

NATIONAL PIROGOV MEMORIAL MEDICAL UNIVERSITY, VINNYTSIA

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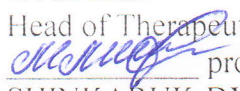
Acting rector of higher education institution  
professor of HEI

 Viktoriia PETRUSHENKO

«31» 08 2023 y.

«AGREE»

Head of Therapeutic Dentistry Department  
professor of HEI Mariia

 SHINKARUK-DYKOVYTSKA

«28» 08 2023 y.

SYLLABUS

OF EDUCATIONAL DISCIPLINE

DISCOLORITES: DIAGNOSIS AND TREATMENT (3<sup>rd</sup> course)

|                     |                                                                                                                                                  |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Specialty           | 221 Dentistry                                                                                                                                    |
| Educational level   | Master                                                                                                                                           |
| Educational program | EPP «Dentistry», 2022                                                                                                                            |
| Academic year       | 2023-2024                                                                                                                                        |
| Department          | Therapeutic Dentistry                                                                                                                            |
| Contact Information | <a href="mailto:terstom@vnmu.edu.ua">terstom@vnmu.edu.ua</a><br>V.Stus Street, 2                                                                 |
| Syllabus developer  | Poberezhna Halyna Mykhailivna, Candidate of Medical Sciences, Assistant<br>Nataliia GADZHULA, Candidate of Medical Sciences, Associate Professor |

## 1. Status and structure of the discipline

|                                                                          |                                                                                    |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Discipline status                                                        | Elective                                                                           |
| Discipline code in EPP / discipline place in EPP                         | BK 3.9 // discipline of professional training                                      |
| Course, semester                                                         | 3 course (V semester)                                                              |
| Scope of the discipline (total number of hours / number of ECTS credits) | 90 hours / 3 credits ECTS                                                          |
| Number of content modules                                                | -                                                                                  |
| The structure of the discipline                                          | Lectures – 10 hours<br>Practical classes - 40 hours<br>Independent work - 40 hours |
| Teaching language                                                        | English                                                                            |
| Form of study                                                            | Full-time (or on-line according to order)                                          |

## 2. Description of the discipline

### Short annotation of the course, relevance

The subject area of the program is the study of modern methods of diagnosis and treatment of discoloration of the hard tissues of the teeth. The program focuses on gaining knowledge about the etiology, pathogenesis, clinical manifestations of discoloration of teeth, methods of treatment, prevention and elimination of complications that may occur during the use of whitening techniques. Discipline develops the skills of examination of a dental patient with odontopathology, discoloration of the hard tissues of the teeth, identifying the leading syndromes and symptoms, justification and formulation of the preliminary diagnosis; ability to analyze the results of the examination of a dental patient and to make a differential diagnosis, to make a final diagnosis of the main diseases of the hard tissues of the tooth and endodontics.

### Prerequisite

- Human anatomy (clinical features of the structure of teeth, periodontium, oral mucosa and oral organs)
- Histology, cytology and embryology (histological features of the structure of teeth, periodontium, oral mucosa and oral organs, embryogenesis of oral organs)
- Bioorganic and biological chemistry (biochemical and biophysical processes in hard and soft tissues of the oral cavity)
- Pathological anatomy (pathomorphological signs of diseases of the oral cavity)
- Physiology (physiological processes occurring in the hard and soft tissues of the oral cavity, the transmission of pain impulse through the hard tissues of the tooth)
- Pathophysiology (pathological processes occurring in the hard and soft tissues of the oral cavity)
- Microbiology, virology and immunology (methods of microbiological research, microflora of the oral cavity in normal and in pathology)
- Clinical pharmacology (knowledge of drugs used in dentistry)
- Internal medicine (methods of examination of the patient, clinical signs of general somatic diseases which can have displays in an oral cavity, features of medical tactics concerning patients with general somatic pathology)
- Propaedeutics of therapeutic dentistry (questions of clinical features of teeth, tissues and organs of the oral cavity, organization and equipment of the dental office, principles, methods and stages of preparation of carious cavities of different localization, composition, properties and methods of dental fillings, endodontic treatment of the cavity canals, materials and methods of their filling).

### **The purpose of the course and its significance for professional activities**

The purpose of teaching the discipline “Discolorites: diagnosis and treatment” is to train a dentist who can diagnose and have methods of eliminating discoloration of hard tissues of the teeth using modern approaches and technologies.

**Competences** and learning outcomes, the formation of which is facilitated by the discipline (relationship with the normative content of training of higher education, formulated in terms of learning outcomes of the educational-professional program of the second (master's) level of knowledge \_22 “Health” \_, specialty \_221 “Dentistry” \_, Educational program \_“Dentistry”)

- integral: IC: Specialized conceptual knowledge, which includes modern scientific achievements in the field of professional activity or field of knowledge and is the basis for original thinking and research, critical understanding of problems in the field and at the border of fields of knowledge.

- General competencies (GC):

GC1. Ability to abstract thinking, analysis and synthesis.

GC 2. Knowledge and understanding of the subject area and understanding of professional activity.

GC 3. Ability to apply knowledge in practice.

GC 6. Skills in the use of information and communication technologies.

GC 7. Ability to search, process and analyze information from various sources.

GC 8. Ability to adapt and act in a new situation.

GC 9. Ability to identify, pose and solve problems.

GC 10. Ability to be critical and self-critical.

GC 11. Ability to work in a team.

- special:

SC 1. Ability to collect medical information about the patient and analyze clinical data.

SC 2. Ability to interpret the results of laboratory and instrumental research.

SC 3. Ability to diagnose: determine the preliminary, clinical, final, concomitant diagnosis, emergencies.

SC 4. Ability to plan and implement measures for the prevention of diseases of organs and tissues of the oral cavity and maxillofacial region.

SC 5. Ability to design the process of providing medical care: to determine the approaches, plan, types and principles of treatment of diseases of organs and tissues of the oral cavity and maxillofacial region.

SC 7. Ability to determine the tactics of management of patients with diseases of organs and tissues of the oral cavity and maxillofacial region with concomitant somatic diseases.

SC 8. Ability to perform medical and dental manipulations.

SC 9. Ability to treat major diseases of organs and tissues of the oral cavity and maxillofacial region.

SC 14. Ability to maintain regulatory medical records.

### **Postrequisites**

“Discolorites: diagnosis and treatment” is a fundamental science that integrates with other dental disciplines, namely therapeutic, orthopedic, pediatric dentistry to develop the ability to apply the acquired knowledge in the further study of all clinical disciplines and in future professional activities.

### **3. Learning outcomes**

“Discolorites: diagnosis and treatment” as a discipline lays the foundation for the further formation of integrative final learning outcomes in accordance with the educational-professional program of the second (master's) level of knowledge \_22 “Health” \_, specialty \_221 “Dentistry” \_, educational program \_“Dentistry”\_, namely:

**PRT1.** Identify the leading clinical symptoms and syndromes (according to list 1 - 3. 6. 8. 10. 13. 15. 17. 22. 23. 24. 27. 28. 33. 34. 40. 44. 48. 51. 52); according to standard methods, using preliminary history of the patient, examination of the patient, knowledge of the person, his organs and systems, to establish a probable nosological or syndromic preliminary clinical diagnosis of dental disease (according to list 2 - section 1 AB).

**PRT2.** Collect information about the general condition of the patient, assess the psychomotor and physical development of the patient, the condition of the maxillofacial area, based on the results of laboratory and instrumental studies to assess information about the diagnosis (list 5 - 6. 7. 11. 14).

**PRT3.** Prescribe and analyze additional (mandatory and optional) examination methods (laboratory, radiological, functional and / or instrumental) according to the list 5 - 6. 7. 11. 14 patients with diseases of organs and tissues of the oral cavity and maxillofacial region for performing differential diagnosis of diseases (according to the list 2, section 1 AB).

**PRT4.** Determine the final clinical diagnosis in accordance with the relevant ethical and legal norms, by making an informed decision and logical analysis of the obtained subjective and objective data of clinical, additional examination, differential diagnosis under the supervision of a doctor in a medical institution (according to list 2.1, and namely 1, 2, 3, 4).

**PRT 8.** Determine the approach, plan, type and principle of treatment of dental disease (according to the list 2, section 1 AB) by making an informed decision according to existing algorithms and standard schemes.

**PRT 9.** To determine the nature of work, rest and the necessary diet in the treatment of dental diseases (according to the list 2, section 1 AB) on the basis of preliminary or final clinical diagnosis by making an informed decision according to existing algorithms and standard schemes.

**PRT 10.** To determine the tactics of managing a dental patient with somatic pathology (according to list 3 - the entire section) by making an informed decision according to existing algorithms and standard schemes.

**PRT 11.** To carry out treatment of the basic stomatologic diseases according to existing algorithms and standard schemes under the control of the doctor-head in the conditions of medical institution (according to the list 2.1, namely 1, 2, 3, 4).

**PRT 19.** Adhere to the requirements of ethics, bioethics and deontology in their professional activities.

**PRT 20.** Organize the necessary level of individual safety (own and persons cared for) in case of typical dangerous situations in the individual field of activity.

**PRT 22.** Perform medical dental manipulations on the basis of preliminary and / or final clinical diagnosis (according to list 2, section 1 A, B, according to list 2.1, namely 1, 2, 3, 4) for different segments of the population and in different conditions (according to list 7, namely 2, 11, 13, 24, 29, 30, 33, 34, 46).

### **Learning outcomes of the discipline:**

At the end of the study discipline “Discolorites: diagnosis and treatment” students should know:

- etiological factors, pathogenesis, classification of tooth discoloration;
- diagnosis, differential diagnosis of discoloration of teeth;
- modern methods of isolation and preparation of the worker for carrying out modern methods of elimination of discolorations;
- mechanical methods of removing discolorations of teeth, technique;
- modern methods of whitening vital teeth (office, home whitening);
- modern methods of whitening devital teeth (walking bleach technique, thermocatalytic method);
- enamel microabrasion technique;
- complication of whitening methods and other methods of eliminating discoloration of teeth, methods of their prevention and treatment;
- principles, means and subjects of individual hygiene, patients with discolorations of teeth.

**Be able to:**

- diagnose changes in the color of teeth of different etiology;
- prescribe the necessary additional methods of examination of a dental patient with discolored teeth and evaluate their results;
- to make a choice and planning of methods of elimination of discolorations of teeth, depending on a clinical situation;
- choose the right drugs for home, office whitening, whitening of depulped teeth, enamel microabrasion;
- correctly choose and be able to apply methods of isolation of the working field for various methods of eliminating discoloration of teeth;
- to carry out various methods of elimination of discolorations of teeth;
- evaluate the results of methods for eliminating discoloration of the hard tissues of the teeth;
- eliminate complications that occur when using various methods to eliminate discoloration of the teeth.

**4. CONTENT AND LOGISTICS OF THE DISCIPLINE**

The study of the elective course “Discolorites: diagnosis and treatment” is given 90 hours – 3.0 ECTS credits.

| Structure of the discipline | Number of hours, of which |                |                   |                 | Year of study   | Type of control |
|-----------------------------|---------------------------|----------------|-------------------|-----------------|-----------------|-----------------|
|                             | Total                     | Classroom work |                   | Individual work |                 |                 |
|                             |                           | Lectures       | Practical classes |                 |                 |                 |
|                             | 90                        | 10             | 40                | 40              |                 |                 |
| Credits ECTS                | 3,0                       |                |                   |                 | 3-rd V semester | Credit          |

The discipline includes 5 lectures, 20 topics of practical classes.

**Themes of lectures**

Theme 1. Etiology, pathogenesis, clinical manifestations, diagnosis of congenital discolorites of the hard tooth tissues.

Theme 2. Etiology, pathogenesis, clinical manifestations, diagnosis of acquired discolorations of the hard tooth tissues.

Theme 3. Isolation methods and basic principles of preparation of the working field during the use of various methods of discoloration removal.

Theme 4. Bleaching of vital teeth: indications, contraindications, methods, means, technique of carrying out.

Theme 5. Bleaching of non-vital (depulped) teeth, enamel microabrasion: indications, contraindications, methods, means, technique of carrying out.

## **Topics of practical classes**

### **Module 1: “Discolorites: diagnosis and treatment”**

Topic 1. Factors that determine tooth color. Aesthetic, optical properties of the teeth.

Topic 2. Etiology, pathogenesis, clinical manifestations, diagnosis of congenital discoloration of the hard tooth tissues.

Topic 3. Etiology, pathogenesis, clinical manifestations, diagnosis of acquired discolorations of the hard tooth tissues.

Topic 4. Factors that cause tooth discoloration. The concept of discoloration, discolorites. Modified classification of discolorites by NI Krikhelli, 2007.

Topic 5. Mechanical methods of removing of discolored hard dental tissues. Methods of professional oral hygiene: SRP-therapy. Technique of carrying out, tools. Advantages and disadvantages.

Topic 6. Mechanical methods of removing of discolored hard dental tissues. Methods of professional oral hygiene: sound, ultrasonic methods. Indications, contraindications, devices, technique of carrying out, advantages and disadvantages.

Topic 7. Mechanical methods of removing of discolored hard tooth tissues. Methods of professional oral hygiene: rotary tools, air-abrasive systems. Indications, contraindications, instruments, devices, technique of carrying out. Advantages and disadvantages.

Topic 8. Individual oral hygiene, products, means. Peculiarities of oral cavity care in patients with discoloration.

Topic 9. Determination of tooth color in the dental office. Systems for determining the color of teeth.

Topic 10. Isolation methods and basic principles of preparation of the working field, when using different methods of discoloration removal.

Topic 11. Dental bleaching. Classification of methods of tooth bleaching. General, local (absolute / relative) indications and contraindications for teeth bleaching methods. Levels of enamel resistance according to NI Krikhelli, 2007.

Topic 12. Medicines used during various methods of teeth bleaching, microabrasion of enamel, composition, properties, mechanism of their action.

Topic 13. Bleaching of vital teeth. Home methods. Indications, contraindications, medicines, technique of carrying out.

Topic 14. Bleaching of vital teeth. Office bleaching. Indications, contraindications, medicines, technique of carrying out. Devices for activating bleaching substances. Safety techniques during office bleaching.

Topic 15. Bleaching of non-vital (depulped) teeth, indications, contraindications, methods, means, technique of carrying out.

Topic 16. Enamel microabrasion, indications and contraindications, methods, means, technique of carrying out.

Topic 17. Mixed whitening. Combined bleaching of hard tooth tissues.

Topic 18. Complications that occur after teeth bleaching and microabrasion of enamel, treatment.

Topic 19. Prevention of complications during bleaching and enamel microabrasion.

Topic 20. Means for individual oral hygiene of patients with discoloration and after bleaching procedures.

### **Themes for self-study**

Theme 1. Examination of a dental patient: subjective and objective main and additional methods.

Theme 2. Non-carious lesions of the teeth: etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, pathomorphology, treatment, prevention of various types of non-carious lesions.

Theme 3. Manifestations of discolorites in systemic diseases. Age-related changes in tooth color.

Theme 4. Discolorites in endodontics, causes of development.

Theme 5. Modern methods and medicines for carrying out remineralization therapy.

Practical classes provide a theoretical justification of the main issues of the topic and the acquisition of the following practical skills:

**A list of practical skills that a student must master from an elective course “Discolorites: diagnosis and treatment”**

1. To appoint necessary additional methods of inspection of the stomatologic patient with discolorites of teeth of various etiology and to estimate their results;
2. Demonstrate mastery of modern working field insulation systems;
3. Demonstrate the ability to make a treatment plan for a patient with dental discoloration;
4. To be able to carry out professional hygiene of an oral cavity;
5. Be able to conduct home methods;
6. To be able to carry out a technique of office bleaching;
7. Demonstrate mastery of the walking bleach technique;
8. Demonstrate mastery of the thermocatalytic method;
9. Demonstrate mastery of the method of microabrasion of enamel.

The student's independent work involves preparation for practical classes, study of topics for independent extracurricular work, preparation of presentations, tables. Control of mastering the topics of independent extracurricular work is carried out in practical classes and final control of the discipline.

Individual work includes the study of scientific literature, preparation of reviews on the topics provided for presentation at meetings of the student scientific circle, the implementation of scientific and practical research, participation in specialized competitions, scientific and practical conferences, competitions of student research papers.

Calendar plans of practical classes, thematic plan of independent extracurricular work, volume and directions of individual work are published on the site of the department.

Route of receiving materials: Department of Therapeutic Dentistry / Student / Full-time study / Dentistry / 3rd year / Educational and methodical materials / or by following the link [https://www.vnmu.edu.ua/deepartment of therapeutic dentistry](https://www.vnmu.edu.ua/deepartment%20of%20therapeutic%20dentistry).

Access to materials is provided from the student's corporate account s000XXX@vnmu.edu.ua

**5. Forms and methods of monitoring academic performance**

|                                                              |                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Current control in practical classes                         | Methods: oral examination; written survey; solving situational problems; structured according to the procedure control of practical skills and abilities in accordance with the list of practical skills for each lesson.                                              |
| Final semester control (credit) at the end of the V semester | According to the regulations on the organization of the educational process in National Pirogov Memorial Medical University, Vinnytsya (link <a href="https://www.vnmu.edu.ua/General%20information">https://www.vnmu.edu.ua/General information</a> / Basic documents |
| Tools for diagnosing learning success                        | Theoretical questions, clinically-oriented situational tasks, practical tasks, demonstration of practical skills                                                                                                                                                       |

**1. Assessment criteria**

Knowledge assessment is carried out in accordance with the Regulations of the Academic process in National Pirogov Memorial Medical University, Vinnytsya (link <https://www.vnmu.edu.ua/en/general-regulations> )

|                                  |                                                                                                                                                                                    |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Current control                  | According to the four-point system of traditional grades: 5 “excellent”, 4 “good”, 3 “satisfactory”, 2 “unsatisfactory”                                                            |
| Intermediate separation controls | According to the four-point system of traditional evaluations                                                                                                                      |
| Control of practical skills      | According to the four-point system of traditional assessments                                                                                                                      |
| Discipline assessments:          | On a 200-point scale (arithmetic mean for the semester is converted into points)<br>Credited: from 122 to 200 points<br>Not credited: less than 122 points (see Evaluation Scale). |

### Rating scale: national and ECTS

| The sum of points for all types of educational activities | ECTS assessment | Score on a national scale                                 |                                                         |
|-----------------------------------------------------------|-----------------|-----------------------------------------------------------|---------------------------------------------------------|
|                                                           |                 | for exam, course project (work), practice                 | for credit                                              |
| 180-200                                                   | A               | excellent                                                 | credited                                                |
| 170-179,99                                                | B               | good                                                      |                                                         |
| 160-169,99                                                | C               |                                                           |                                                         |
| 141-159,99                                                | D               | satisfactory                                              |                                                         |
| 122-140,99                                                | E               | satisfactory                                              |                                                         |
| 0-121,99                                                  | FX              | unsatisfactory with the possibility of reassembly         | not credited with the possibility of re-assembly        |
|                                                           | F               | unsatisfactory with compulsory re-study of the discipline | not credited with compulsory re-study of the discipline |

## 7. Discipline policy

The student has the right to receive quality educational services, access to modern scientific and educational information, qualified counseling during the study of the discipline and the acquisition of practical skills. The policy of the department during the provision of educational services is student-centered, based on the regulations of the Ministry of Education and the Ministry of Health of Ukraine, the university charter and the procedure for providing educational services, regulated by the main provisions of the educational process in National Pirogov Memorial Medical University and the principles of academic integrity.

**Observance of National Pirogov Memorial Medical University regulations, safety measures at practical classes**



**Requirements for preparation for practical classes.** The student must arrive on time for a practical lesson, theoretically prepared according to the topic. Form of clothing: medical gown, changeable shoes, mask, gloves. Adhere to ethical norms and tolerance when discussing the topic of the lesson. Follow the rules of safety and ergonomics when practicing practical skills.

**Use of mobile phones and other electronic devices.** The use of mobile phones during classes is prohibited (except for emergencies to call for help). It is allowed to use the following electronic devices: equipment for multimedia presentation of material, devices for practicing practical skills.

**Academic integrity.** During the study of the discipline the student must be guided by the Code of Academic Integrity of National Pirogov Memorial Medical University (<https://www.vnmu.edu.ua/> general information / Basic documents / Code of Academic Integrity). In case of violation of academic integrity (write-off, use of mobile phone during knowledge assessment, etc.) during the current and final tests, the student receives a grade of "2" and must work it out to his teacher in the prescribed manner within two weeks after unsatisfactory grade.

**Missed classes.** Missed classes are practiced in the manner prescribed by the Regulations on the organization of the educational process in National Pirogov Memorial Medical University (link <https://www.vnmu.edu.ua/> General information / Basic documents) at the time specified in the schedule of work (published on the website of the department <https://www.vnmu.edu.ua/кафедра-терапевтичної-стоматології>) to duty teacher. In order to complete the missed lesson, the student must answer theoretical questions and perform practical tasks on the missed topic. To complete the lecture, the student must make a short summary of the missed topic, navigate the topic and be ready for discussion / answer to questions on the subject of the lecture.

**The procedure for admission to the final control** of the discipline is given in the Regulations on the organization of the educational process in National Pirogov Memorial Medical University (link <https://www.vnmu.edu.ua/> General information / Basic documents). Students who have not missed unfinished practical classes and lectures and received an average traditional grade of at least "3" are admitted to the final control.

**Additional individual points.** Individual points in the discipline (from 6 to 12) the student can get for individual work, the amount of which is published on the website of the department in educational materials of the discipline, the number of points is determined by the results of IRS according to the Regulations on the organization of educational process in National Pirogov Memorial Medical University (link <https://www.vnmu.edu.ua/> General information / Basic documents).

**Conflict resolution.** In the event of misunderstandings and complaints to the teacher due to the quality of educational services, assessment of knowledge and other conflict situations, the student must first report their claims to the teacher. If the conflict issue is not resolved, the student has the right to submit an appeal to the head of the department in accordance with the Regulations on the consideration of appeals of applicants for higher education at National Pirogov Memorial Medical University (<https://www.vnmu.edu.ua/> General information / Basic documents).

**Politics in terms of distance learning.** The procedure for distance learning is regulated by the Regulations on the introduction of elements of distance learning in National Pirogov Memorial Medical University, Vinnytsya (<https://www.vnmu.edu.ua/> General information / Basic documents). The main training platforms for training are Microsoft Team, Google Meets. The procedure for performing practical classes and lectures, exercises and consultations during distance learning is published on the website of the department (<https://www.vnmu.edu.ua/> Department of Therapeutic Dentistry / Student or <https://www.vnmu.edu.ua/> Department of Therapeutic Dentistry / News).

**Feedback** from the teacher is via messengers (Viber, Telegram, WhatsApp) or e-mail (at the teacher's choice) during business hours.

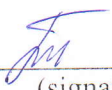
### 1. Training resources

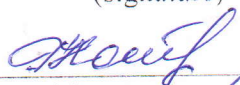
Educational and methodological support of the discipline is published on the website of the department (<https://www.vnmua.edu.ua/kafedra-terapevtychnoi-stomatologii> / Student). Consultations are held twice a week according to the consultation schedule.

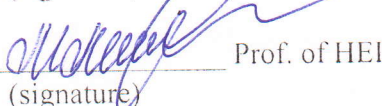
2. The schedule and distribution of groups by teachers is published on the web page of the department (<https://www.vnmua.edu.ua/kafedra-terapevtychnoi-stomatologii>/ Student).

3. Questions to the intermediate and final controls of the discipline are published on the web page of the department (<https://www.vnmua.edu.ua/kafedra-terapevtychnoi-stomatologii>/ Student)

The syllabus on the subject "Discolorites: diagnosis and treatment" (3rd course) was discussed and approved at the meeting of the department of the Therapeutic dentistry (protocol № 1, from "28" August 2023 y.

Responsible for the course  Cand. of med. sciences, Ass. of HEI Halyna POBEREZHNA  
(signature)

Syllabus developer  Ass. Prof. of HEI Nataliia GADZHULA  
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Head of the Department  Prof. of HEI Mariia SHINKARUK-DYKOVYTSKA  
(signature)