational units)	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[9]:	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.

[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**

	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[10]:	Required: 1.Kulenović A, Kapur E, Voljevica A. Lokomotorni sistem (univerzitetski udžbenik), DES, Sarajevo, 2008. 2.Perović D. Anatomija čovjeka I i II, Glas Medicinara, Sarajevo, 1965. 3.Topografske regije ljudskog tijela, Medicinski fakultet Sarajevo, Štamparija Fojnica, 2012. ANATOMSKI ATLASI 1.Sobotta J. Atlas anatomije čovjeka, Slap, Jastrebarsko, 2001. 2.Netter F. Atlas anatomije čovjeka, Data status, Beograd, 2004. Additional: Krmpotić Nemanić J, Marušić A. Anatomija čovjeka, Medicinska naklada, Zagreb, 2004..

Course syllabus Human Anatomy 2

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.	3

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	Practicals: Submandibular, carotid and retromandibular 4 region (boundaries, topography, muscles, blood vessels, nerves, lymph)	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, 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	3 3
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 **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 first year of study. The condition for taking the final exam in Histology and Embryology 2 is passing Histology and Embryology 1.
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: (*If necessary, the performance plan is determined by taking into account the specifics of organizational 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, Histology of immune system, Endocrine glands and reproductive system, Histology and embryology of the nervous system, Histology and embryology of the skin and sense organs
Learning outcomes:	During lectures, interactive classes and exercises 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 cytological and 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): microscopy blood smear preparations with immersion lens, analyze and interpret electron micrographs, independently draw cytological and histological specimens, independently mark structural parts on drawings of histological specimens of organs and embryos and correctly interpret observed morphological structures formed organs and organs during development. Skills that the student should know (knows how): histotechnological procedures for making preparations for the level of available histological techniques and basic methods. After completing the course, the student should adopt the following attitudes: correct observation of cytological and histological specimens is a prerequisite for good analysis. Good analysis of specimens is a prerequisite for good knowledge of its structure, normal structure and function of cells and tissues is a necessary prerequisite for a better understanding of a number of disorders.
Teaching methods:	- lectures - practical exercises - interactive learning
Assessment methods with assessment structure[11]:	During the exercises, a continuous check of the acquired knowledge and accompanying skills is performed. In the interactive classes, unannounced testing (once a semester) of independently acquired knowledge is performed on an inquiry. The final exam in the course is done in writing in the form of an essay (theoretical part), and the practical part - processing two histological specimens, one electron micrograph and recognizing three elements of blood (on demonstration specimens of peripheral blood smears). The student must meet a minimum of theoretical and practical part to pass the 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[12]:	Required: 1. Nikolić RI. i saradnici. Osnovna i oralna histologija i embriologija. 3. izdanje. Data status, Beograd, 2019. 2.Mornjaković Z. i saradnici. Praktikum za vježbe iz Histologije 1. Univerzitet u Sarajevu, 2011. 3. Mornjaković Z. i saradnici. Praktikum za vježbe iz Histologije 2 i embriologije. Univerzitet u Sarajevu, 2011.

[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] **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**

	4. Sadler TW. Langmanova medicinska embriologija. Prevod američkog izdanja knjige "Langman's medical embryology", 10th ed. Izdavač: Školska knjiga, Zagreb, 2009. Additional: 1.Junqueira LC. i Carneiro J. Osnovi histologije. Prevod sa engleskog jezika jedanaestog izdanja knjige "Basic Histology". Izdavač: Data status, 2005. Beograd. 2.Mornjaković Z. i saradnici. Signirani fotomikrografi histoloških preparata tkiva s komentarom. Univerzitet u Sarajevu, Medicinski fakultet, Sarajevo, 2014. 3. Mornjaković Z. i saradnici: Signirani fotomikrografi histoloških preparata organa s komentarom. Univerzitet u Sarajevu, Medicinski fakultet, Sarajevo, 2015.

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 exercises : 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 exercises: 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 exercises: 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 exercises: 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 exercises : 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.	2 2

	Practical exercises: parotid gland (LM), mixed salivary gland (LM), liver (LM, TEM, SEM), pancreas (LM)	
Week 7.	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 exercises: elastic artery (LM), muscular artery (LM), vein (LM), capillaries (TEM)	2 2
Week 8.	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. Practical exercises: olfactory mucosa (LM), trachea (LM), epiglottis (LM), lung (LM, TEM, SEM)	2 2
Week 9.	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. Practical exercises: kidney (LM), filtration membrane (TEM), ureter (LM), bladder (LM)	2 2
Week 10.	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 exercises: palatine tonsil (LM), lymph node (LM), spleen (LM), thymus (LM)	2 2
Week 11.	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. Practical exercises: pituitary gland (LM), thyroid gland (LM, TEM), parathyroid gland (LM), adrenal gland (LM), enteroendocrine cell (TEM)	2 2
Week 12.	Lecture: Development of endocrine glands and reproductive system. Development of the pituitary gland, epiphysis, thyroid gland, parathyroid glands, ultimobranchial body, adrenal gland, thymus. Indifferent stage and differentiation during the development of gonads, genital ducts and external genitalia. Practical exercises: endocrine glands development (scheme, LM), fetal gonads (LM)	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 exercises: 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 exercises: skin and derivatives (LM), retina (LM), lacrimal gland (LM) – sample, eye development (LM) – sample, organ of Corti (LM) – sample	2 2
Week 15.	partial exam	
Week 17.	Final exam. Corrective exam period.	

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[13]:	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

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	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[14]:	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

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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. Exercises: Observation and drawing of light microscopic and electron microscopic preparations of dental pulp from digital photographs.	1 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 and ethics**		
Level: integrated	**Year: I**	**Semester: I**	**No ECTS credits:** 5
Status: Elective		Total classes: 45 Lectures 2 (30) Practical exercise 1 (15)	

Teaching participant	**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**]
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 Introducing students to the ethical principles of the dental profession Introducing students to the history of the dentistry profession and famous names in the history of 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; ethical principles of the dental profession and the consequences of non-compliance. 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: Master the ethical principles important for the dental profession. Understand career development and lifelong learning opportunities Competences: Be able to apply ethical and deontological principles in everyday dental practice
Teaching methods	Interactive lectures Practical exercises
Assessment methods with mark structure[15]:	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

[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**

	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[16]:	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

Teaching plan of the course Introduction to dentistry with history of dentistry and ethic

Week	Form of teaching and lectures	Hours
Week 1.	Lecture: Introductory remarks on the course. Definition of dentistry and its position in medicine and society. Motivation to study. Method of organization of dental medicine studies (teaching, scientific research, and professional work). The importance of knowing the history of dentistry. Prehistoric times Exercises: Motivation to study dentistry	2 1
Week 2.	Lecture: Medicine of the Ancient Nations: Mesopotamia, Ancient Jews, Egypt, Phoenicians Exercises: Instructions for writing a seminar paper, searching for reference data sources and selection of information	2 1
Week 3.	Lecture: Medicine of Ancient nations: Greece, Rome, Etruscans; Medicine of Oriental nations: China, Japan, India Exercises: Paleo-odontology	2 1
Week 4.	Lecture: Middle Ages: monastic and scholastic medicine; Arabic medicine Exercises: The influence of monastic and Arabic medicine on the development of medicine and dentistry in Bosnia and Herzegovina and the region.	2 1
Week 5.	Lecture: Medicine and dentistry in the Renaissance and Baroque periods; Dentistry in the era of rationalism and in the industrial age Exercises: Historical overview of the development of dental equipment and instruments.	2 1
Week 6.	Lecture: Historical development of medicine and dentistry in Bosnia and Herzegovina. Exercises: Questions for self-evaluation	2 1
Week 7.	Lecture: Organization of dental care (primary, secondary and tertiary). Oral health as part of overall health. Preventive-promotional and curative aspect of oral health. Exercises: Examples of promotional campaigns	2 1
Week 8.	Lecture: Guidelines for the development of dental practice recommended by WHO and FDI; Duties and tasks of a dentist - guidelines in education and basic competencies of the future dentist. Interdisciplinary cooperation in the field of diagnosis and therapy of oral diseases. Professional training of dentists and specialist fields of dentistry. Exercises: Analysis of training opportunities for dentists	2 1
Week 9.	Lecture: Dental office, equipment and tools. Dental team. Disinfection and sterilization Exercises: Visit to the dental office	2 1

[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 the mandatory and recommended textbooks and manuals, as well as other recommended literature based on which prepares and takes the exams as per Article 56, paragraph 3, of the Law on Higher Education of Sarajevo Canton.

Week 10.	Lecture: Access to information and its use regarding educational, clinical, scientific, and practical application. Magazines, publications, databases. Professional associations, national and international (US FBiH, KL / DS FBiH, WHO, FDI, BaSS, WMA, IDEALS, etc) Exercises: Searching databases	2 1
Week 11.	Lecture: Medical ethics and bioethics, medical deontology - general concepts and development through history; medical oaths - the Hippocratic Oath and the Geneva formulation of the Hippocratic Oath, the F. Nightingale Oath. Codes of medical ethics. Basic and derived principles of medical ethics Exercises: Questions for self-evaluation	2 1
Week 12.	Lecture: Basic ethical principles of the doctor-patient relationship. Patients' right to information, autonomy, confidentiality, the highest level of dental care. Doctor-patient communication skills. Patient's consent to treatment (informed, written, implied) Ethical attitude of the doctor towards the patient, towards colleagues, members of the dental team, towards himself, towards the social community and the patient's family. Medical secret - unauthorized disclosure of medical secret, legal responsibility of the doctor Exercises Personal Data Protection and Examples of Informed Consent	2 1
Week 13.	Lecture: Medical law - positive aspects of medical law. The moral character of the doctor, the ethical attitude of the doctor towards himself, his profession and society. Great medical ethical issues of modern medicine. Euthanasia (active, passive and social). Medical error in medicine and dentistry - Medical negligence Exercises: Vitium artis in dental practice-examples	2 1
Week 14.	Lecture: Experiments on humans (therapeutic, biological). Declaration of Helsinki. Good clinical practice - ethical and scientific standard of clinical trials. Voluntary consent of an informed patient. Responsibility of researchers. Independent Ethics Committee, its composition and tasks. Exercises: Questions for self-evaluation	2 1
Week 15.	Lecture: Ethical dilemmas in everyday dental practice (local anaesthesia, performing unnecessary treatments, denial of treatment, ...). Ethical problems of private dental practice (ethical aspect of profit, self-advertising, business competition, duality labour). Ethical problems in a health institution, control of work in health care. Exercises: Discussion of examples from practice	2 1
Week 17.	Final exam	
Week 19.	Corrective exam	

Subject number: SFSIO0203E	**Subject name: Health informatics**		
Level: undergraduate	**Year: II**	**Semester: II**	**ECTS points:** 5
Status: elective		**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
Teaching participants:	Teachers and assistants selected in the field to which the subject belongs
Requirement for student enrollment:	
Subject goal (goals):	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.
Thematic units: *(If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)*	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 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[17]:	
Literature[18]:	**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: I**	**Number of ECTS credits: 5**
Status: obligatory		**Total number of hours 45** Optionally develop the distribution of hours by type: **Lectures** **Exercises**	

[17] Scoring system and definition of 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 in accordance with Article 64, paragraph 6 of the Higher Education Law of Canton Sarajevo.

[18] 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 on which it prepares the exam in accordance with Article 56, paragraph 3 of the Higher Education Law of the Canton Sarajevo.

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[19]:	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[20]:	lectures handouts

[19] **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**

[20] **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 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: SFSIM0204E	**Course Title: Biomechanics in Dentistry**		
Cycle: integrated	**Year: I**	**Semester: II**	**Number of ECTS credits:** 5
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:	-		
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[21]:	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[22]:	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

[21] **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**

[22] **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 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	

Item code: SFSIS1024E	**Course Title: Biology of Human Teeth**		
Cycle: integrated	**Year: I**	**Semestar: II**	**Number of ECTS credits:** 5
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[23]:	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.

[23] **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[24]:	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. Practice: Histological specimens of carious lesions	2 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

[24] **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**

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: SFSIM0202E	**Course Title: Hygiene and social medicine**		
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** **Exercises**	
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[25]:	Students' knowledge will be tested continuously during the semester and as a final exam. Continuous testing will be conducted on the basis of work tasks, active participation.

[25] **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**

	The practical exam will consist of two parts: MCQ test (multiple choice questions) and ERQ test (essay questions). The final exam will consist of two parts: the MCQ test (multiple choice questions) and the ERQ test (essay questions). The participation of certain forms of knowledge testing is as follows: Attendance, work tasks, active participation in classes: 30 points Practical exam: 30 points Final exam: 40 points. 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[26]:	1. Frumkin H. Environmental Health: From Global to Local. San Francisco: Jossey-Bass; 2010. 2. Zhang C. Fundamentals of Environmental Sampling and Analysis. 3. Hoboken, NJ: John Wiley & Sons; 2007. 4. Roberts M, Hsiao W, Berman P, Reich M. Getting health reform right. The World Washington: Bank Institute and Harvard School of Public Health; 2001. 5. Robinson J, Elkan R. Health Needs Assessment. UK: Churchill Livingstone; 2002. 6. 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 and social medicine

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"	

[26] **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 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	
19.	Final exam-retake	

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

<table>
<tr><td></td><td>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. Summed muscular contractions. Relationship between the length and muscle tension. The Frank-Starling law. Muscle tonus.
- Registration and analysis of ECG
- Auscultation of heart sounds. Pulse testing. FCG
- Measurement of arterial blood pressure.
- Counting of RBC. Determination of hemoglobin. Determination of blood groups. Hematological indices. Sedimentation of RBC.
- Determination of bleeding time. Determination of time of coagulation. Determination of the Rh-factor. Counting of WBC. Differential blood count.
- Static spirometry (pulmonary volumes and capacities). Spirogram analysis.
- Energy and intensity of metabolism. Balance of food intake.
- Determination of thermolability of ptyalin.</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)

Colloquium I (physiology of the blood)

Colloquium II (Physiology of the cardiovascular system and physiology of respiration)</td><td>ECTS points

10 (minimum 6 points to pass)

10 (minimum 6 points to pass)</td></tr>
<tr><td>Partial exam I (general physiology, muscle phsiology, physiology of the blood and immunology)</td><td>40 (minimum 21 points to pass)</td></tr>
</table>
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<tr><td></td><td>
<table>
<tr><td>Partial exam II (physiology of respiration, physiology of the cardiovascular system and physiology of the alimentary tract)</td><td>40 (minimum 21 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. Farid Ljuca. Praktikum iz fiziologije. OFF-SET, Tuzla, 2018.</td></tr>
</table>

Izvedbeni plan predmeta Mikrobiologija i Imunologija

Sedmica	Oblik nastave i gradiva	Broj sati
Sedmica 1.	Predavanje: Uvod u mikrobiologiju. Građa, morfologija bakterija. Vježbe : Nastavnim sadržajem prate predavanja	4 2
Sedmica 2.	Predavanje: Gram pozitivne i Gram negativne bakterije. Aerobne i anaerobne bakterije. Sporogene i asporogene bakterije. Vježbe: Nastavnim sadržajem prate predavanja	4 2
Sedmica 3.	Predavanje: Genetika bakterija i bakterijski plazmidi. Molekularni osnov rezistencije bakterija na antibiotike. Vježbe: Nastavnim sadržajem prate predavanja	4 2
Sedmica 4.	Predavanje: Bakterijska flora usne duplje. Klinički značajne bakterije (Haemophilus influenzae, Neisseria gonoreae, Chlamydia trachomatis, Helicobacter pylori) Vježbe : Nastavnim sadržajem prate predavanja	4 2
Sedmica 5.	Predavanje: Uvod u imunologiju i hematopoeza ćelija imunog sistema.Organi i tkiva imunog sistema. Ćelije imunog sistema (B limfociti, T limfociti, makrofagi, dendritske ćelije,NK I NKT ćelije) Molekule prepoznavanja imunog sistema. Vježbe: Nastavnim sadržajem prate predavanja	4 2

[27] **Senatvisokoškolskeustanovekaoustanoveodnosnovijece organizacionejedinicevisokoškolskeustanovekaojavne ustanove, utvrdujeobavezne i preporučeneudžbenike i priručnike, kao i drugupreporucenuliteraturunaosnovukoje se priprema i polažeispitposebnomodlukomkoju obaveznoobjavljujenasvojoj internet straniciprijepočetka studijskegodine u skladu sa članom 56. st 3. Zakona o visokomobrazovanju Kantona Sarajevo**

Sedmica 6.	Predavanje: Urođena I stečena imunost. Humoralni i celularni imunitet. Cirkulirajuće i fiksirane IgG molekule. IgG klase i subklase i IgG subklasne imunodeficijencije. Vježbe: Nastavnim sadržajem prate predavanja	4 2
Sedmica 7.	Predavanje: BCR I TCR receptorski nastavci. MHC molekule klase I i II. Vježbe: Nastavnim sadržajem prate predavanja	4 2
Sedmica 8.	Predavanje: Antigen prezentirajuće ćelije. Egzogeni I endogeni put prezentacije antigena MHC molekulama. Komplement sistem i komplement imunodeficijencije. Vježbe: Nastavnim sadržajem prate predavanja	4 2
Sedmica 9.	Predavanje: Antitjela i autoantitjela. Autoimunost i autoimuna oboljenja I molekularni osnov njihove indukcije. Genski osnov autotolerancije. Vježbe: Nastavnim sadržajem prate predavanja	4 2
Sedmica 10.	Predavanje: DMARDovi i Biološki lijekovi u terapiji autoimunih oboljenja. Personalizirana molekularna imunologija i reumatologija Vježbe: Nastavnim sadržajem prate predavanja	4 2
Sedmica 11.	Predavanje: Klinički značajni paraziti. Osnove medicinske mikologije I gljivična oboljenja usne duplje (Candida, Cryptococcus, Aspergillus, Penicillium) Vježbe: Nastavnim sadržajem prate predavanja	4 2
Sedmica 12.	Predavanje: : Uvod u virusologiju. DNA i RNA virusi i njihov infektivni ciklus. Vježbe: Nastavnim sadržajem prate predavanja	4 2
Sedmica 13.	Predavanje: Opća virusologija. Klinički značajni DNA i RNA virusi. Emergentni i reemergentni virusi (COVID 19 virus, Influenza virus). Onkogeni virusi. Retrovirusi i Pararetrovirusi. Vježbe: Nastavnim sadržajem prate predavanja	4 2
Sedmica 14.	Predavanje: Molekularna genetika klinički značajnih virusa. Virusne infekcije usne šupljine. HSV-1, HSV-2, CMV, EBV, HBV, HCV, HIV, HPV. Vježbe: Nastavnim sadržajem prate predavanja	4 2
Sedmica 15.	Predavanje: Hipervarijabilnost RNA virusa I teškoće prilikom dizajniranja odgovarajućih vakcina. Ribozimi. Prionii prionske bolesti. Vježbe: Nastavnim sadržajem prate predavanja	4 2
Sedmica 17.	Završni ispit, Popravni ispitni rok	
Sedmica 19.	Popravni ispitni rok	

Šifra predmeta: Code: SFSOM0303E	**COURSE TITLE: MICROBIOLOGY AND IMMUNOLOGY**		
Level: undergraduate	**Year: II**	**Semester: III**	**ECTS credits:** 6
Course status: compulsory		**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. 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.
Learning outcomes:	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)

<table>
<tr><td></td><td>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[28]:</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>
</table>

<table>
<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[29] :</td><td>Mandatory literature

Bešlagić E et al (2010): Medical microbiology. Faculty of Medicine Sarajevo.
Zvizdić Š (2009): Virology. Faculty of Medicine Sarajevo.
Karamehić, J and Dizdarević Z.(2007). Clinical immunology. Svjetlost Sarajevo.</td></tr>
</table>

[28] The structure of points and point criteria for each teaching subject is determined by the council of the organizational unit before the beginning of the academic year in which the teaching subject realizes in accordance with article 64, paragraph 6 of the Sarajevo Canton Higher Education Low.

[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 on the basis of which it prepares and takes the exam. In accordance with Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton Higher Education Low.

	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:** 5
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; 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[30]:	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.

[30] **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[31]:	Required: 1.Pine C., Harris R.: „COMMUNITY ORAL HEALTH“, Quintessence Publishing, UK Catalogue, 2007

[31] **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	Teaching plan Public oral health 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: 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 Practice: Design of oral health survey for the specific region in Bosnia and Herzegovina using available data.	2 2
Week 3.	Lectures: Public oral health programs (planning, funding, program evaluation, participants). 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: Strategies for the improvement of oral health, the levels of prevention and the differences between the three levels of prevention. 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 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: Organization of oral health care system in the world. Models of organizing oral health care worldwide. 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: Organization of oral health care system in Bosnia and Herzegovina. Models of organization. Practice: The development of public oral health programs for the region, based on the data obtained from simulated epidemiological studies.	2 2
Week a 8.	Lectures: Quality control and improvement in oral health care	2

	Practice: The development of public oral health programs for the region, based on the data obtained from simulated epidemiological studies.	2
Week 9.	Lectures: The principles of evidence-based dentistry Practice: Evaluation of dental health care based on epidemiological parameters obtained from simulated epidemiological studies	2 2
Week 10.	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 11.	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 12.	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 13	Lectures: Financing of oral health. Economic aspect of health and illness. Health financing models. Practice: Introduction to the types of scientific literature in the field of oral health. Searching the literature and different databases.	2 2
Week 14.	Lectures: Institutions, health services, professional associations and their role in public oral health Practice: Analyze and evaluation of scholarly publications.	2 2
Week 15.	Lectures: Legislative in health care and dental care Practice: Legislative analyze related to health care	2 2
Week 16.	Final exam	
Week 17.-20.	Final exam/retake	

Item code: SFSOS0304E	**Course Title: DENTAL MATERIALS**		
Cycle: Integrated study	**Year: II**	**Semester: III**	**Number of ECTS Credits: 5**
Status: Obligatory		**Total number of hours: 45 (45+0)** **Lectures** 45 **Exercises** 0	
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:	- Mastering 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. 2. Physical properties of dental materials. 3. Standards for dental materials. Biocompatibility of dental materials. 4. Impression materials. 5. Materials and methods for making of working cast. Materials for making restoration models - dental waxes. 6. Dental investment materials. 7. Metallic materials 8. Dental ceramics. 9. Polymers in Dentistry. 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.
Learning outcomes:	Knowledge: - The student will fully master the knowledge of physical, - chemical and biological properties of dental materials. - The student acquires knowledge about all groups of dental materials, their composition, structure and application of materials. - Acquires knowledge about biocompatibility of dental materials and standards of dental materials. Skills: - Proper selection and purposeful use of specific dental material - Assessment of quality and safety of dental materials - The student can critically evaluate and compare commercially offered dental - materials
Teaching methods:	Lecture
Assessment methods with assessment structure[32]:	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 - Seminar paper on a given topic - maximum 10 points - Partial exam - maximum 30 points - Final exam - maximum 50 points The final exam is taken in the form of a test that is compiled for each examination period divided into groups A, B (if necessary C, D). The final

[32] 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

	exam 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 is made by the subject teachers before the test. A student can score a maximum of 100 points. 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; f) 5(F,FX) - does not meet the minimum criteria, less than 55 points.
Literature[33]:	**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 – III SEMESTER

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lectures, exercises, independent practice)
Week 1.	Lecture: Introduction to the necessity of studying dental materials. Historical review of dental materials.	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	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.	3

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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.	3
Week 6.	Lecture: Dental investment materials. - division and chemical composition. Physico-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 paladijsrebra) i neplemenitih (Cr-Co-Mo, Ti, čelici) legura u stomatologiji	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.	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 milling materials.	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.	Lecrure: 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. Physico-chemical 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.	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[34]:	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[35]:	Required: 1. Fejerskov O, Kidd E. Zubni karijes: Bolest i klinički postupci. Naklada Slap, 2011.

[34] **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**

[35] **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**

	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)	10
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)** - Clearance - Acid-base equilibrium-assessment of efficiency of physiological mechanisms in the compensation of acidosis disorders.		

<table>
<tr><td></td><td>- 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.
- Visus
- Proving the existence of a blind spot (Marriott test).
- Ophtalmoscopy
- 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
- Testing of effect of direct current on excitable tissues.
- Flüger's low.</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) 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.</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)

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

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

10 (minimum 6 points to pass)

10 (minimum 6 points to pass)</td></tr>
<tr><td>Partial exam I (physiology of the kidney and body fluids and physiology of endocrine glands)</td><td>40 (minimum 21 points to pass)</td></tr>
<tr><td>Partial exam II (Neurophysiology and physiology of special senses)</td><td>40 (minimum 21 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>
</table>
</td></tr>
</table>

	84-93 nine (9) B 94-100 ten (10) A
Literature[36]:	**Obligatory**: 1. Arthur C. Guyton, John E. Hall: Medical physiology, 14th edition. Medicinska naklada, Zagreb 2021. 2. Farid Ljuca. Praktikum iz fiziologije. OFF-SET, Tuzla, 2018.

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** Optionally develop the distribution of hours by type: **Lectures 60** **Exercises 30** Seminar Field work Laboratory exercises Praxis Concert activities	
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).		

[36]**Senatvisokoškolskeustanovekaoustanoveodnosnovijece organizacionejedinicevisokoškolskeustanovekaojavne ustanove, utvrdujeobavezne i preporučeneudžbenike i priručnike, kao i drugupreporucenuliteraturunaosnovukoje se priprema i polažeispitposebnomodlukomkoju obaveznoobjavljujenasvojoj internet straniciprijepočetka studijskegodine u skladu sa članom 56. st 3. Zakona o visokomobrazovanju Kantona Sarajevo**

	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[1]:	The pathology exam is oral. At the oral exam, the student draws a card with questions that are divided into 2 categories (general and special pathology, two questions from each category). The student should orally demonstrate basic knowledge from all parts of the material he / she has extracted in order for his / her answer to be considered satisfactory. Final exam grades: A = grade 6 (six) B = grade 7 (seven) C = grade 8 (eight) D = grade 9 (nine) E = grade 10 (ten)
Literature[2]:	**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:45** 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[37]:	**First partial exam** This exam is in written form, and consists of 20 MCQ questions. The number of points is multiplied by 1.5, so that the student can score a maximum of 30 points. The exam is passed if the student achieves 55% of the correct answers. 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. A student who has passed both partial exams does not have to take the final exam. In case that one of partial

[37] **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**

	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 a total of 50 exam questions in a form of MCQ test (two parts, one of 20 questions from the first three modules and another one of 30 questions from the modules 4-10). The number of points is multiplied by 1.5 so the student can have a maximum of 75 points. The 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 continuously during the semester through three colloquiums: Colloquium 1 – Functional examination of the cardiovascular system Colloquium 2 – Hematology Colloquium 3 – Respiratory and uropoetic system The total number of points that can be achieved is 25, where colloquiums 1 and 2 are valued by 10 points, and the colloquium 3 by 5 points. The colloquium is considered passed if the student has achieved a minimum of 55% of points (for the first and second colloquium 5.5 points, and for the third, 2.7 points). Final exam: students who did not passed some of the colloquium during the regular course period have to do it through the final exam, where student must score 55% of the maximum number of points for each of the taken colloquiums, in order that the practical exam will be considered as passed. 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[38]:	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.

[38] **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	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**	**Broj ECTS kredita: 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 (L) for all students

	- practical exercises - written exercises
Assessment methods with assessment structure[39]:	Acquired knowledge and skills are tested continually during the course Within the total point score: - maximum 10% of points is envisaged for activities during exercise - maximum 40 % of points for the partial exam (As a rule, the partial exam is given in a written form and taken in the week 8. of the semester.) and - maximum 50 % of points for the final exam The final exam consists of a practical and theoretical (in a written form) part of the exam. The condition for taking the final exam test is passing the practical part of the final exam. Tests for partial and final exam are compiled for each exam term. Students sit the exam divided into A and B groups (if necessary, into C and D groups). The final exam 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. Decision on point scoring is made by the course leader before the exam. 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 [40]:	Required: - Ajanović M. i sar. Osnovi gnatologije. Stomatološki fakultet s klinikama Univerziteta u Sarajevu. Sarajevo, 2015. - Okeson JP. Management of Temporomandibular Disorders and Occlusion. 5th Edition Mosby Elsevier, 2005. - Dos Santos J, Occlusion- Principles & Concepts. Ishiyaku EuroAmerica, 1996. Recommended: - Dos Santos J, Occlusion- Principles & Treatment. 1st Edition Quintessence 2007.

GNATHOLOGY COURSE SCHEDULE

[39] 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

[40] 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	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 gnathologic perspective Craniomandibular joint connection (ATM) – anatomic and functional specifics of joint in relation to gnathologic 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 gnathologic 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 anathomy of occlusal surfaces, interrelationship of the maxillary and mandibular dental arches at maximum intercuspation, periodontal organ from gnathologic 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, bucco lingual relationship), centric occlusal contacts.	1 2

Week 10.	Lecture: Antropomorfic model, position of the head in space, coordinate system and cefalometrics: 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 masticulatory 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. 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 gnathologic casts in the articulator.	1 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, 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; adjustment of articular and incisal guide on a semi-adjustable articulator by means of protrusion registrate (laterotrusion); demonstration in articulators	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 according to P.K. Tomas	1 2

Item code: SFSIS2033E	**Course title: Dental propaedeutics and diagnostic protocol**		
Cycle: integrated	**Year: II**	**Semester: III**	**ECTS credits:** 5
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[41]:	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[42]:	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.

[41] **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**

[42] **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 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: SFSIS0404E	**Course Title: Legal aspects of dental practice**

Cycle: integrated	**Year: II**	**Semester: III**	**Number of ECTS credits:** 5
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[43]:	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[44]:	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		

[43] **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**

[44] **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**

	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: 5**
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[45]:	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.		

[45] **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, and carries 55-64 points. 5 (F) - does not meet the minimum criteria, less than 55 points.
Literature[46]:	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

[46] **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 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:5**
Status: obligatory		**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[47]:	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[48]:	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	

[47] **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**

[48] **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 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	
Week 16.	Practical testing of knowledge through practical problem solving with the help of computers and testing of knowledge from theoretical foundations	
17-20.		

THIRD YEAR OF STUDY

Course code: SFSOM0505E	**Course title: PHARMACOLOGY**		
Cycle: Undergraduate	**Year: III**	**Semester: V**	**Number of ECTS credits: 4**
Status: Compulsory		**Total number of hours: 75** Optionally develop the distribution of hours by type: Lectures: 45 hours Exercises: 30 hours	
Teaching participants	Professors and associates selected in the field to which the subject belongs / subject		
Prerequisite for enrollment:	Conditions for attending classes according to the Rulebook on attending classes in the first cycle of studies at the University of Sarajevo		
Course objective (s):	The aim is to teach students the general principles of pharmacology, and the basic characteristics of drugs used in the treatment of infections, malignancies, allergies, autoimmune diseases, diseases of the autonomic nervous system, central nervous system, cardiovascular system, blood, respiratory system, gastrointestinal system , the endocrine system, and the basic principles of drug selection. Within toxicology, the goal of teaching is to acquaint students with the problem of substance abuse, and to acquire knowledge about the characteristics and treatment of the most common poisonings.		
Thematic units: *(If necessary, the performance plan is determined by weeks, taking into account the specifics of organizational units)*	LECTURES - THEORETICAL TEACHING: Thematic unit 1: GENERAL PHARMACOLOGY: Objective: to get acquainted with the concept of medicine, general principles of pharmacology, basics of pharmacodynamics and pharmacokinetics. Thematic unit 2: CHEMOTHERAPY Objective: to get acquainted with drugs in the treatment of infections and malignant diseases. Thematic unit 3: PHARMACOLOGY OF THE VEGETATIVE NERVOUS SYSTEM Objective: to get acquainted with drugs that act on the autonomic nervous system: cholinomimetics and cholinolytics, adrenomimetics and adrenolytics. Thematic unit 4: PHARMACOLOGY OF THE CENTRAL NERVOUS SYSTEM Objective: to get acquainted 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, antiparkinsonians. Thematic unit 5: IMMUNOPHARMACOLOGY Objective: to acquaint students with drugs in the treatment of allergic and autoimmune diseases. Thematic unit 6: TOXICOLOGY Objective: to get acquainted with the problems of abuse of drugs and other psychoactive substances, drug overdose, and the most common poisonings. Thematic unit 7: PHARMACOLOGY OF THE RESPIRATORY SYSTEM Objective: to acquaint students with the 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, arrhythmia, hypertension and hypotension, and in the treatment of myocardial ischemia. Thematic unit 9: PHARMACOLOGY OF THE BLOOD Objective: to acquaint students with drugs used in sideropenic anemia, or drugs that act on blood coagulation. Thematic unit 10: PHARMACOLOGY OF THE GASTROINTESTINAL SYSTEM Objective: to acquaint students with drugs used in the treatment of ulcers, nausea, and disorders of intestinal peristalsis. Thematic unit 11: PHARMACOLOGY OF THE ENDOCRINE SYSTEM Objective: to acquaint students with hormones as drugs, and drugs used in diseases of the adrenal glands, thyroid gland, in the treatment of diabetes mellitus, and with basic methods of contraception, and the risks of drugs in special populations. PRACTICAL CLASSES - EXERCISES: Thematic unit 1: Legal provisions on medicines Objective: to acquaint students with the legal provisions on the trade, prescribing and dispensing of medicines, poisons and narcotics, and with the basic sources of information about medicines. Thematic unit 2: Pharmacography Objective: to acquaint students with the basic pharmacographic rules of prescribing and issuing prescriptions for various 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 L-drug selection Thematic unit 5: Choice of L drug for different conditions Objective: to acquaint the student with the method of choosing an L-drug for the most common conditions in practice Thematic unit 6: Treatment of anaphylactic shock Objective: to acquaint the student with the symptoms and prevention of anaphylactic shock, as well as its treatment Thematic unit 7: Overdose and overdose treatments Objective: to acquaint students with the recognition of symptoms of poisoning, care measures and treatment of overdose for various conditions.
Learning outcomes:	Knowledge: The student will have the basis of knowledge necessary for mastering the material from clinical subjects, as well as for practical work. Acquisition of knowledge and skills of prescribing various pharmaceutical forms.

	Skills: Analyze the therapy available today for individual diseases of organic systems. Connect the effects of different drugs and assess their possible interaction. Anticipate and recommend ways to avoid side effects and interactions Competences: Application of professional knowledge and skills in counseling on rational pharmacotherapy; Selection of therapy and prescription; Informing and advising patients on pharmacological action and proper use of drugs; Monitoring the course and outcome of therapy; Recognition of clinically significant drug interactions and their prevention; Report adverse drug reactions.
Teaching methods:	1. Lectures 2. Exercises 3. Seminar
Assessment methods with assessment structure:	ASSESSMENT METHODS: The knowledge assessment is planned through 2 colloquia, 2 partial exams and a final exam. Passed colloquia and partial exams are a condition for taking the final exam. Knowledge test structure and scoring: • Partial exam I - Written test and consists of 20 MCQ questions. - The correct answer to the question is only if the student completes only the correct statements. - The maximum number of points is 20. The exam is passed if the student achieves 55% of correct answers. - It is taken in the 7th week of classes • Partial exam II - Written test and consists of 20 MCQ questions. - The correct answer to the question is only if the student completes only the correct statements. - The maximum number of points is 20. The exam is passed if the student achieves 55% of correct answers. - It is taken in the 15th week of classes • Seminar paper - During the attendance of the teaching process, students are nominated for the topics of seminar papers - The total number of points that students can achieve through seminar work is a total of 5 points. • Final exam - It is taken as an oral exam and the maximum number of points is 25. - A student who has passed both partial exams and both colloquia can take the oral exam. - If a student has passed only one partial exam at the final exam, he / she takes the part of the exam that he / she did not pass and if he / she satisfies then he / she takes the oral exam. - A student who has not passed any partial exam at the final exam has a total of 40 exam questions by type of MCQ question. The correct

	answers to the question are if the student completes the correct statements. The final exam consists of two parts, depending on the subject matter, Part I of 20 questions from modules 1-6, and the second part of 20 questions includes questions from modules 7-11, and the student must have from both parts 55% correct answers. If the student satisfies the access to the oral exam. - A student who does not pass both parts of the final exam at 55% will not be recognized only one part of the exam at the final exam. - Students who are not satisfied with the number of points won during the continuous examination of knowledge through partial exams can also take the final exam. • Repeated exam • It is taken in the same way as the final exam is defined. PRACTICAL PART EXAM Checking the acquired skills through practical exercises will be done continuously during the semester through two colloquia: • Colloquium I • It is taken in writing and consists of the teaching units "Legal provisions in prescribing drugs" and "Pharmacography". • The maximum number of points is 15, and the colloquium is passed if the student achieves 55% of correct answers. • It is taken in 8 weeks of classes after the mentioned teaching units have been processed • Colloquium II - It is taken in writing and consists of the teaching units "Rational Pharmacotherapy" and "Overdose". - The maximum number of points is 15, and the colloquium is passed if the student achieves 55% of correct answers. - It is taken in the 15th week of classes after the mentioned teaching units have been processed • Final exam: - Only students who have passed the complete practical exam can take the final exam. - If students have not passed both colloquia, they cannot take the final / oral exam. - At the final exam from each previously failed colloquium, the student must achieve 55% of the maximum number of points. If a 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. - Repeated exam: if the student has not passed the practical and partial part of the exam during the semester and the final exam, he / she will pass the failed exams at the repeated exam. The condition for taking the final part of the repeated exam is the previously passed practical part of the exam.

	After successfully winning the minimum or higher number of points for each segment of the test, the final grade from the course 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:	Comoulsory: • Rang i Dale. Farmakologija, 8. izdanje, Data status, 2019. • Farmakologija za stomatologe, Linčir I. Medicinska naklada, Zagreb, 2011. • Farmakološki priručnik za studente stomatologije. Kusturica J, Rakanović-Todić M. Medicinski fakultet Univerziteta u Sarajevu, 2011. Supplementary: • Opšta i specijalna farmakologija. Kapić E, Kusturica J. Visoka zdravstvena škola, Sarajevo, 2007.

Course performance plan 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, drug side effects). Exercises: Drug definition, drug development; sources of drug information. Legal provisions on trade, prescribing and dispensing of drugs, poisons, narcotics.	3 2
Week 2.	Lecture: Pharmacokinetics of drugs (absorption, transport of drugs, distribution, metabolism and elimination) Chemotherapy (Antiinfectives, Penicillins and cephalosporins, Aminoglycosides, Chloramphenicol, Tetracyclines). Exercises: Parts and content of the recipe. Pharmacography - tablets and capsules	3 2
Week 3.	Lecture: Macrolides, Sulfonamides, Quinolones, Antifungal drugs, Antiviral drugs, Amebicidal drugs. Chemotherapy of malignant diseases. Exercises: Pharmacography - suppositories, enemas, injections and infusions	3 2
Week 4.	Lecture: Pharmacology of the autonomic nervous system. Cholinomimetics and cholinolytics. Adrenomimetics and adrenolytics. Seminar: Antiseptics and disinfectants in dentistry. Exercises: Pharmacography - solutions and drops for internal use	3 2
Week 5.	Lecture: Opioid analgesics. Anxiolytics, sedatives, hypnotics. Seminar: General Anesthetics, Local Anesthetics Exercises: Pharmacography - solutions and drops for external use	3 2
Week 6.	Lecture: Antipsychotics, Antidepressants, Antiepileptics, Antiparkinsonians. Seminar: Analgesics-antipyretics. Non-steroidal anti-inflammatory drugs. Exercises: Pharmacography - powders for internal and external use.	3 2

Week 7.	Partial exam I. Lecture: Pharmacology of the respiratory system. Oxygen therapy. Expectorants. Bronchodilators. Cough medicines. Exercises: Pharmacography - ointments, pastes. Pharmacography - Inhalations.	3 2
Week 8.	Lecture: Immunopharmacology. Immunosuppressants. Immunostimulants, H1 antihistamines Exercises: Colloquium I. Factors affecting the action of drugs (drug doses, doses for children, special conditions, therapeutic breadth)	3 2
Week 9.	Lecture: Toxicology. Psychoactive substance abuse. Caffeine, nicotine, alcohol. Metal poisoning. Toxins that pollute the human environment. Exercises: Basic principles of rational pharmacotherapy. The principle of L-drug selection.	3 2
Week 10.	Lecture: Pharmacology of the cardiovascular system. Drugs in the treatment of heart failure. Seminar: Drug overdose Exercises: Selection of an L-drug for certain painful conditions	3 2
Week 11.	Lecture: Antiarrhythmic drugs. Antihypertensive drugs. Drugs for the treatment of myocardial ischemia Exercises: Selection of an L-drug in the treatment of infections in the oral cavity	3 2
Week 12.	Lecture: Blood Pharmacology. Antienemics. Drugs that act on blood coagulation. Exercises: Procedures for bleeding disorders in dental practice. Anaphylactic shock; treatment of anaphylactic shock	3 2
Week 13.	Lecture: Pharmacology of the gastrointestinal system. Drugs in the treatment of ulcer disease. Antiemetics, emetics, laxatives, antidiarrheals Exercises: Overdose (types of overdose, clinical picture and treatment of overdose). Analgesic overdose.	3 2
Week 14.	Lecture: Pharmacology of the endocrine system. Adrenal and thyroid hormones. Full hormones. Contraception. Seminar: Use of drugs in pregnant and lactating women. Risks of using certain drugs Exercises: Overdose of psychoactive substances. Case report-simulated patient	3 2
Week 15.	Lecture: Drugs in the treatment of diabetes mellitus Partial exam II. Exercises: Systematization of materials. Colloquium II.	3 2
Week 17.	Final exam, Corrective exam period	
Week 19.	Corrective exam period	

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: 75** **Lectures** 15 **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. Bite 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[49]:	Acquired knowledge and skills are tested continuously during the semester. In terms of the total number of points, the student can achieve for activities and knowledge tests: - Examination of acquired knowledge and activity on practical exercises-a maximum of 12 points (a minimum of 6.6 points). - The partial knowledge test in the 8th week of the 5th semester - a maximum of 38 points (a minimum of 20.9 points). The partial knowledge test can be scored only if it contains 55% correct answers. The tests are compiled for each exam period and divided into groups A and B (C and D if necessary). - The final exam in the 17th week of the 5th semester consists of the theoretical and practical parts of the exam. The theoretical part of the exam is taken in the form of a test. The final exam test can only be scored if it contains 55% correct answers. The tests are compiled for each exam period and divided into groups A and B (C and D if necessary). On the final exam test, a student can achieve a maximum of 42 points (a minimum of 23.1 points). A student who did not pass the partial knowledge test will take the material included in the partial exam as part of the final exam. This category of students on the final exam test can achieve a maximum of 80 points (a minimum of 44 points). Questions on the test do not have to be graded with the same number of points. The decision on how to score questions from the final exam test is made by the subject teachers before the test. Following successful completion of the theoretical part of the exam, the student proceeds to the practical part of the final exam. The theoretical part of the final exam is invalid if the practical part is not passed, as it is an integral component of the final exam. A student can achieve a maximum of 8 points in the practical part of the exam (a minimum of 4.4 points). Students who have achieved 11 or 12 points for activities and tests of acquired knowledge in practical exercises during the semester are exempt from taking the practical part of the final exam. If they want to increase their overall number of points, they can take the practical part of the exam. Other students are required to take the practical part of the exam. After passing the practical part of the exam, students who have not achieved the minimum points for the activity on the practical exercises

[49] **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**

	must answer one question (oral examination or writing an essay). The mentioned part of the exam provides a maximum of 7 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[50]:	Required: 1. Trifunović D, Radlović S, Kandić M, Nastić M, Petrović A, Krstić M, Sinobad D. Stomatološka protetika: pretklinika. 4. izdanje. Beograd: Zavod za udžbenike i nastavna sredstva; 2003. 2. Krstić M, Petrović A, Stanišić-Sinobad D, Stošić Z. Stomatološka protetika: totalna proteza. II, dopunjeno i preštampano izdanje. Beograd: Velarta; 1998. 3. Stamenković D. Stomatološka protetika – parcijalne proteze. Beograd: Interprint; 2006. 4. Jerolimov i sar. Osnove stomatoloških materijala. Zagreb: Stomatološki fakultet; 2005. On-line udžbenik. Additional: 1. Driscoll CF, Golden WG. Treating the Complete Denture Patient. 1st edition. Hoboken, NJ: Wiley-Blackwell; 2020. 2. Chang TL, Orellana D, Beumer J. Kratochvil's fundamentals of removable partial dentures. Batavia, IL: Quintessence Publishing Co, Inc; 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	1
	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

[50] **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 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 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	1 4
Week 3.	Lectures: Bite rims: cast preparation, record base fabrication procedures with different materials (temporary and definitive bases), fabrication of wax occlusion rims Exercises: Demonstration: Custom tray with spacer fabrication, functional impression making, beading and boxing of the final (functional) impression, pouring master cast	1 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) Exercises: Introductory class with demonstration and practical work of the student: Fabrication of upper and lower record bases and wax occlusion rims	1 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 Exercises: Introductory class with demonstration and practical work of the student: Maxillomandibular relationship record, preparing and mounting the master casts on an articulator	1 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 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	1 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 Exercises: Introductory class with demonstration and practical work of the student: Set up of upper and lower posterior teeth, waxing of complete dentures	1 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	1 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	1 4

	abutment teeth morphology, planning of partial dentures with regard to the possibility of tissue support	
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	1 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	1 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.	1 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 (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.	1 4
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	1 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	1 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[51]:	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

[51] **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**

	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[52]:	1. Kasper D, Fauci A, Hauser S, Longo D, Jameson J, Loscalzo J. Harrison's Principles of Internal Medicine. 19th edition, The McGraw- Hill; 2015.

[52] **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**

	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. 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.	3 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** 3 **Exercises** 2	
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[53]:	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[54]:	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	3 2

[53] **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**

[54] **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**

	Practical exercises: Introduction with standard and digital radiologic techniques for examining the neck and its structures Seminars	
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 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 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. Seminars	3 2
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.	3

	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	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. 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 17	Final exam (Oral exam)	
Week 19	Makeup exam date for students who have not passed the final exam	

Item code: SFSOS3051E	**Course Title: PRECLINICAL RESTORATIVE DENTISTRY I**		
Cycle: integrated	**Year: III**	**Semester: V**	**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**		
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[55]:	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[56]:	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.

[55] **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**

[56] **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 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 ECTS credit:** 4
Status: Obligatory		**Total number of hours: 60** Lectures **15** Exercises **45**	

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. Definition, goals and tasks of fixed prosthetics. 2. Tooth preparation. 3. Impression techniques in fixed prosthetics. 4. Making of a working model. 5. Mounting the working model in the dental articulator. 6. Wax modeling procedure. 7. Preparation of the canal and production of the dowel core. 8. Anchor and the body of the dental bridge. 9. Dental bridges. 10. Making fixed restorations by casting. 11. Ceramic layering technique 12. Production of fixed prosthetic restorations by CAD / CAM method. 13. Production of fixed prosthetic restorations by CAD / CAM method. 14. Production of fixed prosthetic restorations by CAD / CAM method and 3D printing method. 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[157]:	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 - maximum 4 points - Partial exam in the 8th week of the VI semester - maximum 46 points, minimum 25.3 points. The final exam consists of a practical and a theoretical part of the exam. - Final exam in the 17th week of the VI semester - maximum 50 points. - Practical part of the exam - maximum 4 points (minimum 2.2 points) - Theoretical part - 46 points (minimum 25.3 points) A student who did not pass the partial knowledge test takes the final exam and takes everything he did not pass, the partial exam and / or the final exam. The 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) and the practical part of the exam. Partial and final exams are scored only 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 from the test is made by the responsible teachers before taking the test. According to the above, the rating scale is 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, bears 75-84

[57] 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

	7 (D) - generally good, but with significant shortcomings, carries 65-74 points; 6 (E) - meets the minimum criteria, carries 55-64 points; 5 (F, FX) - does not meet the minimum criteria, less than 55 points. - The practical part of the exam is taken after passing the theoretical part of the exam. If a student does not pass the practical part of the exam, he is not recognized for the theoretical part of the exam because it is an integral part of the final exam.
Literature[2]:	Mandatory: 1. Trifunović D, Radlović S, Kandić M, Nastić M, Petrović A, Krstić M et al. Stomatološka protetika predklinika. Beograd: Zavod za udžbenike i nastavna sredstva; 2003. 2. Suvin M. Fiksna protetika. Zagreb: Školska knjiga - Zagreb; 1980. 3. Jakovac M, Kranjčić J, Bergman L, Carek A, Milardović S, Viskić J et al. Pretklinička i laboratorijska fiksna protetika. Zagreb: Stega-Tisak; 2020. 4. Redžepagić S. Rubno zatvaranje u fiksnoj protetici. Sarajevo: Udruženje stomatologa Bosne i Hercegovine; 1999. Additional: 1. Schillinburg TH, Hobo S, Whitsett l, Jacobi R. Osnove fiksne protetike 3 rd edition. Media ogledi 2008. 2. Rosenstiel SF, Land MF, Fujimoto J. Contemporary fixed prosthodontics, 4th edition. Odabrana poglavlja. St. Louis: Mosby Inc., 2006. 3. Baltzer A, Kaufmann-Jinoian V, Kurbad A, Reichel K. Cad/Cam i potpuna keramika Estetski nodomjestci u stomatolškoj praksi. Zagreb: Media ogled d.o.o.; 2009.

COURSE SYLLABUS: PRECLINICAL AND LABORATORY FIXED PROSTHODONTICS

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lectures, exercises)
Week 1.	Lectures: Definition, goals and tasks of fixed prosthetics. General concepts and classification of fixed restorations. Exercises: Introductory class with demonstration, Introduction to the dental workplace, equipment and materials. Tooth preparation procedure.	1 3
Week 2.	Lectures: Tooth preparation and specifics of tooth preparation for making various fixed prosthetic restorations. Exercises: Demonstration of taking an antagonist's tooth impression and pouring out a working model. The student takes an antagonist tooth impression and pours out a working model.	1 3

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Week 3.	Lectures: Impression techniques in fixed prosthetics, conventional and digital. Exercises: Demonstration of taking a conventional and digital definitive impression.	1 3
Week 4.	Lecture: Pouring impression - making a working model, making a special model. Making of a working model by the method of 3D printing. Specifics of individual working models. Exercises: Demonstration of pouring a definitive impression - making a working model. The student pours out the definitive impression - creates a working model.	1 3
Week 5.	Lectures: Mounting a working model in an articulator without a facebow and with a standard facebow. Cutting of special working models. Processing of special working models. Marking the preparatory border. Applying distance varnish. Exercises: The student mount working models into the articulator.	1 3
Week 6.	Lectures: Wax modeling procedure - full anatomical crowns, faceted crowns, substructures for crowns, reduced crown shapes and cut-back shapes. Exercises: Demonstration of cutting special working models, processing special working models and marking the preparation margine. The student cuts out special working models, processes special working models. Marking the preparation margine. Applying distance varnish.	1 3
Week 7.	Lectures: Preparation of root canal for making dowel core. Making a dowel core. Exercises: Demonstration modeling in wax - crowns of full anatomical shape, faceted crowns, substructures for crown and cut-back shapes and dowel core. Student Modeling in wax - crowns of full anatomical shape, faceted crowns, substructures for crown and cut-back shapes and dowel core.	1 3
Week 8.	Lectures: Dental bridges - parts of the bridge, anchor for the dental bridge, the body of the bridge, and the relationship to the gingiva. Exercises: Student models in wax - crowns of full anatomical shape, faceted crowns, substructures for crown and cut-back shape and dowel core.	1 3
Week 9.	Lecture: Dental bridges - topographic classification, modeling of dental bridges. The importance of communication between the laboratory and the dentist in the office. Exercises: Student models in wax - crowns of full anatomical shape, faceted crowns, substructures for crown and cut-back shape and dowel core.	1 3
Week 10.	Lecture: Making fixed restorations by casting methode. Preparation of a fixed restoration model for investment in refractory mass. Specifics in investment, elimination of wax. Casting of fixed restorations of dental alloy and ceramics. Processing and polishing of cast fixed restorations. Exercises: Demonstration of dental bridge modeling in wax. A student models a dental bridge in wax.	1 3
Week 11.	Lecture: Layering of dental ceramics on substructures, faceted, reduced, cut - back forms of fixed prosthetic restorations. Basic and advanced layering with effect making. Exercises: Student Modeling a dental bridge in wax.	1 3

Week 12.	Lecture: Making fixed prosthetic restorations from different metal - ceramic and all - ceramic systems (materials) by CAD / CAM method. Exercises: Demonstration of preparation of a fixed restoration model for investment in refractory mass, investment in refractory mass, casting of fixed restorations, processing and polishing.	1 3
Week 13.	Lecture: Making fixed prosthetic restorations from different metal - ceramic and all - ceramic systems (materials) with CAD / CAM system. Exercises: Demonstration of applying dental ceramics on substructures, faceted, reduced and cut back forms of fixed prosthetic restorations, layering technique.	1 3
Week 14.	Lecture: Production of fixed prosthetic restorations from various metal - ceramic and all - ceramic systems (materials) by CAD / CAM method and 3D printing method. Exercises: Demonstration of making fixed prosthetic restorations from different metal - ceramic and all - ceramic systems (materials) by CAD / CAM method.	1 3
Week 15.	Lecture: Specifics of laboratory production of implant prosthetic structures. Exercises: Demonstration of laboratory production of implant prosthetic structures.	1 3
Week 17.	Final exam	
Week 19.	Corrective 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[58]:	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[59]:	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.

[58] **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**

[59] **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	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** **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:	Passed examins: Anatomy, Histology, Physiology, Patology and Patophysiology		
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:	3. 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[60]:	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,

[60] **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**

	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[61]:	**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	

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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: Incisions, drainage. Peripheral vein puncture. Infusion system preparation; transfusion kit. Intravenous and muscular injection. Antibiotic administration.	3 3
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.	3 3

	Peripheral nerve injury – clinical signs. Interpretation of the diagnostic procedures in intracranial hemorrhage, and mass effect on MRI/CT of the brain.	
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. 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	3 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:	3

	-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
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 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 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: 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[62]:	Student can earn points in the following way: Activity in lectures - 5 points Activity on exercises - 5 points The partial knowledge test - in the 8th week 40 points (minimum number of points for passing is 20 points) Final exam 50 points The maximum number of points is 100.

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	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[63]:	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

[63]**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 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[64]:	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[65]:	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

[64] 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

[65] 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 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:** 5
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[66]:	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[67]:	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	1
	Practical exercises: They follow the lectures with teaching content	2
Week 2.	Lecture: Basic syndromes in neurology. Consciousness and disorders of consciousness	1
	Practical exercises: They follow the lectures with teaching content	2
Week 3.	Lecture: Cerebrovascular disease	1
	Practical exercises: They follow the lectures with teaching content	2

[66] **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**

[67] **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 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: SFSIS0603E	**Course Title: Public health**		
Cycle: integrated	**Year: III**	**Semester: V**	**Number of ECTS credits:** 5
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. Legislative in health care and dental care.
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[68]:	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[69]:	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.

[68] **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**

[69] **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: Public 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: Health politic Practice: Health politic analyse, identification of leading problems and obstacles and their possible solutions	1 2
Week 4.	Lectures: Population health assessment and social deseases Practice: Epidemiological and statistical principes in population health analyse	1 2
Week 5.	Lectures: Health care Practice: Health care of specific population groups	1 2
Week 6.	Lectures: Public health organisation Practice: Organisation and work of health institutions.	1 2
Week 7.	Lectures: Health care systems and financement. Economical aspect of health and disease Practice: Financement models of health care	1 2
Week a 8.	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 9.	Lectures: Management in health care Practice: Management caracteristics in health care institutions	1 2
Week 10.	Lectures: Quallity in health care Practice: Evaluation and control quallity in dental care	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: Beheviour and health Practice:Model of health behaviour as basis for educational health interventions	1 2
Week 15.	Lectures: Legislative in health care and dental care Practice: Legislative analyse related to health care	1 2
Week 16.	Final exam	
Week 17.-20.	Final exam/retake	

Item code: SFSIS3054E	Course Title: Oral hygiene		
Cycle:integrated	Year: III	Semester: V	Number of ECTS credits: 5
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
Week 1.	**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
Week 2.	**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
Week 3.	**LECTURES** Mechanical plaque control - ordinary brushes, single brushes and electric brushes, interdental brushes, thread **EXERCISES** Oral hygiene indices	2 2
Week 4.	**LECTURES** Auxiliaries for mechanical plaque control	2

	Chemical plaque control agents - toothpastes **EXERCISES** Detection and removal of dental plaque and other deposits	 2
Week 5.	**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
Week 6.	**LECTURES** 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 2
Week 7.	**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
Week 8.	**LECTURES** Protocols for maintaining oral hygiene in other specific population groups of patients **EXERCISES** Chemical agents for plaque control	1 2
Week 9.	**EXERCISES** Chemical agents for plaque control	2
Week 10.	**EXERCISES** Motivation and remotivation for maintaining oral hygiene in an individual	2

Week 11.	**EXERCISES** Protocols for maintaining oral hygiene in young children (newborns, infants, young children and preschool children) and older children (school age and adolescents)	2
Week 12.	**EXERCISES** Protocols for maintaining oral hygiene in young children (newborns, infants, young children and preschool children) and older children (school age and adolescents)	2
Week 13.	**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
Week 14.	**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
Week 15.	**EXERCISES** Protocols for maintaining oral hygiene in other specific population groups of patients	2

Item code: SFSIS3064E	**Course Title: Complex restorations**		
Cycle: integrated	**Year: III**	**Semester: VI**	**Number of ECTS credits:** 5
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[70]:	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[71]:	Required: 1. Roberson TM, Heymann HO, Swift EJ. Sturdevant's Art and Science of Operative Dentistry, Mosby Inc, 2013.Dopunska:

[70] **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**

[71] **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**

	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: SFSIS0602E	**Course Title: INFECTIOUS DISEASES**		
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** **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[72]:	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[73]:	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

[72] **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**

[73] **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: 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:** 5

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[74]:	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[75]:	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	2 1

[74] **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**

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	Exercises: Schirmer test 1 and 2. Tearing of tear ducts. Determination of visual acuity, subjectively and objectively	
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[76]:	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 55 points.
Literature[77]:	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.

[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**

[1]**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

Implementation plan of the course Oral Surgery

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.	2 3

	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	
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[78]:	The practical exam and the theoretical part are taken into account during the assessment.

[78] **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**

	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[79]:	Required: 1. Živković i saradnici. Osnovi restaurativne stomatologije. Data Status, Beograd, 2009. 1. Šutalo i saradnici. Patologija i terapija tvrdih zubnih tkiva. Naklada Zadro, Zagreb, 1994. *2. 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

[79] **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 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 Practicals: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	1 6
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	1 6
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	1 6
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	1 6
Week 5.	Tooth discoloration Practitals: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	1 6
Week 6.	Lecture: Teeth whitening techniques Practical: Practical work on the patient - rehabilitation of carious and non-carious defects of hard dental tissues	1 6
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	1 6
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	1 6

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: 14**
Status: Obligatory		**Total number of hours: 210 (60+150)** Optionally develop the distribution of hours by type: VII semester: 105 VIII semester: 105 **Lectures** 30 **Lectures** 30 **Exercises** 75 **Exercises** 75	
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. 8. Clinical procedures in therapy of removable partial dentures: try-in of the cast metal framework of the partial denture, 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 (L) for all students and - practical exercises
Assessment methods with assessment structure[80]:	Acquired knowledge and skills are tested continually during the semester. The structure of the total number of points the students can acquire for activities and tests is as follows: - Activities in lectures - maximum 6 points - Assessment of acquired knowledge and activities in practical exercises - clinical work with patients - maximum 14 points - Partial exam in the 15th week of the first semester - maximum 30 points - Final exam consists of practical and theoretical assessment. Practical part of the exam is a precondition for sitting the theoretical part of the assessment. Practical part of the exam is not valid unless the theoretical part is successfully completed. Practical part of the exam - maximum 10 points Theoretical part of the exam - maximum 40 points The final exam consists of a test which is compiled for every exam term while students are divided into A and B groups (and if there is a need into C and D groups). Each part of the final exam must have at least 55% of correct answers. Test questions are not allocated the equal number of points. The decision on the allocation of points for each test is made by the course professor before testing. At the end of the course the student can acquire a total of 100 points. 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[81]:	**Required literature:** 1. Zarb G, Hobkirk JA, Eckert SE, Jacob RF. Prosthodontic Treatment for Edentulous Patients. Complete Dentures and Implant-Supported

[80] 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

[81] 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

	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 – 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 5
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 5
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 5
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 5
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 completly edentulous patients, selection of artificial teeth.	2 5
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 5
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.	2 5

	Exercises: Registration of excentric positions of the mandible and obtaining of position registrates.	
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 5
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 5
Week 10.	Lecture: Retention and stabilisation of complete dentures. Exercises: Occlusal concepts in complete denture. Bilateral balanced occlusion.	2 5
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 5
Week 12.	Lecture: Immediate complete denture. Repairs and relining of complete dentures. Exercises: Specific in clinical work during the production of immediate denture. Repairs and relining of complete dentures.	2 5
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 5
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 5
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 5

COURSE SYLLABUS: REMOVABLE PROSTHODONTICS MODUL 2 – 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 5

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 5
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 5
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 5
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 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.	2 5
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 5
Week 8.	Lecture: Clinical procedures in therapy of removable partial dentures: 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 5
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 5
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 5
Week 11.	Lecture: Partial dentures with attachments, part I – general characteristics of attachments, retention and stabilisation of removable partial denture with	2

	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.	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 5
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 5
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 of sub-total dentures. Exercises: Immediate and transitional partial dentures. Subtotal edentulism treatment, selection of retention and stabilisation elements.	2 5
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 5

Item code: SFS0S0704E	**Course Title: ORAL MEDICINE PATHOLOGY**		
Cycle: integrated	**Year: IV**	**Semester: VII**	**ECTS credits: 4**
Status: obligatory		**Total hours: 45** **Lectures** 15 **Practice** 30	

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, physiological, pathological characteristics of the oral mucosa 2. Morphological, physiological, pathological characteristics of the oral mucosa 3. Exogenous and endogenous damage to the oral mucosa 4. Exogenous and endogenous damage to the oral mucosa 5. Cheilitis: exfoliative, Solaris, allergic 6. Cheilitis: angular, glandular, aposematism 7. Anomalies of the tongue 8. Inflammations of the tongue 9. Bacterial infections of the oral mucosa 10. Bacterial infections of the oral mucosa 11. Viral infections of the oral mucosa 12. Viral infections of the oral mucosa 13. Fungal infections of the oral mucosa 14. AIDS 15. AIDS
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[82]:	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:

[82] **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**

	- regular lecture attendance - 5 points, - practice attendance – 5 points, - active work in practice – 10 points (a colloquium after 7 weeks of practice – 5 points; in week 15 case representation – individual work – 5 points), - Mid-term examination by means of 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[83]:	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. 4. Greenberg M., Glick M.: Burket's Oral medicine, diagnosis, and treatment, the tenth edition, Medical edition, 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, physiological, pathological characteristics of the oral mucosa Practice: Anamnestic-diagnostic procedure Seminars:	1 2
Week 2.	Lecture: Morphological, physiological, pathological characteristics of the oral mucosa Practice: Anamnestic-diagnostic procedure Seminars:	1 2
Week 3.	Lecture: Exogenous and endogenous damage to the oral mucosa Practice: Clinical examination of the oral mucosa Seminars:	1 2
Week 4.	Lecture: Exogenous and endogenous damage to the oral mucosa Practice: Clinical examination of the oral mucosa Seminars:	1 2
Week 5.	Lecture: Cheilitis: exfoliative, Solaris, allergic Practice: Tests in oral medicine Seminars:	1 2

[83] **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 6.	Lecture: Cheilitis: angular, glandular, aposematism Practice: Native smear (preparation and analysis) Seminars	1 2
Week 7.	Lecture: Anomalies of the tongue Assessment of the completed lessons by means of a colloquium (analysis of clinical cases through images and presentations)	1 2
Week 8.	Lecture: Inflammations of the tongue Practice: Individual work with a patient Seminars:	1 2
Week 9.	Lecture: Bacterial infections of the oral mucosa Practice: Individual work with a patient Seminars:	1 2
Week 10.	Lecture: Bacterial infections of the oral mucosa Practice: Individual work with a patient Seminars:	1 2
Week 11.	Lecture: Viral infections of the oral mucosa Practice: Individual work with a patient Seminars:	1 2
Week 12.	Lecture: Viral infections of the oral mucosa Practice: Individual work with a patient Seminars:	1 2
Week 13.	Lecture: Fungal infections of the oral mucosa Practice: Individual work with a patient Seminars:	1 2
Week 14.	Lecture: AIDS Practice: Individual work with a patient Seminars:	1 2
Week 15.	Lecture: AIDS Case representation – individual work	1 2
Week 17.	Final exam (test)	
Week 19.		

Item code: SFS0S0704E	**Course Title: ORAL MEDICINE PATHOLOGY**		
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 aphtous stomatitis, Behçet syndrome 2. Allergies 3. Salivary gland diseases 4. Orofacial pain 5. White lesions 6. Autoimmune oral diseases 7. Autoimmune oral diseases 8. Premalignant lesions of the oral mucosa 9. Blood dyscrasias 10. Blood dyscrasias 11. Endocrine diseases 12. Focal complex 13. Age-related oral diseases 14. Drug therapy for oral mucosa lesions 15. Laser application in oral medicine
Learning outcomes:	Student is going to be introduced with multicausal etiology, pathognomonic efflorescence of the type of recurrent ulcer with pathohistological verification (vasculitis) and clinical types and stages of SAR. To know the symptoms, clinical picture, pathophysiology and immunological events in different forms of allergic reactions. To present necessary diagnostic procedures for diagnosing (clinical picture, laboratory findings and allergy tests). Student is going to acquire basic theoretic knowledge about the diseases of salivary glands and modern approach in diagnostics and treatment. They are going to be introduced with the definition of pain, pain modulation, classification of orofacial pain, differential diagnosis of pain, as well as mechanisms of pain syndromes and the significance of dentists in team approach to treating orofacial pain. Student is going to be introduced to etiology, clinical picture, histopathology and treatment of white lesions, the significance of differential diagnosis and the significance of clinical, microbiological, exfoliative- cytological and pathohistological findings. Through theory they are going to adopt basic knowledge about the significant influence of humoral and cellular immune response in oral autoimmune diseases, to know differential diagnosis of autoimmune diseases, through macroscopic, pathohistological, immunofluorescent, microbiological, laboratory findings and tests. Student is going to be educated on the significance of early detection of oral premalignant lesions (toluidin blau, exfoliative cytology, laboratory findings). They are going to be introduced with the significance of all the elements of blood line, erythropoesis, leukopoesis, hemoblastosis, hemostasis, as well as complications in working with these high-risk patients – premedication and multidisciplinary approach.

	To acquire basic knowledge about the significance of dysfunction of endocrine disorders and their implications in the oral mucosa, about the modern aspect of focal infection, diagnosis and treatment, and they are going to know differential-diagnostic methods and treatment protocols with multidisciplinary approach in changes of the oral mucosa in different stages of life. They are going to be educated in writing prescriptions for medications in the treatment of lesions in the oral mucosa.
Teaching methods:	The course is held: 1. lecture ex cathedra for all the students 2. clinical exercises
Assessment methods with assessment structure[84]:	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[85]:	Required: 2. Topić Berislav and associates: Oral medicine, Faculty of Dentistry in Sarajevo, 2001. 3. Dedić Amira: Autoimmune oral diseases – practicum, Sarajevo, 2010. 4. Pašić E, Hadžić S, Gojkov Vulelić M and Hukić M: Oral microbiology, Faculty of Dentistry in Sarajevo, 2017. Additional: 1. Dedić Amira: Diabetes mellitus – oral aspects, University edition, Sarajevo, 2004. 2. Đukanović Dragoslav and associates: Atlas – diseases of soft tissues in the oral cavity, Beograd, 2001. 3. Laskaris Georg: Atlas of the oral diseases, III revised edition (translation in Croatian language), Zagreb, 2003. 4. Greenberg M., Glick M.: Burket's Oral medicine, diagnosis

[84] 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

[85] 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

	and treatment, 10th edition, Medicinska naklada, Zagreb, 2006.

Implementation plan for the course Oral medicine VIII semester

Week	Form of teaching and curriculum	Number of hours
Week 1	Lecture: Recurrent aphtous stomatitis, Behçet syndrome Practice: Individual work with a patient Seminars:	2 2
Week 2	Lecture: Allergies Practice: Individual work with a patient Seminars:	2 2
Week 3	Lecture: Salivary gland diseases Practice: Individual work with a patient Seminars:	2 2
Week 4	Lecture: Orofacial pain Practice: Individual work with a patient Seminars:	2 2
Week 5	Lecture: White lesions Practice: Individual work with a patient Seminars:	2 2
Week 6	Lecture: Autoimmune oral diseases Practice: Individual work with a patient Seminars:	2 2
Week 7	Lecture: Autoimmune oral diseases Practice: Individual work with a patient Seminars:	2 2
Week 8	Lecture: Premalignant lesions of the oral mucosa Practice: Individual work with a patient Seminars:	2 2
Week 9	Lecture: Blood dyscrasias Practice: Individual work with a patient Seminars:	2 2
Week 10	Lecture: Blood dyscrasias Practice: Individual work with a patient Seminars:	2 2
Week 11	Lecture: Endocrine diseases Practice: Individual work with a patient Seminars:	2 2
Week 12	Lecture: Focal complex Practice: Individual work with a patient Seminars:	2 2
Week 13	Lecture: Age-related oral diseases Practice: Individual work with a patient Seminars:	2 2
Week 14	Lecture: Drug therapy for oral mucosa lesions Practice: Individual work with a patient Seminars:	2 2

Week 15	Lecture: Laser application in oral medicine Practice: Practical exam	2 2
Week 17	Final exam (oral test)	
Week 19	Makeup exam date for students who have not passed the final exam.	

Item code: SFSIS0707E	**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:	Training a student for radiological interpretation and diagnostics of dental radiographs. Knowing radiological dental techniques of recording with indications and contraindications for particular techniques. Radiological imaging in special categories of patients. Basic principles of radiation and protection of patients and dental staff
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: Acquiring knowledge to the extent necessary for students of dentistry, about the way of X-ray genesis and their nature, as well as the consequences of their use, recording techniques of dentofacial region, radiological anatomy, radiological description, diagnostics and differential diagnostics of pathological conditions, anomalies, and trauma in the dentofacial area Skills: Master the radiological techniques of recording with intraoral and extraoral methods, digital radiography and special techniques; -knowing the principles of analysis of dental radiographs - radiological description and diagnosis of normal anatomical structures, pathological processes and anomalies of the dentofacial region. 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[86]:	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[87]:	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

Teaching plan Dental radiology

[86] **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**

[87] **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	Course form and content	Number of hours
Week 1.	Lecture: Introduction and history of dental radiology Objectives and content of the subject dental radiology. Introduction to the subject, literature and teaching staff Practice: Introduction with the practical exercise program. Tour to the radiological cabinet, basic concepts, equipment, principles of work	2 1
Week 2.	Lecture: Fundamentals of radiobiology Mechanism of action of ionizing radiation. the effect of ionizing radiation on the cell. Sensitivity of the organism to ionizing radiation. Practice: Radiation protection, protection against infection Means of protection and protection ways of staff and patients from radiation and from infections	2 1
Week 3.	Lecture: The emergence and geometrical rules in the creation of an X-ray image. X-ray and other apparatus used in diagnostics in the dentomaxillofacial region. Absorption of X-rays. Physical-chemical consequences of X-ray absorption. Analysis of optical quality of radiograms. Projection effects, X-ray films and cassettes for dental radiography. Standard X-ray diagnostic devices. Special purpose devices. Digital radiography. Special methods. Division the X-ray imaging techniques. Practice: Basic concepts of X-ray image, films and cassettes for dental radiography, types, composition, development, orientation. Introduction with the basic principles of working with dental X-ray appliances. Basic concepts about X-ray images	2 1
Week 4.	Lecture: Intraoral recording techniques: Intraoral periapical and bitewing technique, occlusal technique of recording Practice: Intraoral techniques: demonstration and exercise of intraoral techniques	2 1
Week 5.	Lecture: Extraction techniques of X-ray imaging. Special recording techniques. Panoramic radiography, orthopantomography, cephalometric radiography, 3D dental radiography, scanography. Lateral technique, sagittal and profile technique of recording Practice: Extraoral techniques: demonstrations of taking images and exercising of extra oral imaging techniques. Special techniques for recording-demonstrations and training of special techniques	2 1
Week 6.	Lecture: Digital radiography. Methods of digital radiography, methods of performance, indications, advantages and disadvantages Recording of special categories of patients (children, patients with edentulous jaws, patients with special needs, pregnant women) Practice: Digital radiography: demonstration and exercise	2 1
Week 7.	Lecture: Radiological anatomy of dentomaxillofacial area. Anatomical details visible on dental radiographs. Normal radiological brightness and shadows. Practice: intraoral X-ray images-normal anatomy, orientation and basic principles of analysis. Extraoral radiographs-normal anatomy, orientation and basic principles of analysis.	2 1

Week 8.	Lecture: Radiological characteristics of dental caries and periapical infections. Practice: Radiological characteristics of teeth and their environment - X-ray analysis of dental radiographs.	2 1
Week 9.	Lecture: Radiological examinations in preventive and pediatric dentistry Practice: Radiological characteristics in preventive and pediatric dentistry - X-ray analysis of radiographs	2 1
Week 10. Week 13	Lecture: Analysis of radiographic specificities in childhood Lecture: Radiological aspects in fixed prosthodontics - radiological characteristics Practice: Analysis and radiological characteristics in childhood - X-ray analysis of radiographs Practice: Radiological characteristics and analysis in a fixed prosthodontics - X-ray analysis of radiographs	2 2 1 1
Week 11.	Lectures: Orthopantomography analysis in orthodontics - radiological characteristics Practice: Radiological diagnostics in orthodontics - orthopantomography analysis	2 1
Week 12.	Lecture: Radiology in periodontology and oral medicine - radiological characteristics Practice: Radiological characteristics in periodontology and oral medicine. - X-ray analysis of radiographs	2 1
Week 14.	Lecture: Radiological aspects in dental implantology - radiological characteristics Practice: radiological diagnosis and differential diagnostics - X-ray analysis of radiographs	2 1
Week 15.	Lecture: Radiological aspects in oral surgery - radiological characteristics Practice : radiological diagnosis and differential diagnostics - X-ray Analysis of radiographs	2 1
Week 16.	Final exam	
Week 17.-20.	Final exam/retake	

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[88]:	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[89]:	Required:		

[88] **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**

[89] **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**

	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

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 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: 4**
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[90]:	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[91]:	Obligatory: 4. Topić Berislav and associates: Oral Medicine, Faculty of Dental medicine in Sarajevo, 2001 5. Dedić Amira: Autoimmune oral diseases – practicum, Sarajevo, 2010. 6. Pašić E, Hadžić S, Gojkov Vulelić M and Hukić M: Oral Microbiology, Faculty of Dental medicine in Sarajevo, 2017 Supplementary: 5. Dedić Amira: Diabetes mellitus-oral aspects, University edition, Sarajevo, 2004. 6. Đukanovic Dragoslav and associates: Atlas – diseases of the soft tissue in the oral cavity, Belgrade, 2001 7. Laskaris Georg: Atlas of oral diseases, Third revised edition (translation in the Croatian language), Zagreb 2003.

[90] **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**

[91] **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**

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:** 4
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[92]:	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[93]:	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)

[92] **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**

[93] **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**

	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:** 4
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 account the specifics of organizational units*)	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.		
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[94]:	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.		

[94] **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[95]:	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 Exercices: Practicum: Pregnancy in adolescency, oral health menagement and dental treatment, evidence based analizys	1 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

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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: SFSIM0708E	**Course Title: PEDIATRICS**		
Cycle: integrated	**Year: IV**	**Semester: VIII**	**Number of ECTS credits:** 4
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:	To acquire knowledge from the anamnesis and physical examination of newborns, infants, children and adolescents, their growth and development, their ability to reach full potential through the adult period. Acquire knowledge about prevention, recognition and treatment of a sick child To acquire knowledge from training, or habilitation of children with developmental disabilities in terms of prevention, treatment and rehabilitation.The purpose of this course is to train the student, through properly taken anamnesis and clinical examination, to assurely establish the diagnosis of a sick child. Student should direct further course of recognition and treatment of the diseased child through the recognized pediatric protocols. In lectures, interactive classes and practical exercises, theoretical knowledge is adopted and the skills of examining an ill child within organic systems is overwhelmed from the doctrine of children propedeutics.		

Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	Organization of the work of the pediatric clinic, preventive pediatrics, pulmonology, allergology and immunology, cardiology, rheumatology , gastroenterohepatology, nephrology, neonatology, neurology, endocrinology, hematology, oncology.
Learning outcomes:	Through this course subject the student will adopt the following knowledge about: Introduction to pediatrics and preventive pediatrics, Pulmonology and allergology , Cardiology, Rheumatology, Gastroenterohepatology, Nutrition of the child, Nephrology, Neonatology,Neurology, Endocrinology, Hematology , Oncology The skills that a student needs to know to practically perform (knows how and does): Basic parameters of vital functions: temperature, pulse, respiration, blood pressure, Anthropometric measures: body weight, body height, head circumference, Examination of the skin turgor, Palpation of lymph nodes in predilection sites, Examination of the head, neck, thorax, abdomen, genitals, extremities, Examination of meningeal signs. After attended classes the student should adopt the following attitudes: Proper taking of pediatric anamnesis, Good knowledge of the physical examination of a sick child, Knowing the basic laboratory and diagnostic procedures that apply to the sick child, Knowledge of basic therapeutic and preventive possibilities in pediatric practice.
Teaching methods:	Interactive lectures for all students, exercises, for practical classes will be used methods: "Four steps according to Peyton", PBL (Problem based learning) OSCE
Assessment methods with assessment structure[96]:	Within the planned number of hours, there will 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 obtained grade of the approach to taking the final exam. The condition for taking the written part of the final exam is the previously passed practical part of the exam. Forming a final grade. The number of total points earned, obtained through all forms of knowledge testing is translated 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[97]:	Required: Nelson. Textbook of Pediatrics. Philadelphia: W.B. Saunders Company;

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	2004. eMedicine-Pediatrics; available at: http://emedicine.medscape.com/pediatrics_general

Course syllabus Pediatrics

Week	Teaching and learning methods	Course load
Week 1.	Lecture: Module 1. Organization of the work of the Pediatric Clinic Exercises:	
Week 2.	Lecture: Module 2. Preventive pediatrics Exercises:	
Week 3.	Lecture: PULMONOLOGY, ALLERGOLOGY AND IMMUNOLOGY Module 1 Upper respiratory airways diseases Module 2. Obstructive pulmonary diseases Module 3. Pneumonia Module 4. Cystic fibrosis Module 5. Tuberculosis Module 6. Allergic diseases Module 7. Immunological diseases Exercises:	
Week 4.	Lecture: CARDIOLOGY Module 1. Congenital heart defects Module 2. Diagnostic methods in cardiology Module 3. Cardiovascular infections Module 4. Cardiac arrhythmias Module 5. Arterial hypertension Module 6. Cardiac insufficiency Exercises:	
Week 5.	Lecture: RHEUMATOLOGY Module 1. Arthritis associated with infection: acute rheumatic fever and poststreptococcal arthritis Module 2. Basic concept of rheumatic diseases in children Module 3. Juvenile arthritis Module 4. Systemic connective tissue diseases Exercises:	
Week 6.	partial exam	
Week 7.	Lecture: GASTROENTEROHEPATOLOGY Module 1. Symptoms and diagnostic procedures in gastroenterohepatology Module 2. Diseases of esophagus, stomach and duodenum Module 3. Small and large intestine diseases. Inflammatory intestinal diseases Module 4. Liver diseases Module 5. Disturbance of metabolism of water and electrolytes Module 6. Nutrition and nutritional disorders . Exercises:	
Week 8.	Lecture: NEPHROLOGY Module 1. Symptoms and diagnostic procedures in pediatric nephrology Module 2. Infections of the urinary system Module 3. Pediatric aspects of diagnostics and conservative treatment of anomalies of the urinary system Module 4. Neurogenic dysfunction of the urinary bladder Module 5. Glomerulonephritis Module 6. Nephrotic syndrome with minimal damage	

	Module 7. Tubulopathies Module 8. Urolithiasis Module 9. Acute renal insufficiency Module 10. Chronic renal insufficiency Exercises	
Week 9.	Lecture NEONATOLOGY Module 1. Prenatal and perinatal period Module 2. Healthy newborn Modules 3 and 4. Sick newborn Exercises:	
Week 10.	partial exam	
Week 11.	Lecture: NEUROLOGY Module 1. Symptoms and diagnostic procedures in pediatric neurology Module 2. Malformations of central nervous system (CNS), chromosomal abnormalities, neurocutaneous syndromes and skull malformations Module 3. Neurological consequences of prenatal, perinatal and early postnatal effects on brain development Module 4. Metabolic and heredodegenerative disorders of CNS Module 5. Postnatal external CNS insults Module 6. Vascular CNS disorders. Module 7: Paroxysmal CNS disorders. Module 8. Neuromuscular diseases Module 9. Developmental and intellectual disorders of childhood.	
Week 12.	Lecture: ENDOCRINOLOGY Module 1. Growth factors Module 2. Growth dynamics by developmental periods Module 3. Etiopathogenesis of Diabetes mellitus type 1 Module 4. Diagnostics of co-morbidity in obese pediatric patients Module 5. Etiological aspects of thyroid function disorders Module 6. Hypoparathyroidism Module 7. Diagnostic-therapeutic aspect of hypopituitarism Exercises:	
Week 13.	Lecture: HEMATOLOGY Module 1. Erythropoiesis diseases Module 2. Platelet disease and coagulation disease Module 3. Hemophilia Exercises:	
Week 14.	Lecture: ONCOLOGY Module 1. Leukemia in the childhood Module 2. Solid tumors in the childhood Module 3. Early and late consequences of chemotherapy Exercises:	
Week 15.	Partial exam	
Week 17.	Final exam/retake	
Week 19.	Remedial	

Item code: SFSIS4081E	**Course Title: Modern techniques in endodontics**

Cycle: integrated	**Year: IV**	**Semester: VIII**	**Number of ECTS credits:** 4
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[98]:	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[99]:	Required:		

[98] **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**

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	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: 4**
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 determined by taking into account the specifics of organizational units*)	1. Introduction into Pharmacology – General terms 2. Antiseptics in oral medicine and periodontology 3. Preparations for oral cavity hygiene 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[100]:	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[101]:	Required: 5. Berislav Topić, Periodontology, biology, immunopathogenesis, practice. Sarajevo – Zagreb, 2005. 6. Berislav Topić, Oral medicine, Sarajevo, 2001. 7. Ileana Linčir, Pharmacology for dentists, Zagreb, 1991. 8. Ljiljana Janković, Oral medicine, Beograd, 2001 Additional: 9. 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

[100] 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

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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 FOUTHYEAR OF STUDY

Item code: 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. Introduction to preventive dentistry 2. Oral health of the population and oral health indices 3. Biological mechanisms of oral protection 4. Nutrition, importance for oral health 5. Dental plaque 6. Mechanical means for plaque control 7. Chemical plaque control agents 8. Occurrence of dental carious lesion, etiology of dental caries 9. Caries risk assessment 10. Demineralization and remineralization - means for remineralization 11. Fluorides, mechanism of fluoride action, fluoride toxicity 12. Local and systemic dental fluoridation 13. Fissure sealing 14. Prevention of early childhood caries 15. Motivation for oral health maintenance 16. Risk assessment for evaluation of oral diseases (saliva, dental plaque, quality of nutrition) 17. Etiology of gingivitis and periodontitis 18. Initial gingival lesion, diagnosis, risk assessment 19. Principles of prevention of periodontal diseases 20. Prevention of soft tissue diseases of the oral cavity 21. Prevention of orthodontic anomalies 22. Prevention of orofacial injuries 23. Prevention of sports injuries 24. Prevention of temporomandibular disorders 25. Prevention of oral diseases in medically compromised patients 26. Prevention of oral diseases in patients with special needs 27. Preventive measures in pregnancy 28. Preventive measures for adults and the elderly 29. The role of dentists in recognizing and reporting of neglect and abuse 30. Health-educational work 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	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.

assessment structure [102]:	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.
Literature [103]:	Required literature: 7. Jurić H.(urednik). Dječija dentalna medicina. Zagreb: Naklada Slap; 2015. 8. Kobašlija S, Vulićević ZR, Jurić H. i sar. Minimalna invazivna terapija. Sarajevo: Dobra knjiga; 2012. 9. Marković N, Arslanagić A. (urednici). Oralno zdravlje trudnica i dojenčadi. Specifičnosti stomatološkog tretmana. Sarajevo: Stomatološki fakultet sa klinikama Univerziteta u Sarajevu; 2021. 10. Kobašlija S, Huseinbegović A, Selimović-Dragaš M, Berhamović E. Karijes zuba- Primarna prevencija i kontrola. Sarajevo: Stomatološki fakultet Univerziteta u Sarajevu; 2010. 11. Vulović M, i saradnici. Preventivna stomatologija. Beograd: Elit–Medica; 2002. 12. Mihajlo G, Ivan T, Maja L, Jasmina T. Preventivna stomatologija. Pančevo: Stomatološki fakultet Pančevo; 2014. Additional 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.

[102] 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

[103] 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

	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.

COURSE IMPLEMENTATION PLAN IN IX SEMESTER

Week	Form of classes and teaching	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: Dental history with special emphasis on preventive dentistry	2 2
Week 3.	LECTURE: Biological mechanisms of oral protection EXERCISES: Clinical examination with special emphasis on preventive dentistry	2 2
Week 4.	LECTURE: Nutrition, importance for oral health EXERCISES: Dental history with special emphasis on preventive dentistry, oral health indices, weekly nutrition plan	2 2
Week 5	LECTURE: Dental plaque EXERCISES: Analysis of weekly nutrition plan, methods for detection of dental plaque	2 2
Week 6.	LECTURE: Mechanical means for plaque control EXERCISES: Methods for dental plaque visualization, professional cleansing of dental plaque and other deposits	2 2

Week 7.	LECTURE: Chemical plaque control agents EXERCISES: Methods for dental plaque visualization, professional cleansing of dental plaque and other deposits	2 2
Week 8.	LECTURE: Occurrence of dental carious lesion, etiology of dental caries EXERCISES: Toothbrushing techniques, guidelines for individual mechanical plaque control, guidelines for chemical plaque control	2 2
Week 9.	LECTURE: Caries risk assessment EXERCISES: Interdental toothbrushing techniques, guidelines for individual mechanical plaque control, guidelines for chemical plaque control	2 2
Week 10.	LECTURE: Demineralization and remineralization - means for remineralization EXERCISES: Caries risk assessment, guidelines for individual mechanical plaque control, nutrition and for chemical 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:	2

	Fissure sealing EXERCISES: Fissure sealing	 2
Week 14.	LECTURE: Prevention of early childhood caries EXERCISES: Preventive and prophylactic treatment of dental patient	2 2
Week 15.	LECTURE: Motivation for oral health maintenance EXERCISES: Preventive and prophylactic treatment of dental patient REMARK: Partial exam will take place in 15th week of semester	2 2

COURSE IMPLEMENTATION PLAN IN X SEMESTER

Week	Form of classes and teaching	Hours
Week 1.	LECTURE: Risk assessment for evaluation of oral diseases (saliva, dental plaque, quality of nutrition) EXERCISES: Preventive and prophylactic treatment of dental patient, clinical examination and evaluation of gingival and periodontal health	2 2
Week 2.	LECTURE: Etiology of gingivitis and periodontitis EXERCISES: Preventive and prophylactic treatment of dental patient, clinical examination and evaluation of gingival and periodontal health	2 2
Week 3.	LECTURE: Initial gingival lesion, diagnosis, risk assessment EXERCISES: Preventive and prophylactic treatment of dental patient, clinical examination and evaluation of gingival and periodontal health	2 2
Week 4.	LECTURE: Principles of prevention of periodontal diseases EXERCISES:	2 2

	Preventive and prophylactic treatment of dental patient	
Week 5	LECTURE: Prevention of soft tissue diseases of the oral cavity EXERCISES: Preventive and prophylactic treatment of dental patient	2 2
Week 6.	LECTURE: Prevention of orthodontic anomalies EXERCISES: Preventive and prophylactic treatment of dental patient	2 2
Week 7.	LECTURE: Prevention of orofacial injuries EXERCISES: Preventive and prophylactic treatment of dental patient	2 2
Week 8.	LECTURE: Prevention of sports injuries EXERCISES: Preventive and prophylactic treatment of dental patient	2 2
Week 9.	LECTURE: Prevention of temporomandibular disorders EXERCISES: Preventive and prophylactic treatment of dental patient	2 2
Week 10.	LECTURE: Prevention of oral diseases in medically compromised patients EXERCISES: Preventive and prophylactic treatment of dental patient	2 2
Week 11.	LECTURE: Prevention of oral diseases in patients with special needs EXERCISES: Preventive and prophylactic treatment of dental patient	2 2
Week 12.	LECTURE: Preventive measures in pregnancy EXERCISES:	2 2

	Simulation of prenatal counseling	
Week13.	LECTURE: Preventive measures for adults and the elderly EXERCISES: Preventive and prophylactic treatment of dental patient	2 2
Week 14.	LECTURE: The role of dentists in recognizing and reporting of neglect and abuse EXERCISES: Preventive and prophylactic treatment of dental patient	2 2
Week 15.	LECTURE: Health-educational work in dentistry EXERCISES: Preventive and prophylactic treatment of dental patient REMARK: Partial exam will take place in 15th week of semester	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: 195 (45 + 150)** IX SEMESTER: 105 Lectures 30 Clinical practice/ practical classes 75 X SEMESTER: 95 Lectures 15 Clinical practice/ practical classes 75	
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*	Module 1 1. Anamnesis, clinical examination and preparation of the patient for making fixed restorations.		

determined by weeks, taking into account the specifics of organizational units)	2. Development of study models. 3. Basic principles of tooth preparation. 4. Indications and contraindications for dental crowns. 5. Reactive pulp changes and protection of the ground tooth. 6. Preparation of the gingival sulcus region before impression. 7. Impression techniques in fixed prosthodontics. 8. Try in procedure of a dental crown 9. Cementing and types of cements. 10. Restoration of endodontically treated teeth. 11. Clinical phases in therapy with custom cast dowel core. 12. Aesthetic crowns. 13. Aesthetic crowns with and without substructure, part 1. 14. Aesthetic crowns with and without substructure, part 2. 15. Aesthetic crowns with and without substructure, part 3. Module 2 1. Dental bridges. 2. Indications and contraindications for making a dental bridge. 3. Planning dental bridges 4. Specifics of tooth preparation for dental bridge. 5. Chewing forces. 6. Bridge statics. Bridge width, bridge height, bridge resistance, occlusion and bridge articulation. 7. Pontic design and the relationship to the existing ridge and soft tissue. 8. Types of dental bridges. 9. Try-in and cementing bridges. 10. Durability of fixed prosthetic works and complications during and after fixed prosthetic therapy. 11. Oral rehabilitation with combined works. 12. Aesthetic veneer 13. Inlay, onlay, overlay. 14. Clinical procedures for the treatment of non-carious lesions of hard dental tissues. 15. Aesthetic parameters important in prosthetic rehabilitation.
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[104]:	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: - Verification of acquired knowledge and activity during practical classes - maximum 4 points - Practical part of the exam - maximum 4 points - Partial exam in the 15th week of the first semester - maximum 46 points - Partial exam in the 15th week of the second semester, maximum 46 points - The final exam is taken by students who did not pass the partial exams. - At the end of the course the student can acquire a total of 100 points. The final exam consists of a test which is compiled for every exam term while students are divided into A and B groups (and if there is a need into additional C and D groups). Each part of the final exam must have at least 55% of correct answers. Test questions are not allocated the equal number of points. The decision on the allocation of points for each test is made by the course professor before testing. 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[105]:	**Obligatory literature:**

[104] 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

[105] 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

	1. Schillinburg TH, Hobo S, Whitsett l, Jacobi R. Osnove fiksne protetike 3 rd edition. Media ogled 2008. 2. Redžepagić S. Rubno zatvaranje u fiksnoj stomatološkoj protetici. Udruženje stomatologa Bosne i Hercegovine, Sarajevo, 1999. 3. Ćatović A. i sur. Klinička fiksna protetika. Ispitno štivo. Stomatološki fakultet Sveučilišta u Zagrebu, 1999. 4. Trifunović DM, Vujošević LJ. Stomatološka protetika: Fiksne nadoknade. 1st ed. Beograd: Europski centar za razvoj i mir; 1998. 5. Suvin M, Kosovel Z. Fiksna protetika. Zagreb: Školska knjiga; 1990. **Recommended literature:** 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 EXECUTION PLAN: FIXED PROSTHODONTICS- IX SEMESTER

Week	Form of teaching and materials (lectures, practical classes, independent practice)	Number of hours (lectures, practical classes)
Week 1.	Lecture: Anamnesis, clinical examination, radiological diagnostics, surgical, periodontal, conservative and orthodontic considerations in the preparation of fixed restorations. Practical classes: Taking anamnestic data from the patient, clinical examination, fixed prosthetic therapy plan and X-ray diagnostics.	2 5
Week 2.	Lecture: Development of study models (classic and virtual), development of classic and digital wax up and the clinical equivalent of mock up, smile planning using the concept of digital design (Digital smile design (DSD)). Practical classes: Demonstration of the laboratory part using classic method of waxing the compensation on the working model and digitally, making a silicone key demonstration of mock up and demonstration of Digital smile design (DSD).	2 5
Week 3.	Lecture: Elementary principles of tooth preparation for a dental crown. Design and position of the preparation margin Practical classes: preparation of teeth in anterior sector	2 5
Week 4.	Lecture: Indications and contraindications for crown making (absolute and relative)	2

	Practical classes: Preparation of teeth in transcanine sector	5
Week 5.	Lecture: Reactive changes on pulp and protection of the prepared tooth. The purpose and methods of making temporary fixed restorations Practical classes: Removing existing worn out crowns.	2 5
Week 6.	Lecture: Preparing the region of gingival sulcus prior to taking the impression. Gingival retraction methods Practical classes: Exposure of the preparation margin by displacing the gingival margin	2 5
Week 7.	Lecture: Impression procedure in fixed prosthodontics. Impression techniques (conventional and digital). Evaluation of the impression. Impression failures. Determination and registration of the intermaxillary relations. Practical classes: Choosing impression tray, taking impression. Registration of intermaxillary relations with wax register and elastomers or with the help of bite templates.	2 5
Week 8.	Lecture: Try-in of crown (Try-in framework, try-in final restoration) Practical classes: Digital Impression technique	2 5
Week 9.	Lecture: Cementation of restorations- types of cement used for permanent cementation. Procedures of conventional and adhesive cementation Practical classes:Color determination using classical and digital methods.	2 5
Week 10.	Lecture: Restoration of endodontically treated teeth. The consequences of endodontic therapy on the tooth. Indication for dental post. Absolute and relative contraindications. Types of dental post and core, choice of material. Practical classes: Production and cementation of an immediate crown by the direct method in the patient's mouth or temporary cementation of a temporary crown made using the laboratory method.	2 5
Week 11.	Lecture: Clinical phases in therapy with individual post (therapy plan, preparation of single-rooted and multi-rooted teeth, impression, cementation, preparation). Clinical phases in therapy with aesthetic post. Practical classes: Try-in framework of crown.	2 5
Week 12.	Lecture: Aesthetic crowns- introduction, types of aesthetic dental crowns, optical properties and color of natural tooth, choice of tooth color, color key, electronical color selection, color scheme by surface and layer.	2

	Practical classes: Try-in final restoration.	5
Week 13.	Lectures: Aesthetic crowns with and without substructure(definition, types of crown materials, indications, contraindications, advantages and disadvantages). Practical classes: Cementation of the crown	2 5
Week 14.	Lecture: Aesthetic crowns- introduction, types of aesthetic dental crowns, optical properties and color of natural tooth, choice of tooth color, color key, electronical color selection, color scheme by surface and layer. Practical classes: Preparation of the canal of single-rooted teeth and multi-rooted teeth	2 5
Week 15.	Lecture: Aesthetic crowns- introduction, types of aesthetic dental crowns, optical properties and color of natural tooth, choice of tooth color, color key, electronical color selection, color scheme by surface and layer. Practical classes:Cementation of the dowel core, preparation for crown, impression.	2 5

COURSE EXECUTION PLAN: FIXED DENTAL PROSTHETICS - X SEMESTER

Week 1.	Lecture: Dental bridges - basic concepts - Clinical diferentiation between fixed and mobile work - the psychological concept of the dental bridges Practical classes: Taking anamnestic data from the patient, clinical examination, treatment plan and X-ray diagnosis.	1 5
Week 2.	Lecture: Indications and contraindications for a dental bridge Practical classes:Principles of tooth preparation for dental bridges and parallelization of the abutment teeth	1 5
Week 3.	Lecture: Treatment plan for a dental bridge, Abutments - evaluation of individual abutment - topographic situation and loading of the abutment, selection of retainer for the bridge Practical classes: Removal of a dental bridge	1 5
Week 4.	Lecture: Principles of tooth preparation for dental bridges and parallelization of the abutment teeth. Preparations of periodantally weakened teeth. Practical classes: Exposure of the preparation margin	1

		5
Week 5.	Lecture: Functional forces, resistance forces - bioreactive forces. General static concept of dental bridges, forces in action, biophysical and mechanical laws in fixed prosthetics Practical classes: Impression procedures for dental bridges using the classical and digital methods.	1 5
Week 6.	Lecture: Static of dental bridge, the width of the bridge, height of the bridge, bridge resistance, occlusion and artilucation of a dental bridge Practical classes: Determination of intermaxillary relations and registration of central occlusion position.	1 5
Week 7.	Lecture: Pontic design and relation to the residual ridge Practical classes:Try-in framework of a dental bridge	1 5
Week 8.	Lecture: Types of dental bridges -cantilever dental bridge, -the front bridge, - the posterior bridge, semicircular, circular bridge, inlay bridge Practical classes:Try-in final restoration (dental bridge)	1 5
Week 9.	Lecture: Try-in and cementation of dental bridge Practical classes: Permanent cementation of bridges and patient education, motivation and oral hyhiene instruction	1 5
Week 10.	Lecture: Durability of fixed prosthetic works and complications during and after fixed prosthetic therapy. Practical classes: Preparation for esthetic veeners, impression technique, try-in.	1 5
Week 11.	Lecture: Oral rehabilitation with the usage of combined work Practical classes: Preparation for inlay, onlay, overlay; impression technique, try-in.	1 5
Week 12.	Lecture: Aesthetic veeners (indications, contraindications, planning and preparation, impression, color determination, try-in and luting). Practical classes: Adhesive cementation of aesthetic veeners, , inlays, onlays, and overlays.	1 5
Week 13.	Lecture: Inlay, onlay, overlay; selection of materials, types of preparations, indications and contraindications Practical classes: Clinical and functional analysis and evaluation of fixed prosthetic work.	1 5
Week 14.	Lectures: Clinical procedures for the treatment of non-carious lesions of hard dental tissues	1

	Practical classes: Clinical procedures in the treatment of non-carious lesions of hard dental tissues.	5
Week 15.	Lecture: Aesthetic parameters in prosthetic rehabilitation Practical classes: Clinical functional analysis and evaluation of fixed prosthetic work.	1 5

* 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*	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		

account the specifics of organizational units)	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[106]:	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[107]:	Required: 10. Berislav Topić, Periodontology, biology, immunopathogenesis, practice. Sarajevo – Zagreb, 2005. 11. Pašić E, Hadžić S, Gojkov Vulelić M and Hukić M: Oral microbiology, Faculty of dentistry in Sarajevo, 2017. Additional: 5. Jan Lindhe, Clinical periodontology and dental implantology. According to the 4th English edition (translation in Croatian language), Zagreb, 2004. 6. 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

[106] 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

[107] 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 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 Seminars:	1 2
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[108]:	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[109]:	Required: 12. Berislav Topić, Periodontology, biology, immunopathogenesis, practice. Sarajevo – Zagreb, 2005. 13. Pašić E, Hadžić S, Gojkov Vulelić M and Hukić M: Oral microbiology, Faculty of dentistry in Sarajevo, 2017. Additional: 7. Jan Lindhe, Clinical periodontology and dental implantology. According to the 4th English edition (translation in Croatian language), Zagreb, 2004. 8. 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

[108] 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

[109] 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 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[110]:	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[111]:	Required: 6. Torabinejad M, Walton RE. Endodoncija: načela i praksa. Naklada Slap, Zagreb 2010. 7. Konjhodžić A, Jakupović S, Tahmiščija I, Korać S**,** Hasić-Branković L, Džanković A. Endodontska propedeutika, 1 ed. Sarajevo: Stomatološki fakultet sa klinikama; 2017. 8. Živković S. i saradnici: Praktikum endodontske terapije. Data Status, 2012. Additional: 3. Ingle JI, Bakland LK. Endodontics. People's Medical Publishing House-USA, 2016. 4. Cohen S, Burns RC. Pathways of the pulp. Mosby Inc, St. Louis, 2015.

Course syllabus Endodontics IX semester

[110] **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**

[111] **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	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: SFSOS5091E	**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 with assessment structure[112]:	Acquired knowledge is assessed through partial exam, practical exam and final exam. Students will be continuously evaluated while working on the exercises. The partial knowledge test is performed during the semester and contains 20 points. By continuously evaluating the work on the exercises, the student can score a maximum of 20 points. The practical exam involves the assessment of acquired skills, taken in the 14th week of the semester. and carries a maximum of 10 points. In order to pass the practical exam, the student must score at least 6 points. The final exam is a written test that contains 10 theoretical questions and carries a total of 50 points. The correct answer to each question carries 5 points. To be considered passed, a student must score at least 21 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.

[112] **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**

	5 (F) - does not meet the minimum criteria, less than 55 points.
Literature[113]:	Required: -Contemporary Orthodontics, W Proffit and associates, Mosby., New York, USA -Orthodontics Current Principles and Techniques, T Graber, R L Vanarsdall, Mosby

Teaching plan Preclinical Orthodontics

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
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 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, periodontally compromised patients Practical exercises: They follow the lectures with their teaching content	2 1
Week 12.	Lecture: Retention and relapse 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

[113] **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 14.	Lecture: Adverse effects of orthodontic therapy 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.		

Code: SFSOM1102E		**Course title: OTORHINOLARYNGOLOGY**	
Level: undergraduate	**Year:** VI	**Semester:** XI	**ECTS points:** 4
Status: Obligatory		**Course load:** total-30 (lectures-15 + practicals–15)	
Proffesor in charge			
Entry requirements:	Verified attendance of courses of IX and X semesters		
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[114]:

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

[114]**Strukturabodova i bodovnikriterij za svakinastavni predmetutvrdujevijeceorganizacionejediniceprijepocetkastudijskegodine u kojoj se izvodi nastavu aiznastavnog predmeta u skladu sa clanom 64. st.6 Zakona o visokomobrazovanju Kantona Sarajevo**

	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[2]:	**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.. PRACTICALS: Presentation of surgical treatment of sinonasal tumors. Monitoring of ENT-HN surgical procedures	1 1
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 16	Final exam	
Week 17 - 20	Final exam –(retake)	

Item code: SFSOS5101E	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[115]:	Acquired knowledge is assessed through partial exam, practical exam and final exam. Students will be continuously evaluated while working on the exercises. The partial knowledge test is performed during the semester and contains 20 points. By continuously evaluating the work on the exercises, the student can score a maximum of 20 points. The practical exam involves the assessment of acquired skills- assessment of orthodontic treatment needs, recognition and detailed description of the present orthodontic malocclusion. It is taken in the 14th week of the		

[115] **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**

	semester. The evaluation of the acquired skills is done through a clinical examination of the patient or analysis of study models and carries a maximum of 10 points. In order to pass the practical exam, the student must score at least 6 points. The final exam is a written test that contains 10 theoretical questions and carries a total of 50 points. The correct answer to each question carries 5 points. To be considered passed, a student must score at least 21 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[116]:	Required: -Contemporary Orthodontics, W Proffit and associates, Mosby., New York, USA -Orthodontics Current Principles and Techniques, T Graber, R L Vanarsdall, Mosby

Teaching plan Clinical orthodontics

Week	Course form and content	Number of hours
Week 1.	Lecture: Diagnostic procedures (orthodontic anamnesis, clinical orthodontic examination of the patient, impressions, intraoral scanning, bite registration, X-rays, photographs) Practical exercises: They follow the lectures with their teaching content	2 2
Week 2.	Lecture: Classification of orthodontic anomalies Practical exercises: They follow the lectures with their teaching content	2 2
Week 3.	Lecture: Assessment of orthodontic treatment needs 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

[116] **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 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	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:** 4
Status: obligatory		**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[117]:	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[118]:	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	1 1

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	4. Practical (X-ray cabinet): Techniques of performing standard retro-alveolar radiography, special retro-alveolar imaging techniques	
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 11. Practical: Interpretation of X-rays-Conditions of the supporting apparatus of teeth and periapical tissues.	1 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:** 4
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[119]:	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.		

[119]**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[120]:	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). Exercises: Setting indications and active participation in providing dental care to people with difficulties in local and general anesthesia.	1 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

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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: 4**
Status: Obligatory		**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*	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		

specifics of organizational units)	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[121]:	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[122]:	Obligatory: 1. Berislav Topić, Periodontology, biology, immunopathogenesis, practice. Sarajevo -Zagreb, 2005. Supplementary:

[121] **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**

[122] **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**

	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**	**Broj ECTS kredita:** 4
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, wich 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 5. Analysis of the occlusal contacts in the intercuspal position (maximum intercuspation) 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 terapy-selective grinding 14. Irreversible occlusal terapy-guidelines for prosthetic terapy 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 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 (L) for all students - practical exercises
Assessment methods with assessment structure[123]:	Acquired knowledge and skills are tested continually during the course Within the total point score: - maximum 10% of points is envisaged for activities during exercise - maximum 40 % of points for the partial exam (As a rule, the partial exam is given in a written form and taken in the week 8. of the semester.) and - maximum 50 % of points for the final exam The final exam consists of a practical and theoretical (in a written form) part of the exam. The condition for taking the final exam test is passing the practical part of the final exam. Tests for partial and final exam are compiled for each exam term. Students sit the exam divided into A and B groups (if necessary, into C and D groups). The final exam 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. Decision on point scoring is made by the course leader before the exam. 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

[123] 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

	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 [124]:	Required: - Ajanović M. i sar. Osnovi gnatologije. Stomatološki fakultet s klinikama Univerziteta u Sarajevu. Sarajevo, 2015. - Okeson JP. Management of Temporomandibular Disorders and Occlusion. 8th Edition Mosby Elsevier, 2019. Recommended: - 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

[124] 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 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 - Clinical examination and filling medical history form –dental status, periodontal status, tooth abrasion.	1 2
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 - 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	1 2
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 - Horzontal determinant of occlusalmorpfology 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 terapy-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 terapy-guidelines for prosthetic terapy: • 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: SFSIS0908E	**Course Title: GERONTOSTOMATOLOGY**		
Cycle: integrated	**Year: V**	**Semestar: X**	**Number of ECTS credits:** 4
Status: Elective course		**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[125]:	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[126]:	Required: 1. Adnan Ćatović i sur. Gerontostomatologija. Medicinska naklada, Zagreb, 2010. ili 2. Adnan Ćatović i sur. Dentalna medicina starije dobi u praksi. Medicinska naklada, Zagreb, 2018. Additional: 1. Pedersen P-H, Walls AWG, Ship JA. Textbook of geriatric dentistry, 3rd Ed. Wiley-Blackwell, New York, 2015. 2. 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

[125] **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**

[126] **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 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: SFSIS5103E	**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[127]:	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 writing and carries 20 points. By continuously evaluating the work on the exercises, the student can gain a maximum of 20 points. The practical exam involves the assessment of acquired skills, is taken in the 14th week of the semester and the maximum number of points is 10. In order for the practical exam to be considered passed, the student must win at least 6 points. The number of points won is added to the other points when forming the final grade. The final exam is a written test that contains 10 theoretical questions and carries a total of 50 points. The correct answer to each question carries 5 points. To be considered passed, a student must score at least 21 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[128]:	Required:

[127] **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**

[128] **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**

	-Contemporary Orthodontics, W Proffit and associates, Mosby., New York, USA -Orthodontics Current Principles and Techniques, T Graber, R L Vanarsdall, Mosby

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: The impact of malocclusions on quality of life Practical exercises: They follow the lectures with teaching content	2 1
Week 4.	Lecture: Development of speech function and disorders Practical exercises: They follow the lectures with teaching content	2 1
Week 5.	Lecture: Early orthodontic treatment - main goals of early orthodontic treatment Practical exercises: They follow the lectures with teaching content	2 1
Week 6.	Lecture: Early orthodontic treatment of class II malocclusion Practical exercises: They follow the lectures with teaching content	2 1
Week 7.	Lecture: Early orthodontic treatment of class III malocclusion Practical exercises: They follow the lectures with teaching content	2 1
Week 8.	Lecture: Prevention of malocclusions - possibilities and limitations Practical exercises: They follow the lectures with teaching content	2 1
Week 9.	Lecture: Myofunctional therapy Practical exercises: They follow the lectures with teaching content	2 1
Week 10.	Lecture: Possibilities of interceptive orthodontics in the treatment of parafunctions and dysfunctions Practical exercises: They follow the lectures with teaching content	2 1
Week 11.	Lecture: Possibilities of interceptive orthodontics in the treatment of missing teeth (hypodontia, caries, dental trauma) Practical exercises: They follow the lectures with teaching content	2 1
Week 12.	Lecture: Possibilities of interceptive orthodontics in the treatment of functional disorders (cross-bite) Practical exercises: They follow the lectures with teaching content	2 1
Week 13.	Lecture: Patients selection for eruption guidance Practical exercises: They follow the lectures with teaching content	2 1
Week 14.	Lecture: Preventive and interceptive measures of specific conditions (impaction/retention of canine) Practical exercises: They follow the lectures with teaching content	2 1
Week 15.	Lecture: When is the best time to refer to an orthodontist? 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:** 4
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[129]:	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[130]:	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

[129] 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

[130] 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 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: SFSIS5104E	**Course Title: TEMPOROMANDIBULAR DISORDERS**		
Cycle : Integrated	**Year: V**	**Semester: X**	**Number of ECTS Credits: 4**
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 – condye-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. Bruxism, diagnosis and therapy 9. Clinical examination and additional diagnostic tests 10. Protocols in the diagnosis of temporomandibular disorders 11. Occlusal appliance therapy 12. Fabrication of the occlusal appliance by conventional method 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 (L) for all students and - practical exercises
Assessment methods with assessment structure[131]:	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 - Examination of acquired knowledge and competence in clinical exercises - maximum of 10 points - Partial exam - maximum 30 points - Final exam - maximum 50 points The final exam is taken in the form of a test that is compiled for each examination period divided into groups A, B (if necessary C, D). The final exam can be scored only if each test has at least 55% correct answers.

[131] 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

	Test questions are not allocated the equal number of points. A student can score a maximum of 100 points. 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[132]:	Obligatory: 4. 1. Okeson PJ. Management of Temporomandibular Disorders and Occlusion. 6th Mosby,2006. 5. 2.Edward F Wright: Manual of Temporomandibular disorders; Willey Blackwell third ed, 2014. Recommended**:** 1. Laskin D.M, Greene C.S, Hylander W.L. Temporomandibular disorders, an evidence - based approach to diagnosis and Treatment..Quintessence Publishing Co,Inc. Chicago, 2006. 2. Bumann A, Lotzmann U. TMJ Disorders and Orofacial pain. The role of Dentistry in a Multidisciplinary Diagnostic Approach. Thieme Stuttgart, New York;2002. 3. 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,	1 1

	functional manipulation.	
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 and XII**	**Number of ECTS credits:** 7
Status:obligatori		**Total number of hours: 120** Optionally develop the distribution of hours by type: **Lectures** 2 (60) **Exercises** 2 (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**]		
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[133]:	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[134]:	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)

[133] **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**

[134] **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**

	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: SFSOS1105E	**Course Title: Dental Implants**		
Cycle: integrated	**Year: VI**	**Semester: XI and XII**	**Number of ECTS credits: 8**
Status: Obligatory		**Total number of hours: 120 (60+60)** XI semester **Lectures** 30 **Exercises** 30 XII semester **Lectures** 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 semestar) and Module 2. (XII semestar) Modul 1. 1.Anatomy consideration in implant dentistry. Surgical anatomy of the maxilla. 2. Surgical 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. Surgical protocol of implant placement “STEP BY STEP” 10. Surgical protocol of implant placement “STEP BY STEP” Complications during and after implant placement. 11. Prosthodontic treatment in patients with dental implants. 12. Seminars for students - Discussion of previous lecture themes. 13. Sinus lift. 14. Sinus lift. Placement and condensation of artificial bone. 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. Surgical part of implantology - XI semester Knowledge: - Anatomic basis of the maxilla and mandible from dental implantology aspect - Clinical biomechanics in implant dentistry - Osseointegration - Pre-implant prosthodontics consideration - Surgical protocol of implant placement - Sinus lift - Complications during and after implant placement Skills: - Make diagnostic procedures and treatment plan, analyze different images in view of assessing the implant placement - Implant placement in the maxilla and mandible - Set up the suture Competencies: Independently perform the surgical stages of implant placement Module 2. Prosthetic part of implantology - 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:	Interactive lectures Practical exercises

Assessment methods with assessment structure[135]:	Acquired knowledge and skills are tested continually during the semester. The structure of the total number of points the students can acquire for activities and tests is as follows: a) Activities in lectures- maximum 6 points b) Assessment of acquired knowledge and activities in practical exercises - clinical work with patients - maximum 14 points c) Partial exam in the 15th week of the first semester - maximum 30 points d) Final exam - consists of practical and theoretical part of the exam - maximum 50 points Practical part of the exam is a precondition for sitting the theoretical part of the assessment. Practical part of the exam is not valid unless the theoretical part is successfully completed. Practical part of the exam - maximum 10 points Theoretical part of the exam - maximum 40 points The final exam consists of a test which is compiled for every exam term while students are divided into A and B groups (and if there is a need into C and D groups). Each part of the final exam must have at least 55% of correct answers. Test questions are not allocated the equal number of points. The decision on the allocation of points for each test is made by the course professor before testing. At the end of the course the student can acquire a total of 100 points. 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.

[135] 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[136]:	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 IMPLANTS 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. Surgical 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:. b. Surgical 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 c. Bone Classification d. Modeling and remodeling	2

[136] 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

	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 suture	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	2 2
Week 9.	Lecture: Surgical protocol of implant placement “STEP BY STEP” a. Surgical set introduction b. implantology set introduction c. Implant positioning at partial edentulous patient d. Implant positioning at complete edentulous patient Exercises: Implant placement in maxilla	2 2
Week 10.	Lecture: e. Surgical incision f. Pilot drill g. Twist drill h. Bone spreading i. Treatment of the cortex before implant placement j. Implant and cover screw placement	2

	k. Selection of suture technique and surgical thread l. Bone replacement before, during and after implant insertion m. Medical treatment of patients with dental implants n. Complications during and after implant placement Exercises: Sinus lift technique	 2
Week 11.	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 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: Impression techniques and pour cast model	2 2
Week 12.	Seminars for students- Discussion of previous lecture themes Exercises: Abutments	2 2
Week 13.	Lecture: Sinus lift a. Anatomy of maxillary sinus b. Learning about surgical and implant tools and materials used in sinus lift procedure Exercises: Fixation of finished prosthodontics	2 2
Week 14.	Lecture: c. Opening of the lateral wall d. Elevation of sinus mucosa- Schneiderian membrane e. Resorbable membrane placement f. Placement and condensation of artificial bone g. Implant and SIS positioning h. *Nonresorbable* membrane placement i. Selection of suture technique and surgical thread j. Medical treatment of patients k. Complications during and after sinus lift Exercises: LIVE SURGERY	2 2
Week 15.	Recapitulation on previous Themes Exercises: LIVE SURGERY	2 2

COURSE SYLLABUS: DENTAL IMPLANTS 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: SFSOS6111E	**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
Assessment methods with assessment structure[137]:	Acquired knowledge is assessed through partial exam, practical exam and final exam. Students will be continuously evaluated while working on the exercises. The partial knowledge test is performed during the semester and contains 20 points. Continuous evaluation of work on exercises is done by the student determining the indications for different types of orthodontic therapy on patients and study models. Each specific indication carries 2 points, the student can win a maximum of 20 points. The practical exam involves the assessment of acquired skills - setting an indication for different orthodontic appliances. It is taken in the 14th week of the semester. The evaluation of the acquired skills is done through a clinical examination of the patient or analysis of study models and carries a maximum of 10 points. In order to pass the practical exam, the student must score at least 6 points. The final exam is a written test that contains 10 theoretical questions and carries a total of 50 points. The correct answer to each question carries 5 points. To be considered passed, a student must score at least 21 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.
Literatura[138]:	Required: -Contemporary Orthodontics, W Proffit and associates, Mosby., New York, USA -Orthodontics Current Principles and Techniques, T Graber, R L Vanarsdall, Mosby

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

[137] **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**

[138] **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 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
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 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, periodontally compromised patients Practical exercises: They follow the lectures with their teaching content	2 1
Week 12.	Lecture: Retention and relapse 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: Adverse effects of orthodontic therapy 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[139]:	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

[139] 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

	- (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[140]:	Required: 14. Berislav Topić, Periodontology, biology, immunopathogenesis, practice. Sarajevo – Zagreb, 2005. Additional: 15. Jan Lindhe, Clinical periodontology and dental implantology, According to the Fourth edition (translation in Croatian language), Zagreb, 2004. 16. 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

[140] 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 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:	1. Physical and psychological development and growth of a child. 2. Types of child personalities. Behavioral problems and behavioral control techniques.		

(If necessary, the performance plan is determined by taking into account the specifics of organizational units)	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. 14.
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[141]:	Required: • Jurić H.(urednik), Dječija dentalna medicina . Naklada Slap, Zagreb, 2015. • Kobašlija S, Vulićević ZR, Jurić H i sar. Minimalna invazivna terapija (2012).

[141] **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**

[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

	• 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[142]:	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[143]:	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

[142] **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**

[143] **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 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: SFSOS1201E	**Course Title: RESTORATIVE DENTISTRY-PROSTHETIC DENTISTRY**		
Cycle: Integrated study	**Year: VI**	**Semester: XII**	**Number of ECTS credits: 8**
Status: Obligatory		**Total number of hours: 165** Optionally develop the distribution of hours by type: **Lectures** 75 **Exercises** 90	
Teaching participants:	**Teachers and associates selected in the field to which the subject belongs / subject** **Department of Prosthodontics with Dental Implantology** **Department of Dental Pathology with Endodontics** **Department of Oral Medicine and Periodontology** **Department of Oral Surgery 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:	To teach students the skills in independent clinical work with patients in restorative dentistry - prosthetic dentistry.
Thematic units: (*If necessary, the performance plan is determined by taking into account the specifics of organizational units*)	1. A manifestation of local and systemic illnesses and lesions on the periodontium. High-risk patients in Periodontology. 2. Focal infections. A medication therapy in periodontology. Preprosthetic preparation of periodontium. 3. A clinical manifestation and diagnostic protocol of occlusal disorders. Regenerative procedures in periodontal diseases. Mucogingival therapy protocol. 4. Analysis and treatment plan and clinical decision making determinig factors in fixed prosthodontics. Prosthetic therapy of patients with fixed prosthodontics restorations through clinical examples. 5. Bruxism. Prosthetic treatment in the medically compromised patients. 6. Analysis and treatment plan and clinical decision making determinig factors in removable prosthodontics. Prosthetic therapy of patients with removable and combined fixed and removable prosthodontics through clinical examples. 7. Temporomandibular disorders, diagnosis and therapy. 8. Analysis and treatment plan and clinical decision making determinig factors in implant prosthodontics. Prosthetic therapy of patients with implant prosthodontics restorations through clinical examples. 9. Basic principles of oral surgical operation with emphasis on intraoperative and postoperative complications. Cysts. Acute odontogenic infection. 10. Traumatic injuries of dentoalveolar system. Oral surgical procedures in patients of risk groups. Apicoectomy. 11. Oroantral and oronasal communication and fistula. Impacted teeth. 12. Importance of medical anamnesis, diagnosis. Endodontic treatment of patients with cardiovascular disease, in diabetic patients and patients with blood diseases. 13. Endodontic treatment of patients with cancer, after organ transplantation and patients with mental illness and patients with musculoskeletal disorders 14. Endodontic treatment in patients with infectious diseases, Human Immunodeficiency Virus (HIV), and patient with substance abuse. Management of the endodontic patients with neurological diseases. Medicaments in endodontics. 15. Pain control for endodontic procedures in patients with systemic disorders.
Learning outcomes:	Knowledge: After attending lectures, the student acquires attitudes. Complete overview of the importance of proper selection of dental therapy and conducting therapy - the planning of indicated therapy - the realization of indicated therapy Skills: To create independently and conduct therapy from restorative dentistry-prosthetic dentistry

	Competencies: Independent student's work in realization of completely indicated therapy in restorative dentistry – prosthetic dentistry
Teaching methods:	- lectures - practical exercises on the patient, exercises for all students
Assessment methods with assessment structure[144]:	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 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 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 final exam can be awarded points only if the student achieves at least 55% of correct answers in exam. Not all questions in the test need to be graded with the same number of points. The decision on how to score questions from the test is made by the subject teachers before taking the test. A student can score a maximum of 100 points. In accordance with the above the 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 few errors, carries - 85-94 points; o) 8 (C) - average with noticeable errors, carries - 75 -84 points; p) 7(D) - generally good but with significant errors, carries- 65-74 points; q) 6(E) - satisfies the minimum criteria, carries - 55-64 points; r) 5(F,FX) - does not meet the minimum criteria, less than 55 points.
Literature[145]:	All textbooks - Periodontology, Dental prosthetics, Oral Surgery and Restorative dentistry. Literature - articles available online in full versions from the reference database (PubMed, SCOPUS, Science Citation Index Expanded, EBSCO) and Google Scholar, Semantic Scholar, SciELO, SpringerLink, Wiley Online Library.

[144] 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

[145] 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 SYLLABUS: RESTORATIVE DENTISTRY-PROSTHETIC DENTISTRY

Week	Form of teaching and materials (lectures, exercises, independent practice)	Number of hours (lectures, exercises, independent practice)
Week 1.	Lecture: 1. A manifestation of local illnesses and lesions on the periodontium: clinical picture, diagnosis, differential diagnosis, a plan of therapy, and patient's motivation and education in oral hygiene. 2. A manifestation of systemic disease on the periodontium: clinical picture, diagnosis, differential diagnosis, a plane of therapy, and patient's motivation and education in oral hygiene. 3. High-risk patients in Periodontology. Making a specific plan for the treatment of periodontal diseases. Exercise: Presentation of anamnestic diagnostic procedures and clinical examinations in Periodontology, demonstration of work with high-risk patients and systemic diseases, use of the atlas and individual work with the patient	5 6
Week 2.	Lecture: 1. Focal infections - diagnosis, treatment plan and preparing a patient for therapy protocol with these states. 2. A medication therapy in periodontology - the local and systemic medical therapy (indications, contraindications and side effects). 3. Pre-prosthetic preparation of periodontium - the importance of the therapy of the periodontal diseases before the beginning of prosthetic remediation. Exercise: A demonstration of clinical examinations with X-ray analysis, the local and systemic applications of medical therapy and individual work with the patient.	5 6
Week 3.	Lecture: 1. A clinical manifestation and diagnostic protocol of occlusal disorders, selective drilling in a therapy protocol of occlusal imbalance. 2. Regenerative procedures in periodontal diseases, guided tissue regenerations, guided bone regenerations, use of collagen membranes, growth factors, platelet-rich plasma, therapeutic techniques, materials, and instruments. 3. Mucogingival therapy protocol- indications, contraindications, surgical technics, and instruments Exercise: A demonstration of clinical examinations, analysis occlusal disorder by means of clinical examination, X-ray analysis, therapy procedures in the elimination of occlusal imbalance. presentation of anamnestic diagnostic procedures and clinical examination patient with a mucogingival anomaly, therapy procedures, use of the atlas and available literature, demonstration of the techniques and instruments for mucogingival surgery.	5 6
Week 4.	Lecture: 1. Analysis and treatment plan and clinical decision making determinig factors in fixed prosthodontics	5

	2. Prosthetic therapy of patients with fixed prosthodontics restorations through clinical examples Exercise: Diagnostic and therapeutic procedures in prosthodontics rehabilitation of patients	6
Week 5.	Lecture: 1. Bruxism, etiology, diagnosis, therapeutic possibilities 2. Prosthetic treatment in the medically compromised patients Exercise: Diagnostic and therapeutic procedures in prosthodontics rehabilitation of patients	5 6
Week 6.	Lecture: 1. Analysis and treatment plan and clinical decision making determinig factors in removable prosthodontics 2. Prosthetic therapy of patients with removable and combined fixed and removable prosthodontics through clinical examples Exercise: Diagnostic and therapeutic procedures in prosthodontics rehabilitation of patients	5 6
Week 7.	Lecture: 1. Temporomandibular disorders, etiology, diagnosis, differential diagnosis 2. Therapy of temporomandibular disorders Exercise: Diagnostic and therapeutic procedures in prosthodontics rehabilitation of patients	5 6
Week 8.	Lecture: 1. Analysis and treatment plan and clinical decision making determinig factors in implant prosthodontics 2. Prosthetic therapy of patients with implant prosthodontics restorations through clinical examples Exercise: Diagnostic and therapeutic procedures in prosthodontics rehabilitation of patients and patients with temporomandibular disorders	5 6
Week 9.	Lecture: 1. Basic principles of oral surgical operation with emphasis on intraoperative and postoperative complications 2. Cysts (definition, classification, clinical condition, diagnostic and possibility treatment) 3. Acute odontogenic infection. Stages of odontogenic infection. Subperiosteal and submucous abscess. Phlegmon of the mouth floor. Odontogenic infection therapy – physical and medicaments' approach. Therapeutic use of antibiotics. Exercise: Diagnostic and therapeutic procedures in oral surgery patients (individual work)	5 6
Week 10.	Lecture: 1. Traumatic injuries of dentoalveolar system. The most common causes of primary and permanent teeth injuries. Treatment of patient with tooth injury. Classification of injuries. 2. Oral surgical procedures in patients of risk groups. 3. Apicoectomy, definition, indications and contraindicatios, tooth preparation for apicoectomy, operative process, complications Exercise: Diagnostic and therapeutic procedures in oral surgery patients (individual work)	5 6
Week 11.	Lecture: 1. Oroantral and oronasal communication and fistula (definition,etiology, diagnosis and therapy).	5

	2. Impacted teeth (definition, diagnosis, classification, surgical removal of impacted teeth, surgical - orthodontic treatment in impacted teeth. Exercise: Diagnostic and therapeutic procedures in oral surgery patients (individual work)	6
Week 12.	Lecture: 1. Importance of medical anamnesis, diagnosis 2. Endodontic treatment of patients with cardiovascular disease 3. Endodontic treatment in diabetic patients 4. Endodontic treatment of patients with blood diseases Exercise: Work with patients. History, status, X-ray analysis, treatment plan, conservative restorative procedures, endodontic therapy.	5 6
Week 13.	Lecture: 1. Endodontic treatment of patients with cancer. 2. Endodontic treatment in patients after organ transplantation. 3. Endodontic treatment in patients with mental illness 4. Endodontic treatment patients with musculoskeletal disorders Exercise: Work with patients. History, status, X-ray analysis, treatment plan, conservative restorative procedures, endodontic therapy.	5 6
Week 14.	Lecture: 1. Human Immunodeficiency Virus (HIV) and endodontics. 2. Endodontic management of patient with substance abuse 3. Management of the endodontic patients with neurological diseases 4. Medicaments in endodontics Exercise: Work with patients. History, status, X-ray analysis, treatment plan, conservative restorative procedures, endodontic therapy.	5 6
Week 15.	Lecture: 1. Pain control for endodontic procedures in patients with systemic disorders 2. Case report **3.** Case report Exercise: Work with patients. History, status, X-ray analysis, treatment plan, conservative restorative procedures, endodontic therapy.	5 6

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[146]:	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:

[146] 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 (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[147]:	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.	2

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	Practical exercise: following the lecture topic.	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: SFSIS1106E	**Course Title: RECONSTRUCTION OF ENDODONTICALLY TREATED TEETH**		
Cycle: Integrated	**Year: VI**	**Semester: XI**	**Number ECTS credit: 4**
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 prosthetics 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. History, 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 dowel core.		

	10. Adhesive cementation process. 11. Individual dowel core. 12. Prefabricated posts. 13. Reconstruction of bite height. 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 dowel core. - Take the impression of a root canal. - Test the dowel core (post and core). - Cement the dowel core (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[148]:	Acquired knowledge and skills are tested continuously during the semester.

[148] 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

	In the structure of the total number of points, the student can achieve during the semester for activities and knowledge tests: - Activity on exercises - maximum 4 points - Partial exam in the 8th week of the 11th semester - maximum 46 points, minimum 25.3 points. The final exam consists of a practical and a theoretical part of the exam. - Practical part of the exam - maximum 4 points (minimum 2.2 points) - Theoretical part - 46 points (minimum 25.3 points) A student who did not pass the partial knowledge test takes the final exam and takes everything he did not pass, the partial exam and / or the final exam. The 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) and the practical part of the exam. Partial and final exams are scored only 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 from the test is made by the responsible teachers before taking the test. According to the above, the rating scale is 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, bears 75-84 7 (D) - generally good, but with significant shortcomings, carries 65-74 points; 6 (E) - meets the minimum criteria, carries 55-64 points; 5 (F, FX) - does not meet the minimum criteria, less than 55 points.
Literature[149]:	Mandatory: 1. Schillinburg TH, Hobo S, Whitsett l, Jacobi R. Osnove fiksne protetike 3 rd edition. Media ogled 2008. 2. Redžepagić S. Rubno zatvaranje u fiksnoj stomatološkoj protetici. Udruženje stomatologa Bosne i Hercegovine, Sarajevo, 1999. 3. Ćatović A. i sur. Klinička fiksna protetika. Ispitno štivo. Stomatološki fakultet Sveučilišta u Zagrebu, 1999. 4. Trifunović DM, Vujošević LJ. Stomatološka protetika: Fiksne nadoknade. 1st ed. Beograd: Europski centar za razvoj i mir; 1998. 5. Suvin M, Kosovel Z. Fiksna protetika. Zagreb: Školska knjiga; 1990. 6. Konjihodžić A, Jakupović S, Tahmiščija I, Korač S, Branković-Hasić L, Džanković A. Endodontska propedeutika. I Univerzitetsko izdanje, Stomatološki fakultet sa klinikama Sarajevo, 2017. 7. Torabinejad M, Walton R. Endodoncija: načela i praksa. Prijevod 4.

[149] 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 on the basis of which it prepares and takes the exam. in accordance with Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton

	izdanja. Naklada Slap, 2010. 8. 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 dowel core (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 dowel 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 dowel 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: Dowel 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 bite height with dowel cores. Exercises: Crown cementation procedure.	1 2
Week 14.	Lectures: Selection of prosthetic restoration on certain types of dowel 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:** 4
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[150]:	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[151]:	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

[150]**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**

[151]**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 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: 4**
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[152]:	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[153]:	Required: 17. Berislav Topić, Dental practice and diseases of individual organ systems, Sarajevo-Zagreb, 2008. 18. 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

[152] 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

[153] 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: 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: SFSIS1002E	**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*	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.		

account the specifics of organizational units)	
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[154]:	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 writing and carries 20 points. By continuously evaluating the work on the exercises, the student can gain a maximum of 20 points. The practical exam involves the assessment of acquired skills, is taken in the 14th week of the semester and the maximum number of points is 10. In order for the practical exam to be considered passed, the student must win at least 6 points. The number of points won is added to the other points when forming the final grade. The final exam is a written test that contains 10 theoretical questions and carries a total of 50 points. The correct answer to each question carries 5 points. To be considered passed, a student must score at least 21 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[155]:	Required: 1.Proffit WR, Fields HW, Sarver DM. Contemporary orthodontics, 4th edition. St. Louis: Mosby 2.Orthodontics Current Principles and Techniques, T Graber, R L Vanarsdall, Mosby

Teaching plan Presurgical Orthodontic Treatment

Week	Course form and content	Number of hours

[154] **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**

[155] **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 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
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:** 4
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[156]:	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[157]:	Required: 9. Versiani, M. A., Basrani, B., Sousa-Neto, M. D. (Eds.). The root canal anatomy in permanent dentition. Cham: Springer International Publishing. 2019. 10. De Deus G. Shaping for cleaning the root canals : a clinical based strategy. Springer Nature, 2021. 11. Vertucci FJ. Root canal morphology and its relationship to endodontic procedures. Endodontic topics. 2005;10(1):3-29.

[156] **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**

[157] **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**

	Additional: 1. Peters O.A. The Guidebook to Molar Endodontics Springer-Verlag Berlin Heidelberg. 2017.

ACourse Syllabus
Endodontic Management of Teeth with Complex Morphology
XI semester

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: SFSIS1108E	**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[158]:	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 writing and carries 20 points. By continuously evaluating the work on the exercises, the student can gain a maximum of 20 points. The practical exam involves the assessment of acquired skills, is taken in the 14th week of the semester and the maximum number of points is 10. In order for the practical exam to be considered passed, the student must win at least 6 points. The number of points won is added to the other points when forming the final grade. The final exam is a written test that contains 10 theoretical questions and carries a total of 50 points. The correct answer to each question carries 5 points. To be considered passed, a student must score at least 21 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.		

[158] **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[159]:	Required: 1.Proffit WR, Fields HW, Sarver DM. Contemporary orthodontics, 4th edition. St. Louis: Mosby 2.Orthodontics Current Principles and Techniques, T Graber, R L Vanarsdall, Mosby

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: Fixed orthodontic treatment of medically compromised patients Practical exercises: They follow the lectures with teaching content	2 1

[159] **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 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:** 4
Status:		**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[160]:	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[161]:	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.

Course syllabus Ambulantal oral and maxillofacial surgery

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

[160] **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**

[161] **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 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.	