

**SYLLABUS OF THE EDUCATIONAL COMPONENT****DISINFECTION AND STERILIZATION PRACTICES IN DENTAL HEALTHCARE FACILITIES**

(title of the educational component)

Specialty: 221 «Dentistry»  
Educational and professional program: Dentistry  
Component code in the educational program: \_EC 49  
Higher education level: \_ the second (master's degree)  
Form of education: \_ full-time \_\_\_\_\_  
Year of study: \_\_4  
Semester(s): \_\_VIII \_\_\_\_\_  
Type of educational component: \_ elective \_\_\_\_\_  
Academic year: **2027-2028**

Volume: **\_3,0\_ credits ECTS (90 hours)**  
Training sessions: practical, consultations  
Final control: credit  
Prerequisites: \_ **MC 4** Medical Biology, **MC 9** Philosophy, **MC 10** Life safety. Fundamentals of bioethics and biosafety. Occupational safety in the industry **MC 15** Microbiology, Virology and Immunology **MC 32** Epidemiology **EC 48** Basics of infection control in dentistry

Department/Unit: \_Epidemiology Department 12 Trinkler Street, 3rd Floor of the Red Building  
Head of the educational component: \_\_Viktoriiia Makarova  
[vi.makarova@kntmu.edu.ua](mailto:vi.makarova@kntmu.edu.ua)

(Full name and email of the teacher responsible for the content of the educational component)

Page of the educational component in the Distance Learning System of KhNMU (Moodle):  
<https://distance.kntmu.edu.ua/course/view.php?id=662>

(link to the page of the educational component in the Distance Learning System of KhNMU)

**DESCRIPTION OF THE EDUCATIONAL COMPONENT***Brief description of the content of the subject*

The Discipline provides systematic Knowledge about Disinfection and Sterilization as essential Components of the Infection Control System aimed at preventing Healthcare-Associated Infections (HAIs).

The Course program focuses on studying modern reprocessing Technologies used in Healthcare Institutions, as well as the specific Features of dental instrument Reprocessing.

In addition, Students acquire Knowledge on ensuring a safe Environment for both medical Personnel and Patients in dental Facilities. This is achieved through the use of modern cleaning Systems, Surface and air Disinfection, proper medical Waste Management, and appropriate selection of Disinfectants.

**PURPOSE OF THE COURSE:** The objective of the Course is to develop Knowledge and practical Skills in the Prevention of Healthcare-Associated Infections (HAIs) through the application of modern Technologies in the organization of Reprocessing of medical Devices as a Component of Infection Control.

**LEARNING OUTCOMES:** *(in a language understandable to applicants)*

Upon completion of the course, students will be able to:

1. work with regulatory and legal documents related to infection control;
2. evaluate the quality of medical device reprocessing at the stages of cleaning, disinfection, and sterilization of instruments used in dental care;
3. assess the necessity and frequency of surface cleaning in dental healthcare facilities;
4. follow the algorithm of actions in case of emergency situations;
5. correctly use personal protective equipment (PPE);
6. understand the rules and best practices of hand hygiene and perform proper hand hygiene procedures.

**CONTENT OF THE EDUCATIONAL COMPONENT****List of lecture topics (\_0\_ hours):**

Lectures are not conducted

**List of topics of practical / laboratory classes / seminars (\_\_20\_ hours):**

1. Scientific foundations of reprocessing reusable medical devices in healthcare institutions.
2. Regulatory framework governing reprocessing in dental healthcare facilities.
3. Disinfectants: modern requirements for disinfectant agents.
4. Cleaning, disinfection, and sterilization of dental instruments.
5. Cleaning and disinfection of surfaces in the dental office.
6. Air ventilation: rules and best practices.
7. Safety rules for medical personnel during reprocessing of reusable medical devices.
8. Personal protective equipment.
9. Hand hygiene of medical personnel.
10. Credit.

**List of topics of independent work of the student (\_70\_ hours)**

1. Scientific foundations of reprocessing reusable medical devices in healthcare institutions.
2. Basic concepts: antisepsis, asepsis, disinfection, contamination, decontamination, infection.
3. Regulatory framework governing reprocessing in dental healthcare facilities.
4. Cleaning, disinfection, and sterilization of medical devices: types, methods, and equipment.
5. Cleaning solutions: preparation and application rules.
6. Disinfectants: modern requirements and antimicrobial activity.
7. Types and methods of sterilization and sterilization equipment.
8. Safety rules for healthcare personnel.
9. Specific features of dental instrument reprocessing.
10. Cleaning and disinfection of surfaces in the dental office.
11. Zoning of the dental office according to infection control requirements.
12. Modern principles of cleaning (clinical cleaning) of dental offices, equipment, and instruments.
13. Air cleaning and disinfection in the dental office.
14. Rules for the use of bactericidal ultraviolet irradiators. Types of UV bactericidal devices.
15. Safety rules for medical personnel during reprocessing of reusable medical devices.
16. Algorithm of actions in emergency situations.
17. Personal protective equipment.
18. Hand hygiene of medical personnel.
19. Peculiarities of antimicrobial drug use in dental practice.
20. Preparation for the final assessment.

**Consultations:** online by prior arrangement with the department lecturer using the corporate email of the lecturer/Department of Epidemiology of KhNMU

**Teaching methods:** practical work, solving situational tasks and cases, narrative explanation, conversation, discussion, presentation, educational videos.

### EVALUATION

**Current Learning Activities (CLA).** Assessment of the success of education seekers is carried out in accordance with the Instructions for assessing the educational activities of higher education seekers at KhNMU ([https://knmu.edu.ua/doc\\_block\\_type/instrukcziyi-navchalnogo-proczesu/](https://knmu.edu.ua/doc_block_type/instrukcziyi-navchalnogo-proczesu/))

Grades for practical classes are given according to the traditional 4-point system: “excellent”, “good”, “satisfactory” or “unsatisfactory” in accordance with the criteria for assessing knowledge and skills. Submission of assignments late for unwarranted reasons entails a reduction in the grade in accordance with the percentage of delay in time from the time of completing the assignment. Assignments are checked within 24 hours. Grades are given in the electronic journal. Unsatisfactory grades are worked out in accordance with the Regulations on the procedure for working out academic classes by students of KNMU ([chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://knmu.edu.ua/wp-content/uploads/2021/05/pol\\_por-vidprac-zaniat.pdf](chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://knmu.edu.ua/wp-content/uploads/2021/05/pol_por-vidprac-zaniat.pdf)).

At the end of the semester, the semester average grade is converted into a multi-point grade (120 – 200 points) in accordance with Table 2 of the Assessment Instructions (see above). The arithmetic average of the PND with the addition of points for completed individual tasks (performed at will) constitutes the total learning activity (TLA).

**Individual tasks (IT)** are evaluated up to 10 points. Individual student tasks (hereinafter referred to as ITS) are not a mandatory element, but if the student wishes, they can be completed and are evaluated in ECTS points (no more than 10), which are added to the sum of points scored for current educational activities. At the meeting of the department, a list of individual tasks (participation with reports in student conferences, specialized Olympiads, preparation of analytical reviews with presentations with plagiarism check) was approved, specifying the number of points for their completion, which can be added as incentives.

**Final control.** Credit

**Grade in subject (GS).**  $GS=CLA+IT$

**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)).

### **POLICIES OF THE EDUCATIONAL COMPONENT**

**Recommendations for working on the course:** take an active part in all forms of work in classes, devote the hours allocated for independent work, to completing the necessary tasks, namely, "Analysis of a scientific publication", "Analysis of the incidence of a certain infectious disease" to preparing for classes, ask questions during classes, attend consultations, submit assignments on time and perform all forms of control. Explanations regarding the completion of tasks assigned to the applicant's independent work are provided by the teacher in the 1st class.

**Attendance at classes.** Attendance at lectures and practical classes is mandatory. The dress code during offline classes is a medical gown. If you are more than 5 minutes late, you may not be allowed to class. Missed classes are made up in accordance with the Regulations on the procedure for completing classes by students of 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))

**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.** allowed for educational activities, subject to teacher permission.

**Policy on persons 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. Miller C. H., Palenik C. J. Infection Control and Management of Hazardous Materials for the Dental Team. 7th ed. St. Louis : Elsevier, 2022. 400 p.
2. Molinari J. A., Harte J. A. Cottone's Practical Infection Control in Dentistry. 4th ed. Philadelphia : Wolters Kluwer, 2021. 352 p.
3. Samaranyake L. Essential Microbiology for Dentistry. 6th ed. Edinburgh : Elsevier, 2023. 448 p.

4. Centers for Disease Control and Prevention. Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care. Atlanta : CDC, 2020. URL: <https://stacks.cdc.gov/view/cdc/40077> (accessed: 11.03.2026).
5. Centers for Disease Control and Prevention. Guidelines for Infection Control in Dental Health-Care Settings. Atlanta : CDC, 2020. URL: <https://www.cdc.gov/dental-infection-control/index.html> (accessed: 11.03.2026).
6. Centers for Disease Control and Prevention. Guideline for Disinfection and Sterilization in Healthcare Facilities. Atlanta : CDC, 2021. URL: <https://www.cdc.gov/infectioncontrol/guidelines/disinfection/index.html> (accessed: 11.03.2026).
7. European Centre for Disease Prevention and Control. Infection Prevention and Control in Healthcare Settings. Stockholm : ECDC, 2021. URL: <https://www.ecdc.europa.eu/en/publications-data>(accessed: 11.03.2026).
8. World Health Organization. Decontamination and Reprocessing of Medical Devices for Health-care Facilities. Geneva : WHO, 2020. URL: <https://www.who.int/publications/i/item/9789241549851> (accessed: 11.03.2026).
9. Zemouri C., de Soet H., Crielaard W., Laheij A. Bioaerosols in healthcare and dental environments: a scoping review. PLoS ONE. 2020. Vol. 15(5). e0233919.
10. Kampf G. Antiseptic Stewardship: Biocide Resistance and Clinical Implications. Cham : Springer, 2023.

Head of Department of Epidemiology

(signature)

Tatyana Chumachenko