

**SYLLABUS OF THE EDUCATIONAL COMPONENT  
ORTHOPEDIC DENTISTRY (INCLUDING IMPLANTOLOGY)**

Specialty: **221 "Dentistry"**

Educational and professional program: **Dentistry**

Component code in the educational program: **GC 30**

Level of higher education: **second (master's)**

Form of education: **full-time (full-time)**

Year of study: **4**

Semester(s): **VII (autumn), VIII (spring)**

Type of educational component: **mandatory**

Academic year: **2027-2028**

Amount: **4 ECTS credits (120 hours)**

Training sessions: **lectures, practical classes, independent work, consultations**

Final control: **exam**

Prerequisites: **GC 4; GC 6; GC 7; GC 8; GC 12; GC 13; GC 14; GC 16; GC 18; GC 19; GC 20; GC 21; GC 22; GC 23; GC 25; GC 27**

Department/Unit: **Department of Prosthetic Dentistry**, Peremohy Ave., 51, UDC KhNMU, 4th floor

Head of the educational component: Doctor of Medical Sciences, **Professor Yanishen Igor**

**Volodymyrovych**,

email: [iv.yanishen@knmu.edu.ua](mailto:iv.yanishen@knmu.edu.ua)

Page of the educational component in the Distance Learning System of KhNMU

(Moodle): <http://distance.knmu.edu.ua/course>

**DESCRIPTION OF THE EDUCATIONAL COMPONENT**

Orthopedic dentistry is an educational component aimed at developing knowledge and practical skills in diagnosing, planning, and performing orthopedic treatment for defects in hard dental tissues, partial and complete tooth loss using modern designs of fixed and removable dentures.

**PURPOSE OF THE COURSE:** professional formation of a future specialist capable of solving clinical problems using acquired knowledge and skills in the discipline, which involves the integration of teaching the educational component with therapeutic, surgical and pediatric dentistry.

**LEARNING OUTCOMES:**

- Explain the anatomical, physiological and biomechanical foundations of the functioning of the dento-maxillary apparatus that are important for orthopedic treatment.
- Diagnose defects in hard dental tissues, partial and complete tooth loss, determine the types of occlusion disorders and plan methods for their orthopedic correction.
- Choose the optimal type of orthopedic structure (fixed, removable, combined, on implants) according to the clinical situation.
- To master the methods of clinical and laboratory stages of manufacturing orthopedic structures, to control the quality of the prostheses and the accuracy of their fixation.
- Apply modern materials, digital technologies and CAD/CAM systems in the process of making dentures.
- Evaluate the functional, aesthetic, and biocompatible characteristics of prostheses, determine the causes of possible complications and ways to eliminate them.

**CONTENT OF THE EDUCATIONAL COMPONENT**

**List of lectures topics (10 hours):**

1. Anatomical and topographic features of the structure of the dentofacial region in edentulous jaws. The doctrine of fixation of prostheses on edentulous jaws. Obtaining impressions from a patient with complete absence of teeth
2. Determination of the central ratio of the jaws in the complete absence of teeth. Laws of articulation in the design of dental prostheses.

3. Verification of the design of removable lamellar dentures. Errors in determining the central ratio of the jaws. Causes and prevention. Laboratory stages of manufacturing complete removable dentures.
4. Maxillofacial orthopedics. Purpose, tasks. Classification of jaw fractures. Clinic, diagnostics and orthopedic treatment.
5. Organization of orthopedic dental care in the army and navy in peacetime and wartime.

**List of topics of practical lessons (70 hours):**

1. Examination of the patient's oral cavity in the complete absence of teeth. Anatomical and functional changes in the maxillofacial region in complete edentia. Methods for obtaining anatomical impressions from the edentulous upper and lower jaws for the manufacture of individual trays.
2. Manufacturing of individual trays for the upper and lower jaw. Fitting of rigid individual trays. Herbst functional tests.
3. Classification of functional impressions from the upper and lower jaws. Determination of the central ratio of the jaws in dentition defects of group IV according to Betelman. Determination of landmarks for the construction of artificial dentition.
4. Biomechanics of lower jaw movements. Occlusion factors. Functional harmony of the masticatory system. Theories of articulation, basic principles.
5. Principles of working with an articulator in prosthetics of patients with edentulous jaws. Anatomical positioning of teeth on glass, behind a spherical surface.
6. Checking the design of complete removable dentures. Stages of plastering in a polymerization cuvette, polymerization methods. Processing of complete removable dentures after polymerization of plastics. Adjusting dentures.
7. Fixation of complete removable dentures. Adaptation to dentures. Correction of complete removable dentures. Final lesson.
8. Emergency dentistry. Scope of orthopedic care for maxillofacial injuries and dental equipment at the stages of treatment.
9. Maxillofacial orthopedics. Purpose and tasks. Mechanism of displacement of fragments in jaw fractures. General characteristics of maxillofacial appliances and their classification. Transport splints. Ligature bonding of teeth.
10. Etiology, clinical features and orthopedic treatment of jaw fractures with persistent displacement of fragments. Scope of specialized orthopedic care for wounded with jaw fractures. Laboratory-made splints.
11. Etiology, pathogenesis, clinical manifestations of contractures of the lower jaw and fractures that have not healed properly. Causes of the formation of a false joint, clinical manifestations. Pathological anatomy of a false joint. Dental prosthetics.
12. The use of orthopedic devices in osteoplasty and soft tissue plastic surgery of the maxillofacial region (forming and fixing devices). Etiology, pathogenesis, clinical manifestations of contractures of the lower jaw, their classification. Prevention of contractures and orthopedic methods of their treatment.
13. Microstomia. Etiology, clinical features. Features of dental treatment and prosthetics of microstomia.
14. Prevalence, etiology, pathogenesis and orthopedic treatment of defects of the hard and soft palate. Prosthetics of defects of the facial area (ectoprotheses). Obtaining a face mask. Final lesson.

**List of topics of independent work of the student (40 hours)**

1. Examination of the oral cavity of a patient with complete absence of teeth.
2. Manufacturing of individual trays for the upper and lower jaw.
3. Classification of functional impressions from the upper and lower jaws.
4. Biomechanics of lower jaw movements.
5. Principles of working with an articulator in prosthetics of patients with edentulous jaws.

6. Verification of the design of complete removable dentures.
7. Fixation of complete removable dentures.
8. Emergency dentistry.
9. Maxillofacial orthopedics.
10. General characteristics of maxillofacial apparatus and their classification.
11. Etiology, pathogenesis, clinical manifestations of mandibular contractures and malunion fractures.
12. The use of orthopedic devices in osteoplasty and soft tissue plastic surgery of the maxillofacial region.
13. Microstomia. Etiology, clinical features.
14. Prevalence, etiology, pathogenesis and orthopedic treatment of defects of the hard and soft palate.

The IWS is aimed at deepening and consolidating the theoretical knowledge gained during classroom training and contributing to the formation of professional competencies. The results of the IWS are subject to control and are included in the final control of knowledge.

**Consultations:** online, according to the schedule of the educational department.

**Teaching methods:** narrative-explanation, conversation, illustration, demonstration, presentation, videos, video films, discussion, modeling of processes and situations, case method, project method, debate, "Brainstorming" method.

#### EVALUATION

**Current Learning Activities (CLA)**- is the educational activity of a student during the semester, which is controlled by a scientific and pedagogical worker conducting classes in a group. CLA is considered completed if the student has completed all missed classroom lessons and lectures in the current semester, and the average score for all PC topics is 3 points or higher, in which case the report is marked "completed" and the average score in a 4-point system is indicated (calculated automatically within the functionality of the ASM electronic journal), or "not completed", if the student has missed classroom lessons and lectures in the current semester, or the average score is below 3 points.

**Independent work of the student (IW)** The educational material of the discipline, intended for the student to master in the process of independent work, is submitted for final control together with the educational material studied during classroom training sessions.

**General Educational Activities (GEA)**- is considered completed if student has completed all missed classroom lessons and lectures, and the average score for all PC topics is 3 points or higher. Points for the GEA for disciplines with the form of control "differentiated credit" are calculated as the arithmetic average of PC points for all topics of all semesters, throughout the entire period of studying the discipline (with an accuracy of one hundredth) according to Table 1 "Recalculation of the average score for current control into a multi-point scale, automatically within the functionality of the electronic journal of the ASM. GEA is determined in points from 70 to 120. GEA is determined in points from 120 to 200, in accordance with the "Instructions for assessing the educational activities of higher education applicants at KhNMU".

**Individual tasks (IT)** contribute to a more in-depth study of theoretical material by the student, the formation of skills in using knowledge to solve relevant practical tasks. IT is performed by the student independently, receiving the necessary consultations from a scientific and pedagogical worker.

- report student's essay on a practical lesson 0-2 points;
- presentation report in the practical lesson 0-3 points,
- report at scientific and practical conferences, writing abstracts, articles 0-5 points;
- participation in the All-Ukrainian Olympiad – 5-10 points

IT are evaluated in points (no more than 10), which are added to the points scored for the LND upon completion of the discipline, during the "credit test."

The total score for GEA and IT cannot exceed 200 points.

**Final control.** For educational components, the study of which ends in the current semester, and the form of control is "exam", it is assumed that admission to the exam is determined by the LND points from 70 to 120, in the absence of missed classroom lessons and lectures. Missed classroom lessons and lectures must be worked out in a mandatory manner. The exam is evaluated from 50 to 80 points.

**Grade in subject (GS).** The grade for the discipline is the sum of the points for the CLA, IT and DC and ranges from 120 to 200 points.

**Appealing the results of the final control** is carried out in accordance with the procedure established in KhNMU ([https://knmu.edu.ua/wp-content/uploads/2021/05/polog\\_apel\\_kontrol.pdf](https://knmu.edu.ua/wp-content/uploads/2021/05/polog_apel_kontrol.pdf)).

### EDUCATION COMPONENT POLICIES

**Recommendations for working on the course:** To successfully complete the relevant course, you must regularly attend practical classes; have theoretical preparation for practical classes according to the topic; not be late or miss classes; complete all necessary tasks and work in each class; be able to work with a partner or as part of a group; contact the course supervisors for help on various issues related to the subject of the classes and receive it when you need it. The participation of education seekers in conducting scientific research and conferences on this topic is encouraged.

**Attending classes.** Attendance at lectures and practical classes is mandatory. The uniform for offline classes is a white medical gown. If you are more than 5 minutes late, you may not be allowed to attend the class. Missed classes are made up in accordance with the Regulations on the procedure for students of KhNMU to complete classes ([https://knmu.edu.ua/wp-content/uploads/2021/05/polog\\_vidprac\\_zaniat.pdf](https://knmu.edu.ua/wp-content/uploads/2021/05/polog_vidprac_zaniat.pdf)).

**Academic integrity.** KhNMU stands on the positions of zero tolerance to manifestations of academic dishonesty. Any violations of the principles of academic integrity entail responsibility in accordance with the procedure established by KhNMU ([https://knmu.edu.ua/wp-content/uploads/2021/05/polog\\_ad-1.pdf](https://knmu.edu.ua/wp-content/uploads/2021/05/polog_ad-1.pdf)).

**Use of electronic gadgets and artificial intelligence tools.** Copying, using various kinds of software, hints, using a mobile phone, tablet, or other electronic gadgets during class for purposes unrelated to the educational process are not allowed.

**Policy on individuals with special educational needs.** Applicants with special educational needs should contact a teacher to develop an individual educational trajectory.

**Teacher response time:** 24 hours.

### Technical requirements for the course:

- access to a computer, laptop, tablet or smartphone
- corporate Google account with your own photo
- skills in working with Google Workspace (Google Meet, Docs, Sheets, Slides, Forms) and Moodle

**Technical support:** ASM (ev.shevtsov@knmu.edu.ua), Google (tehotdelknmu@gmail.com), Moodle (al.korol@knmu.edu.ua)

### RECOMMENDED SOURCES

1. Dentistry. Textbook. In 2 books. – Book. 1 /M.M.Rozhko, Z.B.Popovich, V.D.Kuroyedova and others.; edited by Prof. M.M.Rozhko. – K.: VSV “Medicine”, 2020. – 872 p.
2. Rozhko M.M., Nespryadko V.P., Mykhailenko T.N. and others. Prosthetic technique. – K.: Kniga-plus, 2018. – 604 p.
3. Basic technologies for manufacturing dentures: teaching aids / Vinnytsia. NMU named after M.I. Pirogov, Ukr. med. stomat. academy, Ternop. State Medical University named after I.Ya. Gorbachevsky; compiled by E.V. Belyaev and others. - Vinnytsia: Works, 2019. - 104 p.
4. Gasyuk P.A., Kostenko E.Ya., Machogan V.R., Rosolovska S.O., Vorobets A.B., Radchuk V.B. Stud Book on Orthopedic Dentistry. Ternopil-Uzhgorod. 2018. - 369 p.

5. Gasyuk P. A. Almanac of Orthopedic Dentistry // P. A. Gasyuk, E. Ya. Kostenko, V. R. Machohan, S. O. Rosolovska, A. B. Vorobets // Ternopil: Bohdan – 2018. – 352p.
6. Maxillofacial orthopedics: a textbook /E.Yu. Lokota, E.Ya. Kostenko, Y.E. Lokota, S.B. Kostenko, M.E. Izay, O.E. Kostenko, I.I. Petryuk. Uzhgorod: State Higher Educational Institution "UzhNU", 2023. 112 p.
7. Gasyuk P. A. Technological aspects of manufacturing orthopedic structures // P. A. Gasyuk, D. M. Korol, S. O. Rosolovska, L. S. Korobeynikov, V. B. Radchuk, R. V. Kozak // Ternopil: FOP Parkhin R. A. – 2017. – 140p.
8. Korol M. D. Dental materials science / M. D. Korol, O. D. Odzhubeyska, D. M. Korol, I. M. Tkachenko, V. M. Petrushanko, M. O. Ramus, A. D. Dorubets, D. D. Kindiy, L. S. Korobeynikov // Poltava: FOP Myron I. A. – 2018. – 176p.

Methodological guidelines:

1. Order of patient's orthopedic treatment stages. Golik VP, Yanishen IV, Grishanin GG, Tomilin VG, Diudina IL 2017.  
<http://repo.knmu.edu.ua/handle/123456789/15536>
2. Modern methods of examination of dental patients. Preparation of the oral cavity before orthopedic intervention. Drawing up a treatment plan for a dental patient. Yanishen I.V., Pereshyvailova I.O., Pogorila A.V., Yaryna I.M. - 2018.  
<http://repo.knmu.edu.ua/handle/123456789/22247>

Lectures:

1. Maxillofacial orthopedics. Goals and objectives. Classification of jaw fractures. Clinical, diagnostic, orthopedic treatment. Tomilin, VG -2019.  
<http://repo.knmu.edu.ua/handle/123456789/12147>

Head of the Department  
of Prosthetic dentistry,  
Doctor of Medical Sciences, Professor

Igor YANISHEN