

**MINISTRY OF HEALTH PROTECTION OF UKRAINE**

**ODESSA NATIONAL MEDICAL UNIVERSITY**

Department of Orthopedic Dentistry

APPROVED

Vice-rector for scientific and pedagogical work

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«        »        2023

**WORKING PROGRAM IN THE DISCIPLINE OF**  
**ORTHOPEDIC DENTISTRY**

Higher level: second (master's)

Field of knowledge: 22 "Health care"

Specialty: 221 "Dentistry"

Educational and professional: "Dentistry"

2023



### 1. Description of the academic discipline

Name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristics of the academic discipline
The total number of: Credits: 13 Hours: 390 Content modules: 3	Branch of knowledge 22 "Health care"  Specialty 221 "Dentistry"  Level of higher education Second (master's)	<i>Full-time education</i>
		<i>Mandatory discipline</i>
		<i>Year of training 3-5</i>
		<i>Semester IV-X</i>
		<i>Lectures (42/44 *hours)</i>
		<i>Seminars (0 hours)</i>
		<i>Practical (188/176*hours)</i>
		<i>Laboratory (0 hours)</i>
		<i>Independent work (160/170* hours) including individual tasks (0 hours)</i>
	<i>Form of final control – credit, exam</i>	

\* - hours for students of higher education with a shortened period of study.

### 2. The purpose and tasks of the educational discipline— competencies, program learning outcomes

**Goal**teaching is the achievement of the goals of the discipline "Orthopedic Dentistry", which are established on the basis of the OPP for training a doctor in the specialty "Dentistry" in accordance with the block of its content modules and is the basis for building the content of this course. The description of goals is formulated through skills in the form of target tasks (actions). On the basis of the final goals for the content module, specific goals are formulated in the form of certain skills (actions), target tasks that ensure the achievement of the final goal of studying the discipline.

**Task:**study of the mandatory discipline "Orthopedic dentistry" is: to teach students of higher education to examine patients in a clinical office using dental equipment and tools; to teach applicants to analyze diagnostic models of patients with various types of pathology of the maxillofacial apparatus; on the basis of clinical thinking, choose methods of restoring defects of teeth and dental rows; to teach applicants to perform practical skills during the clinical reception of patients with various defects of the dento-maxillofacial apparatus; teach applicants to solve situational problems with a clinical orientation.

The process of studying the discipline is aimed at forming elements of the following competencies:

#### **Integral competence(IR):**

IR. The ability to solve typical and complex specialized tasks and problems in the field of health care in the specialty "Dentistry", in professional activities or in the learning process, which involves conducting research and/or implementing innovations and is characterized by the complexity and uncertainty of conditions and requirements.

#### **General(ZK):**

ZK1. Ability to abstract thinking, analysis and synthesis.

ZK2. Knowledge and understanding of the subject area and understanding of professional activity.

ZK3. Ability to apply knowledge in practical activities.

ZK11. Ability to work in a team.

**Special(SK):**

- SK1. Ability to collect medical information about the patient and analyze clinical data.
- SK2. The ability to interpret the results of laboratory and instrumental research.
- SK3. Ability to diagnose: determine preliminary, clinical, final, accompanying diagnosis, emergency conditions.
- SK5. The ability to design the process of providing medical care: to determine the approaches, plan, types and principles of treatment of diseases of the organs and tissues of the oral cavity and maxillofacial area.
- SK6. The ability to determine a rational regimen of work, rest, and diet in patients in the treatment of diseases of the organs and tissues of the oral cavity and maxillofacial region.
- SK7. The ability to determine the management tactics of patients with diseases of the organs and tissues of the oral cavity and maxillofacial region with concomitant somatic diseases.
- SK8. Ability to perform medical and dental manipulations.
- SK12. Ability to organize and conduct a screening examination in dentistry.
- SK14. Ability to maintain regulatory medical documentation.
- SK16. Ability to organize and carry out rehabilitation measures and care for patients with diseases of the oral cavity and ASHL.

**Program learning outcomes (PRL):**

- PRN 1. Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using the previous data of the patient's history, the data of the patient's examination, knowledge about the person, his organs and systems, establish a probable nosological or syndromic preliminary clinical diagnosis of a dental disease (according to list 2)
- PRN 2. Collect information about the patient's general condition, evaluate the patient's psychomotor and physical development, the condition of the maxillofacial organs, based on the results of laboratory and instrumental studies, evaluate information about the diagnosis (according to list 5).
- PRN 3. Prescribe and analyze additional (mandatory and optional) examination methods (laboratory, X-ray, functional and/or instrumental) according to list 5, of patients with diseases of organs and tissues of the oral cavity and maxillofacial region for differential diagnosis of diseases (according to list 2).
- PRN 4. To determine the final clinical diagnosis in compliance with the relevant ethical and legal norms, by making a reasoned decision and logical analysis of the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis under the control of the managing physician in the conditions of a medical institution (according to the list 2.1).
- PRN 5. Establish a diagnosis of emergency conditions under any circumstances (at home, on the street, in a medical institution), in conditions of emergency, martial law, lack of information and limited time (according to list 4).
- PRN 8. Determine the approach, plan, type and principle of treatment of dental disease (according to list 2) by making a reasoned decision according to existing algorithms and standard schemes.
- PRN 9. Determine the nature of the work regime, rest and the necessary diet in the treatment of dental diseases (according to list 2) on the basis of a preliminary or final clinical diagnosis by making a reasoned decision according to existing algorithms and standard schemes.
- PRN 10. Determine the tactics of managing a dental patient with somatic pathology (according to list 3) by making a reasoned decision according to existing algorithms and standard schemes.
- PRN 11. To carry out treatment of basic dental diseases according to existing algorithms and standard schemes under the control of the head physician in the conditions of a medical

institution (according to list 2.1).

PRN 21. Perform medical manipulations on the basis of a preliminary and/or final clinical diagnosis (according to lists 2, 2.1) for different segments of the population and in different conditions (according to list 6).

PRN 22. To perform medical stomatological manipulations on the basis of preliminary and/or final clinical diagnosis (according to lists 2, 2.1) for different segments of the population and in different conditions (according to list 7).

**As a result of studying the academic discipline, the student of higher education must:**

• **Know:**

The purpose of teaching the educational discipline "Orthopedic Stomatology" is the professional formation of a future specialist capable of solving clinical problems using the acquired knowledge and skills from the discipline, which involves the integration of the teaching of the discipline with therapeutic, surgical and pediatric dentistry.

• **Be able:**

The main tasks of studying the educational discipline "Orthopedic Stomatology" are: to teach applicants to examine patients in a clinical office using dental equipment and tools; to teach applicants to analyze diagnostic models of patients with various types of pathology of the maxillofacial apparatus; on the basis of clinical thinking, choose methods of restoring defects of teeth and dental rows; to teach applicants to perform practical skills during the clinical reception of patients with various defects of the dento-maxillofacial apparatus; teach applicants to solve situational problems with a clinical orientation.

### **3. Content of the academic discipline**

#### **3 course**

**Topic No. 1. Examination of patients in the orthopedic dentistry clinic. Clinical examination methods. Additional (special) examination methods. Preliminary and final diagnosis.**

Acquaintance with clinical examination methods in orthopedic dentistry, quality assessment criteria, orthopedic structures. Patient examination algorithm in orthopedic dentistry. Basic clinical methods of examination of dental patients. Functional and graphical methods of studying air pollution. Laboratory-instrumental methods of research of SHLD. The method of describing the aiming radiograph. Features of the diagnosis in the clinic of orthopedic stomatology. Drawing up an orthopedic treatment plan and studying methods of preparing the patient for prosthetics. Rules for filling out medical history.

**Topic No. 2. Functional anatomy of the maxillofacial apparatus. Biomechanics of the maxillofacial apparatus. Functional occlusion. Devices that reproduce the movements of the lower jaw. Articulators - a general characteristic. The basics of working with an articulator. Clinical analysis of occlusion.**

Acquaintance with the schemes of attachment of ligaments inside the joint, features of the TMJ structure in different forms of the articular disc. The structure of the temporomandibular joint and masticatory muscles. Basic clinical methods of diagnosing lesions of the temporomandibular joint and masticatory muscles. Movement of the lower jaw in different planes, with functional movements of the jaw. Definition and methods of obtaining central occlusion, unilateral and bilateral balanced occlusion, etiology, pathogenesis, clinic of bruxism. Basic clinical methods of occlusion fixation. Principles of the structure of the occlusal system: Spee's curve, Wilson's curve, morphology of occlusion. The main factors of occlusion: articular paths, their typical values, Benet movement. The main clinical methods of diagnosing occlusion (occludography). The main devices that reproduce the movements of the lower jaw, their classification. The technology of plastering models in an occluder or articulator.

**Topic No. 3. Analgesia in the clinic of orthopedic dentistry. Local and general complications of**

**injection analgesia. Emergency conditions at a dental appointment.**

The main devices that reproduce the movements of the lower jaw, their classification. Technology of plastering models in an occluder or articulator. Familiarization with the mechanism of action of anesthetic agents. Studying the composition and properties of drugs for anesthesia. Mastering the method of choosing an anesthetic agent depending on clinical conditions. Familiarization with errors and complications during anesthesia. Clinic and diagnosis of emergency conditions provoked by local anesthesia. Methods of prevention and provision of medical assistance in emergency conditions.

**Topic No. 4. Methods of replacing defects of hard tissues of teeth, orthopedic structures. Artificial crowns - types, indications for prosthetics. Preparation of teeth for artificial crowns. Protection of welcome teeth during and after preparation. Clinical and laboratory stages of manufacturing stamped metal crowns.**

Etiology of dental defects. Classification according to Black. Calculation of IROPZ according to Melikevych. Indications for compensation of tooth defects with crowns, requirements for artificial crowns. Classification of artificial crowns. Clinical and laboratory stages of making crowns. Positive and negative sides of using different types of crowns, indications for use. Requirements for artificial stamped crowns. Method of preparation for a metal stamped crown. The rules and order of preparation of teeth, the effect of preparation on the tissues of vital teeth, clinical and laboratory stages of its preparation.

**Topic No. 5. Provisional crowns - indications, production methods, materials. A direct method of making provisional crowns. Laboratory method of making temporary crowns. Clinical and laboratory stages of production of solid metal and combined crowns.**

Indications for the manufacture of a plastic (provisional) crown. Method of preparation for a plastic crown. Features of tooth preparation for this type of prosthesis, clinical and laboratory stages of manufacturing plastic crowns using three methods. Indications and contraindications for the production of an integral crown. Methodology of preparation for an integral crown, methods of gum retraction. Periodontological aspects of marginal fit of crowns. Indications and contraindications for the manufacture of metal-ceramic and metal-plastic crowns. Methods of preparation for a metal-ceramic or metal-plastic crown. Methods of fixing facing material.

**Topic No. 6. Bridge-like prostheses - indications for prosthetics. Structural features and biomechanics of bridge prostheses. Clinical and laboratory stages of manufacturing stamped and soldered bridge-like prostheses. Clinical and laboratory stages of production of one-piece metal and combined bridge-like prostheses.**

Biomechanics of bridge-like prostheses, principles of selection of supporting teeth and construction of bridge-like prostheses. Types of bridge prostheses. Methods of examining a dental patient before prosthetics with a bridge prosthesis. Indications and requirements for bridge prostheses. Preparation of teeth for stamped-soldered, integrally cast and combined bridge-like prostheses. Clinical and laboratory stages of manufacturing stamped-soldered bridge-like prostheses. Clinical and laboratory stages of production of one-piece metal and combined bridge-like prostheses.

**Topic No. 7. Factors ensuring fixation of fixed prostheses. Materials for temporary and permanent fixation of orthopedic structures. Errors and complications during prosthetics with artificial crowns and bridge prostheses.**

Factors affecting the quality of fixation of fixed structures. The method of fitting crowns and the fixation procedure, as well as removing the crown. Classifications and main properties of fixing cements. Factors that lead to clinical errors in prosthetics with crowns. Methods of eliminating technological errors during the production of crowns. Basic clinical and technological errors in crown prosthetics. Medical errors at the stages of manufacturing bridge prostheses. Laboratory errors at the stages of manufacturing bridge-like prostheses. General and local complications during prosthetics with bridge-like prostheses.

**Topic No. 8. Partial removable prostheses (PDEs) - designs, indications for prosthetics, planning of PDE fixation. Support teeth, clasp lines. Methods of fixing the special equipment. Justification of the construction of the limits of the bases of the CZP. Determination and fixation of the ratio of the jaws in cases of I, II, III groups of dental defects.**

Designs of partial removable lamellar prostheses. Indications and contraindications for the use of removable partials. Anatomical, biophysical and mechanical methods of fixation of partial removable prostheses. Biomechanics of the functioning of a partial removable prosthesis. Biomechanics of end defects. Physiological and clinical bases of prosthetics with partial lamellar prostheses. Limits of partial removable prostheses for different topography of tooth row defects. Making a wax base with biting rollers. Determination and fixation of the ratio of the jaws in cases of I, II, III groups of dental defects.

**Topic No. 9. Setting of teeth in ChZP. Inspection of the design of the special equipment. Technologies for the production of plastic-based plastic products. Compression and casting pressing of plastics. Superimposition and correction of special conditions.**

The main sets of teeth, their variety. Basic guidelines for setting teeth. Methods of setting teeth in a partial plate prosthesis. The main possible errors regarding central occlusion. Algorithm for checking the design of the CZP. Methods of checking the design of a partial lamellar prosthesis. Familiarization with the compression technology of manufacturing lamellar prostheses. Laboratory stages of manufacturing partial removable plate prostheses. Methods of plastering a wax composition in a cuvette. Clinical methods of application of PPE. To know the algorithm of examination of the patient during the examination of the physical examination. Phases of adaptation to lamellar prostheses and terms of patient examination. Methods of correction of removable prostheses, criteria for assessing the quality of prostheses. Algorithm of patient management after applying a new prosthesis.

**Topic No. 10. Bügel prostheses (BP) - construction planning depending on clinical conditions. Types of fixing elements. Parallelometry of diagnostic models.**

Structural elements of brace prostheses. Indications and contraindications for brace prostheses. The method of obtaining impressions for bygel prostheses. The value of diagnostic models during the manufacture of brace prostheses. Requirements for abutment teeth, the extent of their preliminary preparation. Methods of preparation of abutment teeth in brace prosthetics. Parallelometer device. Tasks, stages of parallelometry, types of boundary lines. Methods of parallelometry.

**Topic No. 11. BP fixation. Indications for the use of various types of mechanical fasteners. Supporting and retaining clasps. Technological stages of production with a solid metal frame. Duplication of working models. Compensation of shrinkage of alloys during casting. Molding masses. The technology of casting frameworks of braced prostheses and prostheses with a metal base.**

The rules for placing clasps on supporting teeth. Types of paper clips and their components. Methodology for planning the framework of a brace prosthesis and drawing a picture of the clasp system on the model. Design features of brace prostheses, transferring the results of parallelometry to the working model. Technologies for processing the frame of a fixed prosthesis, methods of connecting artificial teeth to the frame of a fixed prosthesis. The technique of manufacturing wax parts of the framework of a brace prosthesis. The technology of preparing a working model for duplicating. Duplicating masses (silicone, helium), their characteristics, application technologies. Model duplication technology. Compensation of shrinkage of alloys during casting. Molding masses. The technology of casting frameworks of braced prostheses and prostheses with a metal base.

**Topic No. 12. Checking the BP design. Superimposition of BP. Adaptation to removable prostheses, terms of use. Repair and replacement of prostheses. The influence of the bases of removable prostheses on the mucous membrane of the oral cavity. Prosthetic stomatitis. Errors and complications in prosthetics with partial removable prostheses.**

The method of carrying out the clinical stage is the fitting of the framework of the brace prosthesis. Possible errors at this stage and methods of their correction. Correction of the frame of the bygel prosthesis. Methodology of applying the bygel prosthesis of the upper and lower jaw. Ways of insertion and removal of the bygel prosthesis. Recommendations for the care of the prosthesis and adaptation to it, carrying out its correction. Terms of adaptation for primary and repeated brace prosthetics.

#### **4th course**

##### **Topic No. 1. Examination of the patient's oral cavity in the complete absence of teeth. Obtaining anatomical impressions from edentulous upper and lower jaws for the manufacture of individual spoons.**

Anatomical and physiological changes with complete loss of teeth. Methods of examination of patients with complete absence of teeth. Basic clinical methods of examination of patients with complete absence of teeth. Anatomical and topographic features of edentulous jaws. Plan and task of orthopedic treatment of patients with complete absence of teeth. Methods of intraoral examination of patients with complete absence of teeth. Medical history. Concepts of "prosthetic field" and "prosthetic bed". Classifications of impressions and impression materials. The technique of removing anatomical impressions from edentulous jaws.

##### **Topic No. 2. Making individual spoons for the upper and lower jaw. Anatomical substantiation of the construction of the boundaries of complete removable prostheses. Fitting hard individual spoons. Obtaining functional impressions from the upper and lower edentulous jaws.**

Materials for individual spoons. Methods of preparing individual spoons. Methods of single-moment production of individual spoons. Familiarization with the need to use individual spoons for removing functional impressions. Requirements for individual spoons. The method of fitting individual spoons according to Herbst. Impression materials for functional impressions. Indications for impression materials and methods of obtaining functional impressions depending on the clinical situation. The method of obtaining functional prints.

##### **Topic No. 3. Determining the central ratio of the jaws in the case of group IV dentition defects. Errors in fixing the central ratio of the jaws, signs, their elimination.**

The main methods of determining the height of the bite and the central ratio of the jaws in the complete absence of teeth. Concept of central occlusion, central ratio, prosthetic plane. Anatomical and physiological method of determining the central ratio.

##### **Topic No. 4. Biomechanics of lower jaw movements. Occlusion factors. Articulation theories, basic provisions. Principles of working with an articulator in the prosthetics of patients with a complete absence of teeth.**

Acquaintance with articulation schemes. Factors of occlusion. Basic theories of articulation. Basic positions and values for the correct setting of teeth. Methods of forming individual occlusal curves. Introduction to different types of articulators. Principles of working with an articulator in the prosthetics of patients with a complete absence of teeth. Methods of working with the facial arch and transfer of the central ratio to the articulator.

##### **Topic No. 5. Anatomical placement of teeth on glass, on a spherical surface. Checking the design of the PZP.**

Types of artificial teeth. The principles of production according to M.E. Vasiliev (on glass), Gerber, on a spherical surface according to Monson. Principles of placing artificial teeth according to individual occlusal curves. Requirements for the design of the PZP. Methodology for checking the design of the PZP.

##### **Topic No. 6. Anatomical placement of teeth under the condition of prognathic and prognathic ratio of the jaws.**

Anatomical presentation teeth, provided the prognathic and prognathic ratio of the jaws.



**Topic No. 7. Laboratory stages of production of PZP. Processing of PZP after polymerization of plastics. Laboratory stages of production of PZP. Processing of PZP after polymerization of plastics.**

Laboratory stages of production of PZP. PZP processing sequence. Grinding and polishing of PZP.

**Topic No. 8. Fixation of PZP. Correction of PZP. Adaptation to prostheses. Repair of PZP.**

The concept of fixation, stabilization and equilibrium of the PZP. Fixation methods (mechanical, biomechanical, physical and biophysical) of PZP. The method of checking the fixation of the PZP in the patient's oral cavity. Stages of adaptation to prostheses. Materials and tools for correction of PZP. Principles of correction. Methods of repairing PZP with the help of self-hardening plastic. Materials and methods of repairing PZP. Causes of PZP failure.

**Topic No. 9. The influence of the bases of lamellar prostheses on the tissues of the oral cavity.**

Changes in the mucous membrane of the oral cavity in systemic diseases. Etiology, clinic of diseases of the mucous membrane of the oral cavity arising under the influence of removable prostheses, classification of prosthetic stomatitis Vasylenko Z.S. and Gavrilova E.H. Principles of differential diagnosis and treatment of diseases of the mucous membrane of the oral cavity arising under the influence of complete removable prostheses.

**Topic No. 10. Maxillofacial orthopedics. Purpose and task. Classification of jaw fractures. The mechanism of displacement of fragments in jaw fractures. Clinical signs in different types of fractures. The mechanism of displacement of fragments in jaw fractures. Clinical signs in different types of fractures.**

Maxillofacial orthopedics. The purpose and tasks of ShLD. Classification of jaw fractures. The mechanism of displacement of fragments in jaw fractures. Clinical signs in different types of fractures. The mechanism of displacement of fragments in jaw fractures. Clinical signs in different types of fractures.

**Topic No. 11. General characteristics of SHL devices and their classification.**

General characteristics of maxillofacial apparatus and their classification.

**Topic No. 12. Transport tires. Ligature binding of teeth, indications, contraindications. Errors and complications are possible. Treatment of jaw fractures without displacement of fragments using bent wire splints. Tire errors.**

General characteristics of maxillofacial apparatus. Classification of maxillofacial devices, a type of transport tires. Methods of applying transport tires and ligature binding of teeth. General characteristics of medical and transport maxillofacial splints. Indications for the use of registered means of immobilization. Methods of putting on report card transport tires. Variants of immobilization in case of jaw fractures without removal of debris. Indications, possible errors and methods of their elimination when splinting jaw fractures without removing fragments. Methods of applying bent wire tires.

**Topic No. 13. Etiology, clinic and orthopedic treatment of jaw fractures with permanent displacement of fragments.**

Clinic for jaw fractures with stable displacement of fragments. Criteria for choosing a device for displacement of fragments. Treatment of jaw fractures with displacement of fragments in the vertical direction (Posta apparatus). Treatment of jaw fractures with stable removal of fragments in the sagittal direction (Shur, Kurlyandsky apparatus, with an inclined plane). Treatment of jaw fractures with displacement of fragments in the transverse direction (apparatus of Katz, Limberg, Brun). Treatment of jaw fractures in the presence of edentulous fragments.

**Topic No. 14. Volume of specialized orthopedic care for patients with jaw fractures. Laboratory-made tires (Weber, Vankevych, Limberg, Guning-Port tires).**

The scope of specialized care for the wounded with jaw fractures. Methods of making laboratory tires (Weber, Vankiewicz, Limberg, Guning-Port tires). Clinical and laboratory stages.

**Topic No. 15. The use of orthopedic devices during osteoplasty and plastic surgery of soft tissues of the maxillofacial area (forming and fixing devices)**

Orthopedic means used in osteoplasty and plastic surgery of soft tissues of the maxillofacial region. Indications and design features of forming and fixing devices. Methods of obtaining impressions and determining central occlusion in the manufacture of molding apparatus.

**Topic No. 16. Etiology, pathogenesis, clinic of contractures of the lower jaw, their classification. Prevention of contractures and orthopedic methods of their treatment.**

Innervation and coordination of activity of the elements of the maxillofacial system. Definition of the term "contracture". Classification of contractures.

Factors causing the development of contractures. Reflex contractures. Prevention and treatment of reflex contractures. Cicatricial contractures. Prevention and treatment of cicatricial contractures. The structure and principle of operation of Yadrova, Limberg, Darsisak, and Weinstein apparatuses.

**Topic No. 17. Etiology, pathogenesis, clinic and orthopedic treatment of fractures that have not fused properly. Causes of false joint formation, clinic. Pathological anatomy of a false joint. Dental prosthetics.**

Causes of occurrence, clinic of fractures that have not fused properly. Indications for surgical, orthopedic, orthodontic, hardware-surgical methods of treating fractures that have not fused properly. Principles of treatment of improperly fused fractures with complete preservation of dentition, partial and complete absence of teeth. Causes, clinic and pathological anatomy of a false joint. Classification of false joints of the lower jaw. Orthopedic methods of treatment for faulty joints (one- and two-joint removable prostheses of Oxman, removable articulated prostheses of Vainshtein, Gavrillov).

**Topic No. 18. Microstomia. Etiology, clinic. Features of dental treatment of microstomia. Prosthetics with microstomia.**

The concept of "microstomia", causes, symptoms. Methods of treatment, features of prosthetics for microstomia. The technique of manufacturing a collapsible removable prosthesis of Kurlyandsky. The technique of manufacturing a hinge for a complex, removable prosthesis. The technique of manufacturing a complex hinged prosthesis.

**Topic No. 19. Prevalence, etiology, pathogenesis and orthopedic treatment of defects of the hard and soft palate. Obturators. Clinical and laboratory stages of manufacturing obturators.**

Types of defects of the palate and functional disorders of the oral cavity caused by them. Etiology of palate defects. Methods of treatment of defects of the palate, obturator prostheses and their types. The method of obtaining an impression for defects of the palate using an impression spoon, an S-shaped spatula. Obturators for replacing defects of the hard palate. Obturators for replacing defects of the hard and soft palate: with rigid, movable or elastic obturating parts. Clinical and laboratory stages of manufacturing a floating Keza obturator.

**Topic No. 20. Prosthetics of defects of the facial area. Resection prostheses. Ectoprostheses. Getting a face mask.**

Indications of contraindications to prosthetics of the front part of the face. Classification, types of facial prostheses. Resection prostheses. Ectoprostheses. Indications for obtaining a face mask. The technique of obtaining a face mask.

#### **5th course**

**Lecture No. 1. Diagnosis and treatment of patients with lesions of the maxillofacial region. Modern diagnostic process in orthopedic dentistry.**

Diagnosis and treatment of patients with lesions of the maxillofacial area. Modern diagnostic process in orthopedic dentistry.

**Topic No. 1. Diagnostic process in orthopedic dentistry. Differential diagnosis.**

Diagnostic process in orthopedic dentistry. Differential diagnosis.

**Topic No. 2. Examination and treatment plan. Functional methods of research of the chewing apparatus. Restoration of functional occlusion with various types of prosthetics.**

Examination and treatment plan. Functional methods of research of the chewing apparatus. Restoration of functional occlusion with various types of prosthetics.

**Topic No. 3. Volume and types of preparation of the oral cavity before orthopedic intervention. Drawing up a treatment plan.**

Volume and types of preparation of the oral cavity before orthopedic intervention. Drawing up a treatment plan.

**Lecture No. 2. Implantation. Types of implants, examination of patients. Indication. Methods of intervention. Prosthetics on implants. Complications and prevention when using prostheses on implants.**

Implantation. Types of implants, examination of patients. Indication. Methods of intervention. Prosthetics on implants. Complications and prevention when using prostheses on implants.

**Lecture No. 3. Etiology, pathogenesis, clinic and treatment of maxillofacial deformities and excessive wear of hard tissues of teeth. Prevention.**

Etiology, pathogenesis, clinic and treatment of maxillofacial deformities and excessive wear of hard tissues of teeth. Prevention.

**Lecture No. 4. Periodontal disease. Clinic. Classifications. Research methods, diagnostics. Orthopedic methods of treatment in complex therapy of periodontal diseases. Removable and non-removable structures used in patients with periodontitis and periodontitis. Temporary and permanent splinting.**

Periodontal disease. Clinic. Classifications. Research methods, diagnostics. Orthopedic methods of treatment in the complex therapy of periodontal diseases. Removable and non-removable structures used in patients with periodontitis and periodontitis. Temporary and permanent splinting.

**Lecture No. 5. Diseases of the temporomandibular joint. Classifications. Etiology. Clinic and diagnostics. Rg-ography, tomography as a tool for the clinic of orthopedic dentistry. Orthopedic intervention in the complex treatment of TMJ diseases. Consistency and unity of the treatment process.**

Temporomandibular joint disease. Classifications. Etiology. Clinic and diagnostics. Rg-ography, tomography as a tool for the clinic of orthopedic dentistry. Orthopedic intervention in the complex treatment of TMJ diseases. Consistency and unity of the treatment process.

**Topic No. 4. Principles of comprehensive examination of maxillofacial deformities. Mechanisms of occurrence. Clinical forms. Etiology and pathogenesis of maxillofacial deformities.**

Principles of comprehensive examination of maxillofacial deformities. Mechanisms of occurrence. Clinical forms. Etiology and pathogenesis of maxillofacial deformities.

**Topic No. 5. Drawing up a treatment plan for patients with maxillofacial deformities. Prevention.**

Drawing up a treatment plan for patients with maxillofacial deformities. Prevention.

**Topic No. 6. Pathological effects of materials used in orthopedic dentistry. Differential diagnosis, treatment and prevention. Orthopedic measures in the complex treatment of maxillofacial injuries.**

Pathological effects of materials used in orthopedic dentistry. Differential diagnosis, treatment and prevention. Orthopedic measures in the complex treatment of maxillofacial injuries.

#### 4. The structure of the academic discipline

##### Course 3

Topic	In total	Lectures	Practice occupation	SRS
Topic No. 1. Examination of patients in the orthopedic dentistry clinic. Clinical examination methods. Additional (special) examination	10	2	4	4

methods. Preliminary and final diagnosis.				
Topic No. 2. Functional anatomy of the maxillofacial apparatus. Biomechanics of the maxillofacial apparatus. Functional occlusion. Devices that reproduce the movements of the lower jaw. Articulators - a general characteristic. The basics of working with an articulator. Clinical analysis of occlusion.	12/12*	4/6*	4/2*	4
Topic No. 3. Analgesia in the clinic of orthopedic dentistry. Local and general complications of injection analgesia. Emergency conditions at a dental appointment.	10	2	4	4
Topic No. 4. Methods of replacing defects of hard tissues of teeth, orthopedic structures. Artificial crowns - types, indications for prosthetics. Preparation of teeth for artificial crowns. Protection of welcome teeth during and after preparation. Clinical and laboratory stages of manufacturing stamped metal crowns. Topic No. 5. Provisional crowns - indications, production methods, materials. A direct method of making provisional crowns. Laboratory method of making temporary crowns. Clinical and laboratory stages of production of solid metal and combined crowns. Topic No. 6. Bridge-like prostheses - indications for prosthetics. Structural features and biomechanics of bridge prostheses. Clinical and laboratory stages of manufacturing stamped and soldered bridge-like prostheses. Clinical and laboratory stages of production of one-piece metal and combined bridge-like prostheses. Topic No. 7. Factors ensuring fixation of fixed prostheses. Materials for temporary and permanent fixation of orthopedic structures. Errors and complications during prosthetics with artificial crowns and bridge prostheses.	32/32*	2	16/8*	14/22*
Topic No. 8. Partial removable prostheses (PDEs) - designs, indications for prosthetics, planning of PDE fixation. Support teeth, clasp lines. Methods of fixing the special equipment. Justification of the construction of the limits of the bases of the CZP. Determination and fixation of the ratio of the jaws in cases of I, II, III groups of dental defects. Topic No. 9. Setting of teeth in ChZP. Inspection of the design of the special equipment. Technologies for the production of plastic-based plastic-based plastic products. Compression and	20/20*	4	8/6*	8/10*

casting pressing of plastics. Superimposition and correction of special conditions.				
Topic No. 10. Bügel prostheses (BP) - construction planning depending on clinical conditions. Types of fixing elements. Parallelometry of diagnostic models. Topic No. 11. BP fixation. Indications for the use of various types of mechanical fasteners. Supporting and retaining clamps. Technological stages of production with a solid metal frame. Duplication of working models. Compensation of shrinkage of alloys during casting. Molding masses. The technology of casting frameworks of braced prostheses and prostheses with a metal base. Topic No. 12. Checking the BP design. Superimposition of BP. Adaptation to removable prostheses, terms of use. Repair and replacement of prostheses. The influence of the bases of removable prostheses on the mucous membrane of the oral cavity. Prosthetic stomatitis. Errors and complications in prosthetics with partial removable prostheses.	32	4	14	14
Final lesson. Test.	4		2	2
Hours in general:	120	18/20*	52/40*	50/60*

\* - hours for students of higher education with a shortened period of study.

#### Course 4

Topic	In total	Lectures	Practice classes	SRS
Topic No. 1. Examination of the patient's oral cavity in the complete absence of teeth. Obtaining anatomical impressions from edentulous upper and lower jaws for the manufacture of individual spoons. Topic No. 2. Making individual spoons for the upper and lower jaw. Anatomical substantiation of the construction of the boundaries of complete removable prostheses. Fitting hard individual spoons. Obtaining functional impressions from the upper and lower edentulous jaws. Topic No. 3. Determining the central ratio of the jaws in the case of group IV dentition defects. Errors in fixing the central ratio of the jaws, signs, their elimination Topic No. 4. Biomechanics of lower jaw movements. Occlusion factors. Articulation theories, basic provisions. Principles of working with an articulator in the prosthetics of patients with a complete absence of teeth.	96	6	54	36

<p>Topic No. 5. Anatomical placement of teeth on glass, on a spherical surface. Checking the design of the PZP.</p> <p>Topic No. 6. Anatomical placement of teeth under the condition of prognathic and prognathic ratio of the jaws.</p> <p>Topic No. 7. Laboratory stages of production of PZP. Processing of PZP after polymerization of plastics.</p> <p>Topic No. 8. Fixation of PZP. Correction of PZP. Adaptation to prostheses. Repair of PZP.</p> <p>Topic No. 9. The influence of the bases of lamellar prostheses on the tissues of the oral cavity.</p>				
<p>Topic No. 10. Maxillofacial orthopedics. Purpose and task. Classification of jaw fractures. The mechanism of displacement of fragments in jaw fractures. Clinical signs in different types of fractures. The mechanism of displacement of fragments in jaw fractures. Clinical signs in different types of fractures.</p> <p>Topic No. 11. General characteristics of SHL devices and their classification.</p>	18	2	8	8
<p>Topic No. 12. Transport tires. Ligature binding of teeth, indications, contraindications. Errors and complications are possible. Treatment of jaw fractures without displacement of fragments using bent wire splints. Tire errors.</p> <p>Topic No. 13. Etiology, clinic and orthopedic treatment of jaw fractures with permanent displacement of fragments.</p> <p>Topic No. 14. Volume of specialized orthopedic care for patients with jaw fractures. Laboratory-made tires (Weber, Vankevych, Limberg, Guning-Port tires).</p>	34	2	18	14
<p>Topic No. 15. The use of orthopedic devices during osteoplasty and plastic surgery of soft tissues of the maxillofacial area (forming and fixing devices)</p> <p>Topic No. 16. Etiology, pathogenesis, clinic of contractures of the lower jaw, their classification. Prevention of contractures and orthopedic methods of their treatment</p> <p>Topic No. 17. Etiology, pathogenesis, clinic and orthopedic treatment of fractures that have not fused properly. Causes of false joint formation, clinic. Pathological anatomy of a false joint. Dental prosthetics</p> <p>Topic No. 18. Microstomia. Etiology, clinic. Features of dental treatment of microstomia. Prosthetics with microstomia.</p>	42	4	24	14

Topic No. 19. Prevalence, etiology, pathogenesis and orthopedic treatment of defects of the hard and soft palate. Obturators. Clinical and laboratory stages of manufacturing obturators Topic No. 20. Prosthetics of defects of the facial area. Resection prostheses. Ectoprostheses. Getting a face mask.				
Final lesson. Test.	5		2	3
Hours in general:	195	14	106	75

### Course 5

Topic	In total	Lectures	Practice occupation	SRS
Lecture No. 1. Diagnosis and treatment of patients with lesions of the maxillofacial area. Modern diagnostic process in orthopedic dentistry. Topic No. 1. Diagnostic process in orthopedic dentistry. Differential diagnosis. Topic No. 2. Examination and treatment plan. Functional methods of research of the chewing apparatus. Restoration of functional occlusion with various types of prosthetics. Topic No. 3. Volume and types of preparation of the oral cavity before orthopedic intervention. Drawing up a treatment plan.	34	2	18	14
Lecture No. 2. Implantation. Types of implants, examination of patients. Indication. Methods of intervention. Prosthetics on implants. Complications and prevention when using prostheses on implants.	3	2		1
Lecture No. 3. Etiology, pathogenesis, clinic and treatment of maxillofacial deformities and excessive wear of hard tissues of teeth. Prevention. Lecture No. 4. Periodontal disease. Clinic. Classifications. Research methods, diagnostics. Orthopedic methods of treatment in complex therapy of periodontal diseases. Removable and non-removable structures used in patients with periodontitis and periodontitis. Temporary and permanent splinting. Lecture No. 5. Diseases of the temporomandibular joint. Classifications. Etiology. Clinic and diagnostics. Rg-ography, tomography as a tool for the clinic of orthopedic dentistry. Orthopedic intervention in the complex treatment of TMJ diseases. Consistency and unity of the treatment process. Topic No. 4. Principles of comprehensive examination of maxillofacial deformities.	30	6	12	12

Mechanisms of occurrence. Clinical forms. Etiology and pathogenesis of maxillofacial deformities. Topic No. 5. Drawing up a treatment plan for patients with maxillofacial deformities. Prevention. Topic No. 6. Pathological effects of materials used in orthopedic dentistry. Differential diagnosis, treatment and prevention. Orthopedic measures in the complex treatment of maxillofacial injuries.				
<b>Exam</b>	8			8
Hours in general:	75	10	30	35

### 5. Topics of lectures/seminars/practical/laboratory classes

#### 5.1. Topics of lectures

No n/p	Topic	Number of hours
<b>Course 3 (Permanent and partial removable dentures)</b>		
1.	Examination of patients in the orthopedic dentistry clinic. Basic and additional methods of examination. Diagnosis	2
2.	Functional anatomy and biomechanics of the maxillofacial apparatus. Clinical analysis of occlusion.	2
3.	Anatomical and physiological features of the maxillofacial apparatus with partial loss of teeth. Examination of patients. Design features and comparative characteristics of various types of CZP, indications. Pre-prosthetic preparation.	2/4*
4.	Analgesia in the clinic of orthopedic dentistry. Emergency conditions at a dental appointment.	2
5.	Indications and clinical and technological stages of manufacturing artificial crowns. Indications and clinical and technological stages of manufacturing bridge prostheses.	2
6.	Factors ensuring the fixation of CZP. Planning of the construction of the CHZP depending on the exceptional conditions: selection of supporting teeth and fixing elements, limits of the bases. Determination of the ratio of the jaws in 1-3 groups of defects of the dentition. Placement of teeth in the CZP. Verification of constructions of special equipment	2
7.	Superimposition and correction of special conditions. Adaptation to removable prostheses. Replacement and repair of removable prostheses. The influence of the bases of prostheses on the tissues of the oral cavity. Prosthetic stomatitis	2
8.	Beagle prostheses - types of fixing elements, options for positioning the arches of Beagle prostheses on the upper and lower jaws. Planning of the design of brace prostheses. Parallelometry	2
9.	Technological stages of production of special equipment. Duplication of models. Refractory masses. Lithuania frames of fixed prostheses and metal bases. Compression and foundry pressing, polymerization of plastics	2
	In total	18/20*
* - hours for students of higher education with a shortened period of study.		
<b>Course 4 (Complete removable dentures. Maxillofacial orthopedics. Solid prosthetics.)</b>		
1.	Examination of the oral cavity of patients with complete eruption of teeth.	2



	Anatomical and physiological features of the chewing apparatus with complete loss of teeth.	
2.	Biomechanics of the lower jaw, factors of occlusion. Basic provisions of the theory of articulation. Devices that reproduce the movements of the lower jaw.	2
3.	Clinical and laboratory stages of manufacturing complete removable prostheses. Peculiarities of placing artificial teeth in different types of pathological bites.	2
4.	Maxillofacial orthopedics. Purpose, task. Classification of jaw fractures. The mechanism of displacement of fragments in jaw fractures. Clinical signs.	2
5.	Orthopedic treatment of jaw fractures. Transport tires. Specialized orthopedic care for patients with jaw fractures.	2
6.	Maxillofacial prosthetics of patients with damage to the maxillofacial area. Contractures. Microstomia. Defects of the hard and soft palate.	2
7.	Molding prostheses. Ectoprostheses. Methods of fixation. Etiology, clinic, features of orthopedic treatment.	2
	In total	14
<b>Course 5 (Orthopedic methods of treatment of diseases of the dental and jaw apparatus)</b>		
1.	Diagnosis and treatment of patients with lesions of the maxillofacial area. Modern diagnostic process in orthopedic dentistry.	2
2.	Implantation. Types of implants, examination of patients. Indication. Methods of intervention. Prosthetics on implants. Complications and prevention when using prostheses on implants.	2
3.	Etiology, pathogenesis, clinic and treatment of maxillofacial deformities and excessive wear of hard tissues of teeth. Prevention.	2
4.	Periodontal disease. Clinic. Classifications. Research methods, diagnostics. Orthopedic methods of treatment in the complex therapy of periodontal diseases. Removable and non-removable structures used in patients with periodontitis and periodontitis. Temporary and permanent splinting.	2
5.	Temporomandibular joint disease. Classifications. Etiology. Clinic and diagnostics. Rg-ography, tomography as a tool for the clinic of orthopedic dentistry. Orthopedic intervention in the complex treatment of TMJ diseases. Consistency and unity of the treatment process.	2
	In total	10
<b>Together</b>		42/44*

\* - hours for students of higher education with a shortened period of study.

### 5.2. Topics of seminar classes

Seminar classes are not provided.

### 5.3. Topics of practical lessons

No Topics	Topic name	Number of hours
<b>Course 3 (Fixed and partially removable dentures)</b>		
1.	Examination of patients in the orthopedic dentistry clinic. Clinical examination methods. Additional (special) examination methods. Preliminary and final diagnosis. Changes in the maxillofacial apparatus with partial loss of teeth	4
2.	Functional anatomy of the maxillofacial apparatus. Biomechanics of the maxillofacial apparatus. Functional occlusion. Devices that reproduce the	4/2*

	movements of the lower jaw. Articulators - a general characteristic. The basics of working with an articulator. Clinical analysis of occlusion	
3.	Analgesia in the clinic of orthopedic dentistry. Local and general complications of injection analgesia. Emergency conditions at a dental appointment	4
4.	Methods of replacing defects of hard tissues of teeth, orthopedic structures. Artificial crowns - types, indications for prosthetics. Preparation of teeth for artificial crowns. Protection of welcome teeth during and after preparation. Clinical and laboratory stages of manufacturing stamped metal crowns.	4/2*
5.	Provisional crowns - indications, production methods, materials. A direct method of making provisional crowns. Laboratory method of making temporary crowns. Clinical and laboratory stages of production of solid metal and combined crowns.	4/2*
6.	Bridge-like prostheses - indications for prosthetics. Structural features and biomechanics of bridge prostheses. Clinical and laboratory stages of manufacturing stamped and soldered bridge-like prostheses. Clinical and laboratory stages of production of one-piece metal and combined bridge-like prostheses.	4/2*
7.	Factors ensuring fixation of fixed prostheses. Materials for temporary and permanent fixation of orthopedic structures. Errors and complications during prosthetics with artificial crowns and bridge prostheses.	4/2*
8.	Partial removable prostheses (PDEs) - designs, indications for prosthetics, planning of PDE fixation. Support teeth, clasp lines. Methods of fixing the special equipment. Justification of the construction of the limits of the bases of the CZP. Determination and fixation of the ratio of the jaws in cases of I, II, III groups of dental defects.	4/2*
9.	Setting of teeth in ChZP. Inspection of the design of the special equipment. Technologies for the production of plastic-based plastic products. Compression and casting pressing of plastics. Superimposition and correction of special conditions.	4
10.	Bügel prostheses (BP) - construction planning depending on clinical conditions. Types of fixing elements. Parallelometry of diagnostic models.	4
11.	BP fixation. Indications for the use of various types of mechanical fasteners. Supporting and retaining clamps. Technological stages of manufacturing BP with solid metal frame. Duplication of working models. Compensation of shrinkage of alloys during casting. Molding masses. The technology of casting frameworks of braced prostheses and prostheses with a metal base.	4
12.	Checking the BP design. Superimposition of BP. Adaptation to removable prostheses, terms of use. Repair and replacement of prostheses. The influence of the bases of removable prostheses on the mucous membrane of the oral cavity. Prosthetic stomatitis. Errors and complications in prosthetics with partial removable prostheses.	6
13.	Final lesson. Test.	2
	<b>Total:</b>	52/40*
* - hours for students of higher education with a shortened period of study.		
<b>Course 4 (Complete removable dentures. Maxillofacial orthopedics.)</b>		
1.	Examination of the patient's oral cavity in the complete absence of teeth. Obtaining anatomical impressions from edentulous upper and lower jaws for the manufacture of individual spoons.	6

2.	Making individual spoons for the upper and lower jaw. Anatomical substantiation of the construction of the boundaries of complete removable prostheses. Fitting hard individual spoons. Obtaining functional impressions from the upper and lower edentulous jaws.	6
3.	Determining the central ratio of the jaws in the case of group IV dentition defects. Errors in fixing the central ratio of the jaws, signs, their elimination	6
4.	Biomechanics of lower jaw movements. Occlusion factors. Articulation theories, basic provisions. Principles of working with an articulator in the prosthetics of patients with a complete absence of teeth.	6
5.	Anatomical placement of teeth on glass, on a spherical surface. Checking the design of the PZP.	6
6.	Anatomical placement of teeth under the condition of progenic and prognathic ratio of the jaws.	6
7.	Laboratory stages of production of PZP. Processing of PZP after polymerization of plastics. Laboratory stages of production of PZP. Processing of PZP after polymerization of plastics.	6
8.	Fixation of PZP. Correction of PZP. Adaptation to prostheses.	6
9.	The influence of the bases of lamellar prostheses on the tissues of the oral cavity. Repair of PZP.	6
10.	Maxillofacial orthopedics. Purpose and task. Classification of jaw fractures. The mechanism of displacement of fragments in jaw fractures. Clinical signs in different types of fractures.	4
11.	General characteristics of SHL devices and their classification.	4
12.	Transport tires. Ligature binding of teeth, indications, contraindications. Errors and complications are possible. Treatment of jaw fractures without displacement of fragments using bent wire splints. Tire errors.	6
13.	Etiology, clinic and orthopedic treatment of jaw fractures with permanent displacement of fragments.	6
14.	Volume of specialized orthopedic care for patients with jaw fractures. Laboratory-made tires (Weber, Vankevych, Limberg, Guning-Port tires).	6
15.	The use of orthopedic means during osteoplasty and plastic surgery of soft tissues of the ACL area (forming and fixing devices).	4
16.	Etiology, pathogenesis, clinic of contractures of the lower jaw, their classification. Prevention of contractures and orthopedic methods of their treatment.	4
17.	Etiology, pathogenesis, clinic and orthopedic treatment of fractures that have not fused properly. Causes of false joint formation, clinic. Pathological anatomy of a false joint. Dental prosthetics.	4
18.	Microstomia. Etiology, clinic. Features of dental treatment of microstomia. Prosthetics with microstomia.	4
19.	Prevalence, etiology, pathogenesis and treatment of defects of the hard and soft palate. Obturators. Clinical and laboratory stages of manufacturing obturators	4
20.	Prosthetics of defects of the facial area. Resection prostheses. Ectoprostheses. Getting a face mask	4
18.	Final lesson. Test.	2
	<b>Total:</b>	106
<b>Course 5(Orthopedic methods of treatment of diseases of the dental and jaw apparatus)</b>		

1.	Diagnostic process in orthopedic dentistry. Differential diagnosis in orthopedic dentistry.	6
2.	Examination and treatment plan. Functional methods of research of the chewing apparatus. Restoration of functional occlusion with various types of prosthetics.	6
3.	Volume and types of preparation of the oral cavity before orthopedic intervention. Drawing up a treatment plan	6
4.	Principles of comprehensive examination of maxillofacial deformities. Mechanisms of occurrence. Clinical forms. Etiology and pathogenesis of maxillofacial deformities.	4
5.	Drawing up a treatment plan for patients with maxillofacial deformities. Prevention.	4
6.	Pathological effects of materials used in orthopedic dentistry. Differential diagnosis, treatment and prevention. Orthopedic measures in the complex treatment of maxillofacial injuries.	4
	<b>Exam</b>	
	<b>In total</b>	30
	<b>Together</b>	188/176*

\* - hours for students of higher education with a shortened period of study.

#### 5.4. Topics of laboratory classes

Laboratory classes are not provided.

### 6. Independent work of a student of higher education

No topics	Topic name	Number of hours
<b>Course 3 (Fixed and partially removable dentures)</b>		
1.	Topic No. 1. Examination of patients in the orthopedic dentistry clinic. Clinical examination methods. Additional (special) examination methods. Preliminary and final diagnosis.	4
2.	Topic No. 2. Functional anatomy of the maxillofacial apparatus. Biomechanics of the maxillofacial apparatus. Functional occlusion. Devices that reproduce the movements of the lower jaw. Articulators - a general characteristic. The basics of working with an articulator. Clinical analysis of occlusion.	4
3.	Topic No. 3. Analgesia in the clinic of orthopedic dentistry. Local and general complications of injection analgesia. Emergency conditions at a dental appointment.	4
4.	Topic No. 4. Methods of replacing defects of hard tissues of teeth, orthopedic structures. Artificial crowns - types, indications for prosthetics. Preparation of teeth for artificial crowns. Protection of welcome teeth during and after preparation. Clinical and laboratory stages of manufacturing stamped metal crowns. Topic No. 5. Provisional crowns - indications, production methods, materials. A direct method of making provisional crowns. Laboratory method of making temporary crowns. Clinical and laboratory stages of production of solid metal and combined crowns.	14/22*

	<p>Topic No. 6. Bridge-like prostheses - indications for prosthetics. Structural features and biomechanics of bridge prostheses. Clinical and laboratory stages of manufacturing stamped and soldered bridge-like prostheses. Clinical and laboratory stages of production of one-piece metal and combined bridge-like prostheses.</p> <p>Topic No. 7. Factors ensuring fixation of fixed prostheses. Materials for temporary and permanent fixation of orthopedic structures. Errors and complications during prosthetics with artificial crowns and bridge prostheses.</p>	
5.	<p>Topic No. 8. Partial removable prostheses (PDEs) - designs, indications for prosthetics, planning of PDE fixation. Support teeth, clasp lines. Methods of fixing the special equipment. Justification of the construction of the limits of the bases of the CZP. Determination and fixation of the ratio of the jaws in cases of I, II, III groups of dental defects.</p> <p>Topic No. 9. Setting of teeth in ChZP. Inspection of the design of the special equipment. Technologies for the production of plastic-based plastic products. Compression and casting pressing of plastics. Superimposition and correction of special conditions.</p>	8/10*
6.	<p>Topic No. 10. Bügel prostheses (BP) - construction planning depending on clinical conditions. Types of fixing elements. Parallelometry of diagnostic models.</p> <p>Topic No. 11. BP fixation. Indications for the use of various types of mechanical fasteners. Supporting and retaining clamps. Technological stages of production with a solid metal frame. Duplication of working models. Compensation of shrinkage of alloys during casting. Molding masses. The technology of casting frameworks of braced prostheses and prostheses with a metal base.</p> <p>Topic No. 12. Checking the BP design. Superimposition of BP. Adaptation to removable prostheses, terms of use. Repair and replacement of prostheses. The influence of the bases of removable prostheses on the mucous membrane of the oral cavity. Prosthetic stomatitis. Errors and complications in prosthetics with partial removable prostheses.</p>	14
7.	Final lesson. Test.	2
	Hours in general:	50/60*

\* - hours for students of higher education with a shortened period of study.

#### **Course 4 (Complete removable dentures. Maxillofacial orthopedics.)**

1.	<p>Topic No. 1. Examination of the patient's oral cavity in the complete absence of teeth. Obtaining anatomical impressions from edentulous upper and lower jaws for the manufacture of individual spoons.</p> <p>Topic No. 2. Making individual spoons for the upper and lower jaw. Anatomical substantiation of the construction of the boundaries of complete removable prostheses. Fitting hard individual spoons. Obtaining functional impressions from the upper and lower edentulous jaws.</p> <p>Topic No. 3. Determining the central ratio of the jaws in the case of group IV dentition defects. Errors in fixing the central ratio of the jaws,</p>	36
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	<p>signs, their elimination</p> <p>Topic No. 4. Biomechanics of lower jaw movements. Occlusion factors. Articulation theories, basic provisions. Principles of working with an articulator in the prosthetics of patients with a complete absence of teeth.</p> <p>Topic No. 5. Anatomical placement of teeth on glass, on a spherical surface. Checking the design of the PZP.</p> <p>Topic No. 6. Anatomical placement of teeth under the condition of prognathic and prognathic ratio of the jaws.</p> <p>Topic No. 7. Laboratory stages of production of PZP. Processing of PZP after polymerization of plastics.</p> <p>Topic No. 8. Fixation of PZP. Correction of PZP. Adaptation to prostheses. Repair of PZP.</p> <p>Topic No. 9. The influence of the bases of lamellar prostheses on the tissues of the oral cavity.</p>	
2.	<p>Topic No. 10. Maxillofacial orthopedics. Purpose and task. Classification of jaw fractures. The mechanism of displacement of fragments in jaw fractures. Clinical signs in different types of fractures. The mechanism of displacement of fragments in jaw fractures. Clinical signs in different types of fractures.</p> <p>Topic No. 11. General characteristics of SHL devices and their classification.</p>	8
3.	<p>Topic No. 12. Transport tires. Ligature binding of teeth, indications, contraindications. Errors and complications are possible. Treatment of jaw fractures without displacement of fragments using bent wire splints. Tire errors.</p> <p>Topic No. 13. Etiology, clinic and orthopedic treatment of jaw fractures with permanent displacement of fragments.</p> <p>Topic No. 14. Volume of specialized orthopedic care for patients with jaw fractures. Laboratory-made tires (Weber, Vankevych, Limberg, Guning-Port tires).</p>	14
4.	<p>Topic No. 15. The use of orthopedic devices during osteoplasty and plastic surgery of soft tissues of the maxillofacial area (forming and fixing devices)</p> <p>Topic No. 16. Etiology, pathogenesis, clinic of contractures of the lower jaw, their classification. Prevention of contractures and orthopedic methods of their treatment</p> <p>Topic No. 17. Etiology, pathogenesis, clinic and orthopedic treatment of fractures that have not fused properly. Causes of false joint formation, clinic. Pathological anatomy of a false joint. Dental prosthetics</p> <p>Topic No. 18. Microstomia. Etiology, clinic. Features of dental treatment of microstomia. Prosthetics with microstomia.</p> <p>Topic No. 19. Prevalence, etiology, pathogenesis and orthopedic treatment of defects of the hard and soft palate. Obturators. Clinical and laboratory stages of manufacturing obturators</p> <p>Topic No. 20. Prosthetics of defects of the facial area. Resection prostheses. Ectoprostheses. Getting a face mask.</p>	14
5.	Final lesson. Test.	3
	Hours in general:	75

<b>Course 5(Orthopedic methods of treatment of diseases of the dental and jaw apparatus)</b>		
1.	Lecture No. 1. Diagnosis and treatment of patients with lesions of the maxillofacial area. Modern diagnostic process in orthopedic dentistry. Topic No. 1.Diagnostic process in orthopedic dentistry. Differential diagnosis. Topic No. 2.Examination and treatment plan. Functional methods of research of the chewing apparatus. Restoration of functional occlusion with various types of prosthetics. Topic No. 3.Volume and types of preparation of the oral cavity before orthopedic intervention. Drawing up a treatment plan.	14
2.	Lecture No. 2. Implantation. Types of implants, examination of patients. Indication. Methods of intervention. Prosthetics on implants. Complications and prevention when using prostheses on implants.	1
3.	Lecture No. 3. Etiology, pathogenesis, clinic and treatment of maxillofacial deformities and excessive wear of hard tissues of teeth. Prevention. Lecture No. 4. Periodontal disease. Clinic. Classifications. Research methods, diagnostics. Orthopedic methods of treatment in complex therapy of periodontal diseases. Removable and non-removable structures used in patients with periodontitis and periodontitis. Temporary and permanent splinting. Lecture No. 5. Diseases of the temporomandibular joint. Classifications. Etiology. Clinic and diagnostics. Rg-ography, tomography as a tool for the clinic of orthopedic dentistry. Orthopedic intervention in the complex treatment of TMJ diseases. Consistency and unity of the treatment process. Topic No. 4. Principles of comprehensive examination of maxillofacial deformities. Mechanisms of occurrence. Clinical forms. Etiology and pathogenesis of maxillofacial deformities. Topic No. 5. Drawing up a treatment plan for patients with maxillofacial deformities. Prevention. Topic No. 6. Pathological effects of materials used in orthopedic dentistry. Differential diagnosis, treatment and prevention. Orthopedic measures in the complex treatment of maxillofacial injuries.	12
4.	<b>Exam</b>	8
	Hours in general:	35
	<b>Together</b>	<b>160 / 170*</b>

\* - hours for students of higher education with a shortened period of study.

### **7.Teaching methods**

**Lectures:**a systematic course in which the material according to the curriculum is taught sequentially. Multimedia material is used during the lecture.

**Practical training:**is based on previously prepared methodical material — a set of tasks of varying complexity to be performed by students of higher education in class, diagnostic tools. It includes monitoring the knowledge, skills and abilities of students of higher education, posing a general problem by the teacher and discussing it with the participation of students of higher education, completing tasks with their discussion.

**Independent work:** development of educational material, preparation for lectures and practical classes. Independent work with recommended basic and additional literature, with electronic information resources.

**8. Forms of control and evaluation methods (including criteria for evaluating learning outcomes)**

**Current control:** oral survey, evaluation of reports and the ability to formulate and defend one's position, evaluation of activity in the lesson, evaluation of the performance of practical skills. At the last lesson of the academic year, the current academic performance is calculated - the average current score (arithmetic average of all current grades on a traditional scale, rounded to two decimal places).

**Final control:** assessment, exam

**Evaluation of the current educational activity in a practical session:** oral survey, evaluation of reports and the ability to formulate and defend one's position, evaluation of activity in the lesson, evaluation of the performance of practical skills.

**Evaluation criteria for the practical lesson on the national scale:**

Rating	Evaluation criteria
Excellent "5"	The applicant perfectly mastered the theoretical material of the subject of the lesson, demonstrates deep and comprehensive knowledge of the relevant topic, the main provisions of scientific primary sources and recommended literature, thinks logically and constructs an answer, freely uses the acquired theoretical knowledge when analyzing practical material, expresses his attitude to certain problems, demonstrates high level of assimilation of practical skills.
OK "4"	The applicant has well mastered the theoretical material of the lesson, has the main aspects from primary sources and recommended literature, presents it in a reasoned way; has practical skills, expresses his thoughts on certain problems, but certain inaccuracies and errors are assumed in the logic of the presentation of theoretical content or in the performance of practical skills.
Satisfactory "3"	In general, the applicant has mastered the theoretical knowledge of the educational topic, orients himself in primary sources and recommended literature, but answers unconvincingly, confuses concepts, additional questions cause uncertainty or lack of stable knowledge in the applicant; when answering questions of a practical nature, reveals inaccuracies in knowledge, does not know how to evaluate facts and phenomena, connect them with future activities, makes mistakes when performing practical skills
Unsatisfactory "2"	The applicant has not mastered the educational material of the topic, does not know scientific facts, definitions, is almost not oriented in primary sources and recommended literature, lacks scientific thinking, practical skills are not formed.

*Test* awarded to the applicant who completed all tasks of the work program of the academic discipline, took an active part in practical classes, completed and defended an individual assignment and has an average current grade of at least 3.0 and has no academic debt.

Assessment is carried out: at the last lesson before the beginning of the examination session - with the tape system of learning, at the last lesson - with the cycle system of learning. The credit score is the arithmetic mean of all components on a traditional four-point



scale and has a value that is rounded using the statistical method with two decimal places after the decimal point.

Before the exam only those applicants are admitted who have fulfilled the requirements of the training program in the discipline, have no academic debt, their average score for the current educational activity in the discipline is at least 3.00, and they have passed the test control of the "STEP - 2" tests with at least 90 % (50 tasks).

The test control is conducted in the Educational and Production Complex of Innovative Technologies of Learning, Informatization and Internal Monitoring of the Quality of Education of the University in the last class before the exam.

#### **Evaluation of the results of the students' training during the final control - exam**

<b>The content of the evaluated activity</b>		<b>Scores</b>
1.	Questions about permanent prosthetics	2
2.	Questions about removable prosthetics	2
3.	Questions on maxillofacial orthopedics, diseases of the maxillofacial system	1

#### **Criteria for evaluating the results of the students' training during the final control - exam**

<b>Rating</b>	<b>Evaluation criteria</b>
Excellent "5"	The student of higher education has firmly mastered the theoretical material, has a deep and comprehensive knowledge of the content of the educational component, thinks logically and constructs an answer, freely uses the acquired theoretical knowledge when answering questions during the final control, is able to highlight the essential features of what he has learned by means of operations of synthesis, analysis, identify causal -consequences, form conclusions and generalizations, demonstrates a high level of mastery of practical skills.
OK "4"	The student of higher education has mastered the theoretical material well, he presents it in a reasoned way; demonstrates practical skills, expresses his thoughts on certain problems, but when teaching some issues, there is a lack of sufficient depth and argumentation, some insignificant inaccuracies and minor mistakes are allowed. The acquirer is able to distinguish the essential features of the studied subject by means of operations of synthesis and analysis, to identify cause-and-effect relationships in which there may be some insignificant errors, to form conclusions and generalizations;
Satisfactory "3"	The student of higher education generally mastered the theoretical knowledge of the educational component, but without a deep comprehensive analysis, justification and argumentation, makes significant inaccuracies and mistakes, the student has problems when identifying the essential features of the subject, when identifying cause-and-effect relationships and forming conclusions .
Unsatisfactory "2"	The student of higher education has not mastered the educational material of the educational component, does not know scientific facts, definitions, practical skills are almost not formed, the student has an unsystematic selection of random features of the studied, does not know how to perform the simplest operations of analysis and

synthesis, generalizations and conclusions.

### 9. Distribution of points received by higher education applicants

The obtained average score for the academic discipline for applicants who have successfully mastered the work program of the academic discipline is converted from a traditional four-point scale to points on a 200-point scale, as shown in the table:

**Conversion table of a traditional assessment into a multi-point scale**

<b>Traditional four-point scale</b>	<b>Multipoint 200-point scale</b>
Excellent ("5")	185 - 200
Good ("4")	151 - 184
Satisfactory ("3")	120-150
Unsatisfactory ("2")	Below 120

A multi-point scale (200-point scale) characterizes the actual success rate of each applicant in mastering the educational component. The conversion of the traditional grade (average score for the academic discipline) into a 200-point grade is performed by the information and technical department of the University.

According to the obtained points on a 200-point scale, the achievements of the applicants are evaluated according to the ECTS rating scale. Further ranking according to the ECTS rating scale allows you to evaluate the achievements of students from the educational component who are studying in the same course of the same specialty, according to the points they received.

The ECTS scale is a relative-comparative rating, which establishes the applicant's belonging to the group of better or worse among the reference group of fellow students (faculty, specialty). An "A" grade on the ECTS scale cannot be equal to an "excellent" grade, a "B" grade to a "good" grade, etc. When converting from a multi-point scale, the limits of grades "A", "B", "C", "D", "E" according to the ECTS scale do not coincide with the limits of grades "5", "4", "3" according to the traditional scale. Acquirers who have received grades of "FX" and "F" ("2") are not included in the list of ranked acquirers. The grade "FX" is awarded to students who have obtained the minimum number of points for the current learning activity, but who have not passed the final examination. A grade of "F" is assigned to students who have attended all classes in the discipline, but have not achieved a grade point average (3.00) for the current academic activity and are not admitted to the final examination.

Applicants who study in one course (one specialty), based on the number of points scored in the discipline, are ranked on the ECTS scale as follows:

#### **Conversion of the traditional grade from the discipline and the sum of points on the ECTS scale**

<b>Evaluation on the ECTS scale</b>	<b>Statistical indicator</b>
AND	Top 10% achievers
IN	The next 25% of earners
WITH	The next 30% of earners
D	The next 25% of earners
IS	The next 10% of earners

### 10. Methodical support

- Working program of the academic discipline
- Syllabus of the academic discipline
- Methodical developments for the lectures of the academic discipline

- Methodical developments for practical classes
- Methodical recommendations for independent work

### **11. Questions for preparing for the final control**

#### **Course 3 "Fixed and partially removable dentures"**

1. Examination of patients in orthopedic dentistry - stages, basic and additional methods of examination, medical documentation.
2. Preliminary and final diagnosis. Peculiarities of making a diagnosis in the clinic of orthopedic dentistry. Orthopedic treatment planning.
3. Biomechanics of lower jaw movements. Phases of chewing movements according to Guizi. Occlusion and articulation, types of occlusion, factors of occlusion.
4. Devices that reproduce the movements of the lower jaw - classifications, areas of application. The structure of articulators. Medium-anatomical articulators - design features, indications for use.
5. Types of analgesia in outpatient dental practice. Indications for local anesthesia in orthopedic dentistry.
6. Etiology of defects of the crown part of teeth. Defect classifications, Milikevich index. Types of orthopedic structures for replacing defects of the crown part of teeth, indications.
7. Artificial crowns - indications, classifications, comparative characteristics. Materials and technologies for manufacturing artificial crowns.
8. Oral cavity preparation for prosthetics. Requirements for teeth that are used as a support for fixed orthopedic structures.
9. Rules for preparation of teeth for fixed orthopedic structures, safety measures, methods of controlling the depth of preparation of hard tissues.
10. Protection of welcome teeth during and after preparation. Provisional structures, dentine sealants.
11. Methods of preparing teeth for artificial crowns. Complications during and after tooth preparation - causes, consequences, ways of prevention.
12. Marginal adaptation of artificial crowns, options for pre-orbital preparation, types of ledges. Gum retraction, types, methods, indications.
13. Artificial crowns - types, indications and contraindications, clinical and laboratory stages of production. Materials for making crowns.
14. Metal alloys for the manufacture of fixed orthopedic structures - classification, properties, application technologies.
15. Refractory masses - types, composition, properties.
16. Bridge prostheses - indications, contraindications, classifications, materials and manufacturing methods. Peculiarities of preparation of supporting teeth. Comparative characteristics of solid-cast and stamped-soldered structures.
17. Biomechanics of bridge prostheses, structural features, types of supporting elements.
18. Basic and additional methods of examination of patients with partial loss of teeth.
19. Structural and functional changes in the maxillofacial apparatus with partial loss of teeth.
20. Anatomical formations of the oral cavity that are important for removable prosthetics. Flexibility and mobility of the mucous membrane, their consideration in removable prosthetics. Assessment of the condition of alveolar processes in edentulous areas, classification according to Elbrecht.
21. Preparation of the oral cavity for prosthetics with removable partial dentures. Requirements for supporting teeth.
22. Designs of special equipment, their constituent parts. Peculiarities of the transformation of masticatory pressure by various types of CHZP.
23. Partial removable lamellar prostheses - indications, clinical stages of manufacture.

24. Partial removable lamellar prostheses with a metal base - indications, clinical stages of manufacture.
25. Bügel prostheses - indications, construction planning depending on clinical conditions. Selection of abutment teeth, requirements, preparation.
26. Checking the construction of partial removable prostheses.
27. Planning the construction of prostheses while preserving single teeth on the jaws.
28. Planning of fixing of special equipment. Staple lines. Factors affecting the choice of fixing elements in removable prostheses.
29. Obtaining working impressions for the production of CZP - materials and methods. Indications for obtaining impressions using individual spoons.
30. The concept of fixation, stabilization, balance of removable prostheses and the factors that provide them.
31. Clips - classifications, designs, manufacturing methods. Factors determining the choice of the type of stapler.
32. Lock fasteners (attachmen) - classifications, designs, indications.
33. Beam fasteners - types, designs, indications.
34. Telescopic fasteners - types, designs, indications.
35. Limits of the bases of partial removable plate prostheses on the upper and lower jaws.
36. Variants of the location of the arches of the brace prostheses on the upper and lower jaws. Arc parameters.
37. Groups of dentition defects according to Betelman, clinical characteristics.
38. The method of determining and fixing the central ratio of the jaws in the second group of defects according to Betelman.
39. The method of determining and fixing the central ratio of the jaws in the third group of defects according to Betelman. Methods of determining the occlusal height. Methods of determining the central ratio of the jaws.
40. The technique of fixing the central occlusion with occlusal blocks and gypsum blocks. Production technology of occlusive rollers, requirements for rollers.
41. Errors in determining and fixing the ratio of the jaws and their elimination.
42. Artificial teeth for removable prostheses - materials, types. Comparative characteristics of porcelain, composite, acrylic teeth. Rules for choosing artificial teeth.
43. Techniques for placing artificial teeth in the emergency department; options for placing teeth in the frontal area. Anatomical guidelines for setting teeth. Occlusal concepts in partial removable prosthetics.
44. Technology of compression pressing of plastics. Methods of plastering reproductions of prostheses in a cuvette.
45. Technology of foundry pressing of plastics. Equipment, materials. Directional polymerization mode.
46. Plastics for the manufacture of denture bases. Classifications, composition, properties. Types and modes of polymerization. Errors when working with plastic, types of porosity.
47. The technique of applying and correcting the CZP, recommendations for the patient on the care of the prosthesis. Phases of adaptation to removable prostheses according to Kurlyandskyi.
48. Parallelometry - purpose, tasks, methods of implementation.
49. Planning of fixing elements in hook-and-loop prostheses depending on clinical conditions. Calibration of models.
50. Preparation of models for duplication. Duplicating masses - types, composition, application technology. Production of refractory models.
51. Modeling of the wax reproduction of the frame of the brace prosthesis. Types of downspout system, construction rules.

52. Ney clamp system, indications for use.
53. Classification of molding compounds, composition, properties, indications for use.
54. Metal alloys for the manufacture of frameworks of braced prostheses and prostheses with a metal base. Cobalt-chromium alloy - composition, technological and physico-chemical properties, temperature regime.
55. Shrinkage of alloys during casting, types. Methods of compensating the shrinkage of alloys when casting frames of removable and non-removable structures.
56. Technologies of Lithuania in dentistry. Methods of melting and casting of metals. Spruce systems - types, construction rules.
57. Recommended terms of use of various types of special permits. Indications for replacement of prostheses. Rebasement of removable prostheses - indications, methods, materials.
58. Repair of prostheses (replacing a clasp, adding a tooth, repairing the base) is a technology. Causes of base fracture.
59. Factors affecting the bases of prostheses and prosthetic materials on the tissues of the prosthetic bed. Classifications of prosthetic stomatitis.
60. Errors and complications in the manufacture of partial removable prostheses and methods of their elimination.

#### **Course 4 "Complete removable dentures. Maxillofacial orthopedics"**

1. Examination of a patient with complete absence of teeth. Anamnesis: definition and structure.
2. Anatomical and physiological features of the oral cavity of a patient with full teeth
3. Changes in the maxillofacial apparatus due to complete loss of teeth.
4. External inspection. Intraoral examination patient with complete absence of teeth.
5. Preparation of the oral cavity for prosthetics with complete removable prostheses
6. Determination of the degree of jaw atrophy according to Schroeder, Keller. The importance of the condition of the jaws in ensuring the fixation of complete removable prostheses.
7. Assessment of the state of the mucous membrane of the prosthetic bed according to Supple and Lund. The importance of the state of flexibility of the mucous membrane, in relation to the choice of the method of obtaining an impression.
8. Classification of prints. Classification of print materials.
9. Anatomical and physiological substantiation of the limits of the prosthesis on the upper and lower jaw.
10. "Prosthetic field", "prosthetic bed", "neutral zone" - definition, topography and clinical significance.
11. Methods fixation of complete removable prostheses (mechanical, biomechanical, physical and biophysical).
12. Obtaining anatomical impressions from edentulous upper and lower jaws for the manufacture of individual spoons. Evaluation of print quality. Disinfection of prints.
13. Methods of making individual spoons.
14. Fitting a rigid individual spoon to the upper jaw according to the Herbst method.
15. Fitting a rigid individual spoon to the lower jaw according to the Herbst method.
16. Classification of functional prints.
17. "Functionally absorbent print» – term definition and clinical significance. Receiving.
18. "Actually a functional print» – term definition and clinical significance. Forming the edges of a functional impression.
19. Comparative characteristics of anatomical, self-functional and functional-suction impressions.
20. Boyanov's method of obtaining functional impressions from edentulous jaws.

21. Production of individual spoons according to the methods of Shrota, Tsito, Vasylenko.
22. Determination of the central ratio of edentulous jaws. Methods of determining the interalveolar height. Methods of fixing the central ratio of the jaws.
23. Definition of terms - "occlusal plane", "prosthetic plane", "central ratio", "central occlusion".
24. Characteristics of the state of relative physiological rest of the masticatory muscles.
25. Errors in determining central occlusion, their causes, signs and consequences.
26. Components of the masticatory system, their functional relationship. Masticatory muscles: classification, anatomy, function.
27. Anatomy and physiology of TMJ.
28. Phases of chewing according to Gizi.
29. Occlusion factors. Mandibular movements, sagittal articular path, sagittal articular path angle, sagittal incisal path, sagittal incisal path angle, Bennett movement, Bennett angle, transverse incisal path, gothic angle.
30. Definition of "occlusion" and "articulation", "working side" and "balancing side".
31. Devices that reproduce the movements of the lower jaw. Classification of devices. Occluders and articulators, their classification. Design principles.
32. Basic provisions of articulation theory. Postulates of Bonville, Ganau, Gizy.
33. Spherical theory of articulation (Monson, Sapozhnikov, Chernykh, Khmelevsky).
34. Christensen's phenomenon, an intra-oral way of determining the angles of the sagittal and transverse paths (the Efron, Gelfand, Katz method).
35. Verification of the design of complete removable prostheses, the essence of the clinical stage. Errors in fixing the central ratio in the complete absence of teeth, methods of elimination.
36. Clinical signs of increasing and decreasing bite height.
37. Checking the design of complete removable prostheses in the articulator.
38. Types and rules of plastering wax reproductions in a cuvette. Stages of polymerization of plastics. Compression and casting pressing.
39. Fixation, stabilization and balance of complete removable prostheses. Phases of adaptation to prostheses according to V. Yu. Kurlyandskyi.
40. Peculiarities of repeated prosthetics of patients who previously used complete removable prostheses.
41. Inspection of occlusal contacts, polishing of artificial teeth.
42. Classification of diseases of the mucous membrane of the oral cavity, which occur under the influence of removable prostheses according to Z.S. Vasylenko. Etiology, clinic and pathogenesis. Treatment.
43. Characteristics of non-inflammatory diseases of the mucous membrane of the oral cavity, which occur under the influence of removable prostheses.
44. Principles of anatomical arrangement of teeth according to M.E. Vasiliev.
45. Peculiarities of setting teeth with prognathic and prognathic ratio of the jaws.
46. Principles of setting teeth with a spherical surface (according to Monson).
47. Principles of setting teeth with a Gizi.
48. Recording of individual movements of the lower jaw. Methods of Katz-Efron-Gelfand, M.A. Napadov and A.L. Sapozhnikov.
49. Types of artificial teeth, methods of connection with the base.
50. Methods of fixation of complete removable prostheses: mechanical, biomechanical, physical and biophysical.
51. Sequence of treatment of complete removable prostheses after polymerization.
52. Correction of complete removable prostheses.
53. Grinding and polishing of complete removable prostheses. Means and tools.

54. Repair of removable prostheses.
55. Storagebasic plastics: characteristics, advantages and disadvantages.
56. Rules for manufacturing wax bases with biting rollers.
57. Compression and casting pressing. Polymerization modes of plastics.
58. Classifications of jaw fractures: D.A. Entina, I.H. Lukomsky, Le Faure, B.D. Kabakov.
59. Groups of masticatory muscles and their functions are normal. Mechanism of movements of the lower jaw. Neuromuscular apparatus.
60. The mechanism of displacement of fragments in fractures of the upper jaw.
61. The mechanism of displacement of fragments in fractures of the lower jaw: in unilateral mental and angular fractures.
62. The mechanism of displacement of fragments in fractures of the lower jaw along the middle line, in the area of the condylar sprout.
63. The mechanism of displacement of fragments in fractures of the lower jaw: in unilateral mental and angular fractures.
64. The mechanism of displacement of fragments in bilateral fractures of the lower jaw.
65. Maxillofacial orthopedics and maxillofacial prosthetics of increased complexity. Definition, purpose and tasks, stages of development.
66. Classification of maxillofacial devices used for the treatment of the wounded and sick, their characteristics.
67. Classification of fractures of the upper and lower jaws. Features and mechanism of displacement of fragments of the lower jaw depending on the localization of the fracture line and its type.
68. Features of traumatic injuries of the maxillofacial area. Non-fire and fire damage.
69. Transport tires. Ligature binding. Kinds Indications for use.
70. Peculiarities of providing orthopedic care for fractures with limited mobility of fragments. Devices and tires. The principle of their action.
71. Peculiarities of providing orthopedic care for fragments that have not fused properly, false joints. Devices and tires. The principle of their action.
72. Forming and fixing devices for plastic surgery of soft tissues and osteoplasty of jaws in patients injured in the maxillofacial region and after surgical interventions.
73. Contractures of the lower jaw, their classification. Mechanism of development of contractures. Orthopedic interventions in the treatment of contractures. Therapeutic gymnastics.
74. Etiology and clinic of microstomia. Dental prosthetics of maxillofacial patients with microstomia. Peculiarities of taking impressions and manufacturing prosthetic structures.
75. Prosthetics during resection of the upper jaw. Types (alveolar process, one-sided, on the edentulous jaw). Amount. Direct and subsequent prosthetics.
76. Prosthetics during resection of the lower jaw. Types (alveolar part, unilateral, chin, branches). Amount. Direct and subsequent prosthetics. Features of the use of tires and prostheses.
77. Prosthetics for facial defects. Reasons. Getting a face mask. Ectoprostheses. Methods of fixation. The concept of epithets.

#### **Course 5 "Orthopedic methods of treatment of diseases of the dental and jaw apparatus"**

1. Methodology of examination of the patient in the clinic of orthopedic dentistry. Medical history. Plan and objectives of orthopedic treatment. Types and tasks of prosthetics.
2. Indications and volume of oral cavity preparation for prosthetics
3. Indications and contraindications for the manufacture of metal-ceramic structures

4. Sequence and rules of tooth preparation. Selection of tools. Forms of ledges. The choice of the method of retraction of the gingival margin (mechanical, chemical, surgical and combined), depending on the clinical situation.
5. The technology of obtaining an accurate impression. Selection of printing masses.
6. Evaluation of the finished metal-ceramic structure. Possible errors and complications at various stages of production, ways to prevent them and methods of elimination
7. Classification of teeth defects (Kurylenko, Black). Index of destruction of the occlusal surface of the tooth (Milikevych).
8. Indications for the manufacture of veneers. Requirements Comparative characteristics of veneers made by different technologies. General principles of tooth preparation for vinyl veneers. Clinical and laboratory stages of prosthetics with veneers.
9. CAD/CAM manufacturing technology.
10. Fixation of veneers (adhesive technique of fixation on composite cements)
11. General principles of cavity formation for tabs. Formation of cavities of I, II, III, IV, V class according to Blak.
12. Designs of tabs (inlay, onlay, overlay, inlay). Clinical and laboratory stages of prosthetics with cast metal inserts.
13. Indications and contraindications for replacement of defects of hard tissues of teeth, ceramic inserts, crowns, technology of their manufacture.
14. Cast and collapsible cast stump inserts: manufacturing technology and indications for use.
15. Indications and contraindications for the replacement of dental defects with non-removable structures.
16. Biomechanics of bridge prostheses. Requirements and selection of abutment teeth for fixed bridge-like structures. Constructions of bridge prostheses.
17. Indications and clinical and laboratory stages of production of cast and metal-ceramic bridge prostheses.
18. Errors and possible complications of permanent prosthetics.
19. Temporary prosthetics indication and method of implementation. Clinical and laboratory stages of production. Comparative characteristics of various methods of manufacturing temporary crowns.
20. Possible complications of preparation of hard tissues of teeth and ways to prevent them.
21. Periodontological aspects of tooth preparation. Methodology of subgingival dissection. The location of the edges of the crowns depending on the type of artificial crown (stamped, cast, cast combined).
22. Fixation of non-removable structures with various types of fixing cements. Factors that affect the quality of fixation of a fixed structure.
23. Indications and contraindications for the manufacture of various designs of partial removable prostheses (plate, buckle, combined). Design features of various types of partial removable prostheses and methods of their fixation.
24. Biomechanics of the functioning of a partial removable prosthesis. Selection of supporting elements when planning the design of a partial removable prosthesis, preparation of supporting teeth, determination of the limits of the prosthesis.
25. Errors and complications in the restoration of dentition defects with partial removable prostheses.
26. Partial absence of teeth, which is complicated by deformation of the dental rows; morphological and functional changes of the maxillofacial apparatus.
27. Mechanisms of formation of dento-jaw deformations. Clinical forms of deformities that arose as a result of partial absence of teeth.
28. Preparation of the maxillofacial system for prosthetics in the presence of maxillofacial deformities (prosthetic, surgical, orthodontic).



29. Etiology and pathogenesis, clinical manifestations of pathological wear of hard tissues of teeth. Morphological features of human teeth in normal and pathological wear.
30. Diagnosis of excessive wear of teeth and its complications. Compensated and decompensated forms. Classifications of pathological tooth wear (Grozovsky, Kurlyandsky, Gavrilov, Bushan).
31. Complications with pathological tooth wear, which is accompanied by a decrease in the interalveolar height and TMJ dysfunction. Orthopedic treatment depending on clinical forms and complications.
32. Traumatic occlusion. Diagnostics. Clinical signs. Morphological and functional changes in the maxillofacial apparatus in the presence of traumatic occlusion.
33. Etiology, clinic and treatment of direct and reflected traumatic node. Indications, sequence and rules of selective grinding of teeth.
34. Types of supercontacts. Super contacts on the working and balancing side.
35. The value of selective grinding for the prevention of functional overload of teeth.
36. Anatomical and physiological characteristics of the chewing apparatus in periodontitis and periodontitis.
37. Classification of periodontal tissue diseases. Examination of a patient with periodontitis and periodontitis.
38. Kurlyandskyi'sodontoparodontogram: concept of functional pathology; reserve and residual capacity of the periodontium.
39. Types of stabilization of tooth rows. Biomechanical bases of tooth splinting
40. Tasks of orthopedic interventions in the complex treatment of periodontal diseases. Preliminary preparation of dental rows before prosthetics. Temporary splinting. Types and indications for use.
41. Etiology, diagnosis, clinic and orthopedic methods of treatment of localized and generalized periodontitis. The role of local factors.
42. Removable and non-removable designs of dental prostheses in the complex treatment of localized and generalized periodontitis and.
43. Direct prosthetics. Indications, clinical and technological stages of manufacturing and use of immediate prostheses.
44. Errors and complications in the treatment of patients with periodontitis and periodontitis.
45. Etiology and pathogenesis of TMJ dysfunctions. Caps, their classification, indications for use. Prevention of TMJ dysfunctions.
46. Leading clinical symptoms and syndromes in occlusion-articulation syndrome. Leading clinical symptoms and syndromes in neuromuscular syndrome.
47. Types of displacement of the articular heads (hypermobility, dislocation, subluxation). Types of displacement of the articular disc (subluxation, dislocation, prolapse).
48. Clinical signs of dysfunctional states. Tactics of managing a patient with TMJ dysfunction. Methods of orthopedic treatment.
49. Prosthetics using dental implants. Indications and necessary conditions for prosthetics using dental implants.
50. Planning the design of a dental prosthesis with support on implants depending on clinical conditions and the use of different types of abutments.
51. Designs of dental implants and components. Indications for the use of various types of abutments.
52. Advantages and disadvantages of various types of abutment-implant connections. Types of gum formers, their choice depending on the biotype of the gums.
53. Peculiarities of clinical and laboratory stages in prosthetics on implants. Peculiarities of removing impressions (closed spoon method and open spoon method).

54. Methods of modeling frames of conditionally removable and removable structures. Advantages and disadvantages of conditionally removable and removable structures.
55. Indications and necessary conditions for removable prosthetics using dental implants.
56. Principles of occlusion formation during prosthetics on implants, features of partial and complete adentia.
57. Errors and complications of dental implantation at the orthopedic stage of patient treatment and after treatment.
58. Clinical and functional examination methods. Occlusionography. Axiography.
59. Additional methods of examination: radiography, galvanometry, electromyography, rheography, electroodontology, gnathodynamometry, diagnostic models, periotest.
60. Electromyography, technique, informativeness at the stages of orthopedic treatment.
61. Preparation of the oral cavity for dental prosthetics, surgical, therapeutic, orthodontic, orthopedic, psychological types) their scope and significance.
62. Classification of dentition defects according to Betelman, Kennedy. Their importance in the clinic of orthopedic dentistry.
63. Articulation. Movements of the lower jaw. Mechanism, main parameters of movements. Phases of chewing movements according to Guizi. The Christensen phenomenon. Value in the design of complete removable prostheses.
64. Anatomy of the occlusal surface of teeth and tooth rows Concept of dental, alveolar and basal arches. Occlusal curves (Speyer and Wilson). Factors that ensure the stability of teeth.
65. Factors of occlusion (articular path; Bennett's movement; occlusal plane - Speyer, Wilson; morphology of occlusion; incisal path; distance between articular heads).
66. Pain. Analgesia Analgesia methods in orthopedic dentistry. Medical and pharmacological means of pain relief. Possible errors and complications of analgesia (dizziness, collapse, anaphylactic shock), clinical signs, scope of emergency care.
67. Indications for the manufacture of artificial crowns. Classifications. Requirements Comparative characteristics of artificial crowns. Clinical and laboratory stages of making crowns.
68. Anatomical and physiological features of the oral cavity with partial loss of teeth. Selection and substantiation of the designs of partial removable prostheses for included and distally unrestricted defects of the dentition.
69. Obtaining impressions during the manufacture of partial removable prostheses. Requirements for impressions. Methods of fixing partial removable prostheses. The role of biophysical and mechanical methods of strengthening removable prostheses.
70. Abutment teeth, their significance for fixation of prostheses. Types of strengthening prostheses. Selection of supporting teeth. Classification of paper clips. Ways of connecting clasps with prostheses.
71. Value of anatomical retention elements for fixation of partial removable prostheses. Clipless prostheses. Indications for their use.
72. Determination and fixation of central occlusion in cases of I, II and III groups of dentition defects.
73. The choice of the design of a dental prosthesis in the presence of one tooth on the upper or lower jaws.
74. Laboratory stages of manufacturing partial removable prostheses. Materials used for this.
75. Indications for the manufacture of partial removable prostheses with a metal base. Clinical and laboratory stages of production.
76. Replacement of tooth row defects with brace prostheses. Indications and contraindications for the manufacture of brace prostheses. Structural elements of bygel prostheses and their meaning.

77. Diagnostic models. Requirements for them, production rules. Planning of the design of brace prostheses. Parallelometry. Purpose, task. Methods and stages of parallelometry. Selection of supporting teeth.
78. The system of clasps. Indications for their use. Classification. Components of cracker.
79. Attachés Classification. Indications for use.
80. Lithuania frames of braced prostheses on fire-resistant models. Duplication of models. Duplication materials. Requirements for the frame of the brace prosthesis.
81. Metal shrinkage compensation. Molding masses. Metal alloys for the manufacture of braced prostheses.
82. The shape, size and position of the arch of the brace prosthesis on the upper and lower jaws depending on the topography of the tooth row defect.
83. Fitting and correction of a partial removable prosthesis. Mechanism and terms of adaptation to partial removable prostheses. Rules for using partial removable prostheses.
84. The effect of removable prostheses on the tissues of the oral cavity. Diagnosis, clinic and treatment of prosthetic stomatitis
85. Artificial teeth. Manufacturing methods, materials. Rules for selecting artificial teeth for placement in removable prostheses. Rules for placing artificial teeth. Fixation in the base of the removable prosthesis.
86. Compression and casting pressing of plastics. Materials, equipment. Methods of plastering models in a cuvette, plastic packaging
87. Stages of polymerization of plastics. Preparation of plastic for packaging. Modes of polymerization. Insulating materials.
88. Laboratory stages of manufacturing partial removable prostheses from thermoplastic materials. Comparative characteristics of prostheses with plastic and thermoplastic bases. Materials used for manufacturing the bases of removable prostheses. Positive and negative properties.
89. Evaluation of the quality of polymerization of base materials. Porosity, types, causes and methods of elimination.
90. Temporary and transitional prosthetics. Biomechanics of prosthetics on implants.
91. Indications and clinical and technological stages of manufacturing non-removable cast tires and prosthetic tires.
92. Classifications of alveolar process atrophy. (according to Schroeder, Keller, Oxman). Morphological features of the structure of edentulous jaws, which should be taken into account when manufacturing complete removable prostheses.
93. Determination of the central ratio of the jaws in the complete absence of teeth
94. Setting teeth in complete dentures. Checking the design and fitting of complete removable dentures. Mechanism of adaptation to complete dentures.
95. Classification of susceptibility of the mucous membrane of edentulous jaws (Lund, Suple). Buffer zones according to Gavrylov. Values for selecting the fingerprint acquisition method
96. Movable, immobile, passively mobile mucous membrane. Transition fold. Neutral zone. Topography of the neutral zone on the upper and lower jaws. Anatomical features of edentulous jaws, which are important for fixation of plate removable prostheses.
97. Classification of impressions for the manufacture of complete removable prostheses (by the height of the edges, the degree of imprinting of the mucous membrane). Impression masses, their properties, indications for use.
98. Fixation, stabilization, balance of complete removable prostheses and factors that provide them.
99. Methods of obtaining functional impressions of edentulous jaws.

100. One-time method of manufacturing individual wax spoons for the upper and lower jaws. The method of obtaining functional prints with their help (Vasylenko's method).
101. Herbst's method of functional imprinting. Functional tests, their clinical rationale.
102. Production of rigid individual spoons. Fitting individual spoons according to the Herbst method to the upper and lower jaws (functional tests).
103. Manufacturing rules and requirements for wax templates with occlusal rollers in prosthetics with complete removable prostheses.
104. Aesthetic and functional disorders with changes in the interalveolar height. Fixation of the lower jaw in a neutral position. samples Checking the correctness of determining the central ratio of the jaws.
105. Classification of devices that reproduce the movements of the lower jaw
106. Joint theory of articulation (Guisey, Ganau, Bonneville)
107. Spherical theory of articulation (Monson, Sapozhnikov)
108. Extraoral methods of registration of individual movements of the lower jaw. (axiography)
109. Methodology of Efron, Katz, Gelfand
110. Landmarks for installing artificial teeth. Placement of artificial teeth in complete dentures.
111. Anatomical setting of teeth Setting of teeth according to M.E. Vasyliiev, on a spherical surface.
112. Verification of the design of complete removable prostheses. Putting on full dentures. Adaptation. Rules and recommendations for using complete dentures.
113. Pathological impact of materials used in orthopedic dentistry. Differential diagnosis, treatment and prevention.
114. Etiology and pathogenesis of TMJ dysfunctions. Leading clinical symptoms and syndromes in TMJ dysfunctions (occlusion-articulation syndrome, neuromuscular syndrome, habitual subluxation, dislocation, persistent functional displacement of the lower jaw, bite that decreases).
115. Clinical signs of dysfunctional conditions. Melkimo dysfunction index. Data of clinical and special (additional) methods for various clinical variants of the course and complications.

## 12. Recommended Books

### Main:

1. Orthopedic dentistry: textbook / M.M. Rozhko, V.P. Nespryadko, I.V. Paliichuk and others.
2. M.M. Rozhko, V.P. Nespryadko, I.V. Paliychuk et al. Prosthetic technique: textbook - Kyiv, "Knyga-plus", 2016. - 604 p.
3. Ishchenko P.V., Klyomin V.A., Kachalov R.H., Likhota A.M. Military orthopedic stomatology. - K.: Medical University "Medicine". -2018. -312 p.

### Additional:

1. Gasyuk P.A., Kostenko E.Ya., Shcherba V.V., Savchyn V.Ya. Prosthetics for complete loss of teeth. – Uzhhorod, 2013. Zakarpattia publishing house. - 222 p.
2. Dentistry: in 2 books. — Book 1: textbook (University III-IV years) / M.M. Rozhko, Z.B. Popovych, V.D. Kuroyedova .. -K.: VSV "Medicine", 2012. - 872 p.
3. Chulak L.D., Shuturminskyi V.G. Clinical and laboratory stages of manufacturing dental prostheses. Odesa. Odesa honey. University, 2009, 318 p
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