SYLLABUS OF THE EDUCATIONAL COMPONENT
MODERN TECHNOLOGIES BY ONE-PIECE-CAST PROSTHETICS

Specialty: **221 "Dentistry"**
Educational and professional program: **Dentistry**
Component code in the educational program: **EC 75**
Level of higher education: **second (master's)**
Form of education: **full-time (full-time)**
Year of study: 5
Semester(s): **IX (Autumn)**
Type of educational component: **elective**
Academic year: **2028-2029**

Amount:**4ECTS credits (120 hours)**
Training sessions: **practical classes, independent work, consultations**
Final control: credit
Prerequisites: **GC 4; GC 6; GC 7; GC 8; GC 12; GC 13; GC 14; GC 17; 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
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Page of the educational component in the Distance Learning System of KhNMU (Moodle):http://distance.knmu.edu.ua/course

DESCRIPTION OF THE EDUCATIONAL COMPONENT

The elective component " **Modern technologies by one-piece-cast prosthetics** " is a separate course in orthopedic dentistry, which allows students to gain in-depth knowledge in the field of modern technologies using the latest materials and technologies during orthopedic treatment of dental patients with defects of hard dental tissues and with defects of dentition with solid cast fixed and removable types of dentures, as well as selecting fixing cements according to their quality for fixed dentures and improving methods of fixing removable dentures. Modern orthopedic treatment of dental patients with defects of hard dental tissues and with defects of dentition with solid cast fixed and removable types of dentures is very common today, therefore, in-depth study of this discipline has a special basis and should play an important role in the formation of future specialists.

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 discipline with therapeutic, surgical and pediatric dentistry.

LEARNING OUTCOMES:

- Explain modern principles, methods and materials of complete prosthetics, in particular metal and non-metal structures.
- To master the technological stages of manufacturing solid removable dentures— from anatomical and functional impression to final installation of the structure.
- Evaluate the functional, aesthetic and biomechanical parameters of finished prostheses, detect and eliminate errors in design or fit.
- Analyze the causes of complications during the use of complete denturesand determine ways to prevent and correct them.

CONTENT OF THE EDUCATIONAL COMPONENT

List of topics of practical lessons (40 hours):

1. Classification of impression materials. Selection of impression material depending on the orthopedic design.
2. Orthopedic treatment methods with fixed cast composite denture structures. Indications and contraindications.

3. Materials science issues. Frame type and choice of metal alloys for all-ceramic cast structures.
4. Metal-ceramic and metal-plastic restorations. Indications. Features of preparation of hard dental tissues.
5. Fixing materials and methods of cementing fixed denture structures.
6. Orthopedic treatment methods for removable cast denture structures. Indications and contraindications.
7. Orthopedic treatment with clasp prostheses. Parallelometry. Modern parallelometer designs. Milling process.
8. Orthopedic treatment methods with complete removable dentures with a cast base. Indications and contraindications.
9. Errors and complications in orthopedic treatment with dentures.
10. Test.

List of topics of independent work of the student (80 hours)

1. Features of patient examination in an orthopedic dentistry clinic.
2. Patient care and filling out medical documentation.
3. Pain relief in the orthopedic dentistry clinic. Possible complications and methods for their elimination.
4. Classification of dentition defects according to Kennedy, taking into account Appligate's additions.
5. Additional (special) examination methods.
6. Disinfection and sterilization of instruments, impressions. Prevention of the spread of infectious diseases in the dental clinic.
7. Modern types of impression materials.
8. Pathology of hard dental tissues. Etiology, clinical features.
9. Clinical and laboratory stages of making inlays by direct and indirect methods. Features of preparing cavities of classes I-V according to Black.
10. Types of occlusions, their characteristics and signs. Methods of fixing the mesio-distal position of the lower jaw in central occlusion.
11. Basics of working with an articulator.
12. Anatomical and functional changes in the maxillofacial region in complete edentia.
13. Functional harmony of the masticatory system. Symptoms and syndromes in the clinic of orthopedic dentistry.
14. Psychoemotional and stress reactions during a dental appointment. Mechanisms of pain, ways to eliminate it. Modern painkillers.
15. Orthopedic treatment methods with fixed cast combined denture structures. Indications, contraindications.
16. Orthopedic treatment methods with complete removable dentures with a cast base. Indications, contraindications.
17. Errors and complications in orthopedic treatment with cast (removable and fixed) dentures.

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.

- repor tstudent'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;
- participationin 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. Admission to the DC is calculated in terms of GEA scores from 70 to 120 points. The DC itself 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).

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).

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).

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. Applicantswith 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. 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.
4. 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.
5. 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.
6. 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.
7. Korol D. M. Fundamentals of clasp prosthetics / D. M. Korol, D. D. Kindiy, L. S. Korobeynikov, O. D. Odzhubeyska, R. V. Kozak, T. P. Malyuchenko // Poltava. – 2019 – 139p.
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.
9. Fastovets O. O. Fixed dental prosthetics: educational and methodological manual / O. O. Fastovets, R. A. Kotelevsky, S. S. Kobylyak // Dnipro: DMA. – 2017. – 212p.

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. Replacement of partial defects of dentition with bridge-like prostheses. Indications and contraindications. Yanishen I.V., Pogorila A.V., Pereshivaylova I.O., Shepenko A.G. – 2017.
   http://repo.knmu.edu.ua/handle/123456789/22228
3. 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

4. Aesthetic crowns: plastic, composite, metal-ceramic, metal-free. Indications and contraindications. Yanishen I.V., Pereshyvailova I.O., Pohorila A.V., Yaryna I.M. – 2018. http://repo.knmu.edu.ua/handle/123456789/22274

Lectures:

1. Orthopedic treatment (restoration) of dentition defects (partial adentia) by dental fixed bridges. Tomilin, VG-2020. http://repo.knmu.edu.ua/handle/123456789/12149
2. Adaptation to removable prosthesis in orthopedic treatment of dentition partial defects. Mistakes and complications in orthopedic treatment by removable dentures. Tomilin, VG -2020. http://repo.knmu.edu.ua/handle/123456789/12144

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