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FACULTY OF STOMATOLOGY

STUDY PROGRAM 0911.1 STOMATOLOGY

CHAIR OF STOMATOLOGICAL PROPAEDEUTICS "PAVEL GODOROJA"

APPROVED

at the meeting of the Committee for Quality Assurance and Evaluation of the Curriculum Faculty of Stomatology
Minutes No. 2 of 13.02.2018
Committee president, PhD, DMS,
Associate professor,
Stepco Elena [Signature]

APPROVED

at the Council meeting of the Faculty of Stomatology
Minutes No. 6 of 20.02.2018

Dean of Faculty of Stomatology,
PhD, DHMS, Professor,
Ciobanu Sergiu [Signature]



APPROVED

at the meeting of the chair of Stomatological Propaedeutics "Pavel Godoroja"
Minutes nr. 3 from 20.10.2017
Head of chair, PhD, DHMS,
Associate professor,
Uncuța Diana [Signature]

SYLLABUS

DISCIPLINE: MODERN PREPARATION OF CARIOUS CAVITIES - FREE DESIGN

Integrated studies

Course type: Optional discipline

Chişinău, 2017



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I. PRELIMINARIES

General presentation of the discipline: the place and role of the discipline in the formation of the specific competences of the vocational / specialty training program

A thorough knowledge of the dental structure is essential to understanding dental defects and pathology, as well as rational decisions for prophylaxis and treatment. The teeth are made up of four different tissues: enamel, dentin, dental pulp and cement. Each of these includes structural elements found in other body tissues, but arranged in unique ways.

It has long been considered that caries formation is an irreversible process of demineralisation of enamel crystals, followed by dentin degradation and carious cavity formation. Theories about the true cause of dental degradation have varied, but bacterial etiology has always been considered primary.

In the current view, emphasis is placed on chemical reactions in the demineralization-rem mineralization cycle of the tooth structure. This conception enables the dentist to instruct the patient about how to control this dental condition.

Cavities are perceived to be the result of a prolonged oral imbalance between factors that favor the demineralisation of enamel and dentin and remineralizers. The relationship between the demineralization and remineralization processes can be determined and a carious prophylaxis program can be designed.

Modern dentistry has evolved into a true art and science that proposes to restore dentition to its original form immediately after the eruption, believing that the tooth has an ideal functional form.

Over the years, a variety of geometric concepts of occlusion have emerged, and dental restoration has begun to follow standard lines without taking into account the variability that exists in and between populations as well as the same individual over time. Anthropological research, comparative anatomy studies, and fossils have demonstrated that processes responsible for reducing the volume of teeth have been active since prehistoric times.

In the development of dental caries a stage occurs when prophylactic therapy and remineralization techniques are no longer effective. Plaque removal in the presence of cavities is no longer possible. Thus, it becomes necessary to clean the lesion and restore the initial morphology of the tooth. Sometimes replacement of old restorations is required. In any of these actions, it is necessary to cut the dental tissues and restoration materials.

Enamel is the hardest tissue of the body. Some restorative materials have a similar hardness, and the dentine is as tough as these. Rotary gear at different speeds is most effective in cutting dental tissue and restorative materials. However, the finishing of the cavity edges is not always possible with the rotary tool due to difficult access, and because removal of the dentin dentin has to be made using somewhat tactile sense. Under these conditions, hand tools are indicated.

When a carious lesion has evolved beyond the possibilities of remineralization, it is necessary to replace the damaged dental structure with a restorative material. No obturation material is universal and its correct choice is essential for the longevity of the obturation. Each available material has advantages and disadvantages, and no material is ideal and all have a lifetime of up to 20 years.

When prophylactic measures and remineralization have failed, and cavity lesions are evolving, it is necessary to remove the infected dentine and possibly the affected dentine to avoid cavity formation and further build up of the bacterial plaque. In most cases, a certain amount of enamel and dentin will have to be removed, but it should be noted that they can remineralize and should be preserved as much as possible.



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The principle of minimum extension encourages maximum protection of the natural dental structure. The cavity classification system was designed to establish the most effective treatment, although much of the restorative dentistry is replacing old restorations. In this case, cavity preparation is complicated by the destruction and loss of a part of the dental structure.

Doctor's conduct within the dentist's office is an important step in the development of future specialists, as caries treatment is an indispensable compartment of modern dentistry.

Mission of the curriculum (scope) in vocational training

The modern preparation of carious cavities aims to integrate the knowledge gained by future dentists in the field of discipline in order to provide effective, harmless dental care in the treatment of dental caries.

At the same time, the used treatment methods that are described in the discipline are to develop the skills and clinical thinking of students aimed at acquiring skills and abilities in determining optimal methods of prophylaxis, diagnosis and treatment of dental caries and improving the quality of life of patients.

- **Languages of teaching:** romanian, russian and english.
- **Beneficiaries:** students of the second year, the faculty of Stomatology.

II. ADMINISTRARE A DISCIPLINEI

Code of discipline		S.03.A.036	
Name of discipline		Modern preparation of carious cavities - free design	
Responsible of discipline		Uncuța Diana , head of chair, PhD, DHMS, associate professor Tighineanu Marcela, assistant professor	
Year	II	Semester	III
Total number of hours, including:			30
Lectures	20	Practical courses	-
Seminars	-	Individual work	10
Evaluation form	C	Number of credits	1

III. THE TRAINING OBJECTIVES OF THE DISCIPLINE

- **At the level of knowledge and understanding:**
 - ✓ to know the technique of sealing of the enamel and occlusal fissures;
 - ✓ be familiar with the indication of insertion of the sealant;
 - ✓ to know of suspicious fissures, obvious cavities;
 - ✓ to know the resins used for sealing;
 - ✓ to know the glass ionomers used for sealing;
 - ✓ to know sealing for elderly patients;
 - ✓ understand the evolution of the carious lesion;



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- ✓ to know areas of dental destruction: infected and affected dentin;
- ✓ to know the remineralization potential;
- ✓ to know the evolution of coronary and radicular caries;
- ✓ to be familiar with the general principles of cavity preparation;
- ✓ to know the classification of the cavities: the 3 localization of the carious lesions, the 4 dimensions of the carious lesions;
- ✓ to know the principles of preparation and restoration in class I, dimension 1;
- ✓ to know the principles of preparation and restoration in class I, dimension 2;
- ✓ to know the principles of preparation and restoration in class I, dimension 3;
- ✓ to know the principles of preparation and restoration in class I, dimension 4;
- ✓ to know the principles of preparation and restoration in class II, dimension 1;
- ✓ to know the principles of preparation and restoration in class II, dimension 2;
- ✓ to know the principles of preparation and restoration in class II, dimension 3;
- ✓ to know the principles of preparation and restoration in class II, dimension 4;
- ✓ to know the principles of preparation and restoration in class III, dimension 1;
- ✓ to know the principles of preparation and restoration in class III, dimension 2;
- ✓ to know the principles of preparation and restoration in class III, dimension 3;
- ✓ to know the principles of preparation and restoration in class III, dimension 4;
- **At application level:**
 - ✓ to perform the technique of sealing the enamel and occlusal fissures;
 - ✓ to use the indication for sealant insertion;
 - ✓ to use resins used for sealing;
 - ✓ to use glassionomers used for sealing;
 - ✓ to make sealing for elderly patients;
 - ✓ to distinguish areas of dental destruction: infected and affected dentin;
 - ✓ to distinguish the evolution of coronary and radicular caries;
 - ✓ to use the general principles of cavity preparation;
 - ✓ to use cavity classification: the three carious lesion localizations, the four dimensions of carious lesions;
 - ✓ to use the principles of preparation and restoration in Class I, dimension 1;
 - ✓ to use the principles of preparation and restoration in Class I, dimension 2;
 - ✓ to use the principles of preparation and restoration in Class I, dimension 3;
 - ✓ to use the preparation and restoration principles in Class I, dimension 4;
 - ✓ to use the preparation and restoration principles in Class II, dimension 1;
 - ✓ to use the principles of preparation and restoration in Class II, dimension 2;
 - ✓ to use the preparation and restoration principles in Class II, dimension 3;
 - ✓ to use the preparation and restoration principles in Class II, dimension 4;
 - ✓ to use the preparation and restoration principles in Class III, dimension 1;
 - ✓ to use the preparation and restoration principles in Class III, dimension 2;
 - ✓ to use the preparation and restoration principles in Class III, dimension 3;
 - ✓ to use the preparation and restoration principles in Class III, dimension 4;
- **At the integration level:**
 - ✓ appreciate the level of dental care;
 - ✓ assess the level of satisfaction of the patient according to various criteria;
 - ✓ to sort the necessary instruments according to their purpose;
 - ✓ ensure respect for professional ethics and deontology;
 - ✓ to highlight the patient's problem with the appreciation of the paraclinical examination options necessary to establish the correct diagnosis.



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IV. PRECONDITIONS AND EXIGENCIES

Knowledge of ethical-moral and professional norms in patient relations. Understanding the particularities of evolution of the carious lesion. Understanding the developmental particularities of coronary and root caries. Understanding the general principles of cavity preparation. Knowledge of the sealing technique of the enamel and occlusal fissures. Knowing the sealants indications. Know the sealants you use. Understanding the sealing technique for elderly patients. Knowledge of carious cavity classification. Understanding the general principles of cavity preparation. Understanding the principles of preparation and restoration of carious cavities.

V. THEMES AND ORIENTATIVE DISTRIBUTION OF HOURS

Nr. d/o	THEME	Number of hours			
		Courses	Semi-nars	Prac-tice	Individual
1.	Modern preparation of carious cavities - free design	1.			1.
2.	Seal of the enamel and occlusal fissures. Indications for inserting the sealant. Risk fissures. Suspicious fissures. Obvious cavity.	2.			2.
3.	Resins for sealing. Glassionomers for sealing. Sealing in the case of elderly patients.	3.			3.
4.	Evolution of the carious lesion. Infected and affected, dentin. The remineralization potential. The evolution of coronary and root caries.	4.			4.
5.	General principles of cavity preparation. Cavity classification: the three localization of carious lesions, the four dimensions of carious lesions.	5.			
6.		6.			
7.	Class I, dimension 1. Preparation. Restoration.	7.			5.
8.	Class I, dimension 2. Preparation. Restoration.	8.			
9.	Class I, dimension 3. Preparation. Restoration.	9.	0	0	
10.	Class I,dimension4. Preparation. Restoration.	10.			6.
11.	Class II, dimension 1. Tunneling. Slot cavity. Proximal. Preparation. Restoration.	11.			
12.		12.			7.
13.	Class II,dimension 2. Preparation. Restoration.	13.			
14.	Class II, dimension 3 on anterior teeth, on posterior teeth. Preparation. Restoration.	14.			8.
15.		15.			
16.	Class II, dimension 4 on anterior teeth, on posterior teeth. Preparation. Restoration.	16.			9.
17.		17.			
18.	Class III, dimension 1. Preparation. Restoration.	18.			
19.	Class III, dimension 2. Preparation. Restoration.	19.			
20.	Class III, dimension 3. Preparation. Restoration.	20.			10.
	Class III, dimension 4. Preparation. Restoration.				
Total		20	0	0	10

VI. REFERENT OBJECTIVES AND CONTENT UNITS

Objectives	Content units
Modern design of carious cavities - free design	
✓ to know the technique of sealing of the	Seal of the enamel and occlusal fissures. Tips for



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Objectives	Content units
<p>enamel and occlusal cracks;</p> <ul style="list-style-type: none"> ✓ to know the insertion instructions for the sealant; ✓ to be able to differentiate risk cracks, suspicious cracks, obvious cavity; ✓ to know the resins used for sealing; ✓ to know the glazing used for sealing; ✓ be aware of sealing in elderly patients; ✓ to know the technique of sealing of the enamel and occlusal fissures; ✓ to know the insertion instructions for the sealant; ✓ to be able to differentiate risk cracks, suspicious cracks, obvious cavities; ✓ to know the resins used for sealing; ✓ to know the glassionomers used for sealing; ✓ to be aware of sealing in elderly patients; ✓ to be able to differentiate the evolution of the carious lesion; ✓ to know areas of dental destruction: infected and affected dentin; ✓ to know the remineralization potential; ✓ to know the evolution of coronary and radicular caries; ✓ be familiar with the general principles of cavity preparation; ✓ to know the classification of the cavities: the 3 localization of the carious lesions, the 4 dimensions of the carious lesions; ✓ to know the principles of preparation and restoration in class I, dimension 1; ✓ to know the principles of preparation and restoration in class I, dimension 2; ✓ to know the principles of preparation and restoration in class I, dimension 3; ✓ to know the principles of preparation and restoration in class I, dimension 4; ✓ to know the principles of preparation and restoration in class II, size 1; ✓ to know the principles of preparation and restoration in class II, dimension 2; ✓ to know the principles of preparation and restoration in class II, dimension 3; ✓ to know the principles of preparation and restoration in class II, dimension 4; ✓ to know the principles of preparation and restoration in class III, dimension 1; 	<p>inserting the sealant. Risk fissures. Suspicious fissures. Clear cavity. Resins for sealing. Glazing for sealing. Sealing in the case of elderly patients. Evolution of the carious lesion. Infected and affected dentin. The remineralization potential. The evolution of coronary caries. General principles of cavity preparation. Cavity classification: the three localization of carious lesions, the four dimensions of carious lesions. Class I, size 1. Preparation. Restoration. Class I, size 2. Preparation. Restoration. Class I, size 3. Preparation. Restoration. Class I, size 4. Preparation. Restoration. Class II, dimension 1. Tunneling (internal occlusal nest). Slot cavity (hollow). Proximal. Preparation. Restoration. Class II, dimension 2. Preparation. Restoration. Class II, dimension 3 on front teeth, on lateral teeth. Preparation. Restoration. Class II, dimension 4 on anterior teeth, on posterior teeth. Preparation. Restoration. Class III, dimension 1. Preparation. Restoration. Class III, dimension 2. Preparation. Restoration. Class III, dimension 3. Preparation. Restoration. Class III, dimension 4. Preparation. Restoration.</p>



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Objectives	Content units
<ul style="list-style-type: none">✓ to know the principles of preparation and restoration in class III, dimension 2;✓ to know the principles of preparation and restoration in class III, dimension 3;✓ to know the principles of preparation and restoration in class III, dimension 4;	

VII. PROFESSIONAL SPECIFIC (SC) AND TRANSVERSAL (TC) COMPETENCES AND STUDY OUTCOMES

Professional competencies (specific) (SC)

SC1: Knowledge of sealing notions of enamel and occlusal fissures. Knowledge of sealing technique for elderly patients. Knowing the insertion indications for the sealant.

SC2: Knowledge and simulation of dental caries. Knowledge of cavity preparation and restoration principles.

SC3: Knowing the materials used for sealing.

SC4: Knowledge of risk cracks, suspicious cracks and obvious cavities. Knowledge of carious cavity classification.

SC5: Knowing the evolution of carious lesions. Dentin infected and affected. The remineralization potential. The evolution of coronary and root caries.

SC6: Demonstration and application of acquired knowledge in the clinical and paraclinical assessment of the patient. Selection and argumentation of communication techniques, adathesis and patient preparation for treatment. Promoting the principles of tolerance and compassion towards patients.

Transverse Skills (CT)

TC1: Application of professional standards, professional ethics, and applicable legislation. Promoting logical reasoning, practical applicability, assessment and self-assessment in decision-making.

TC2: Performing activities and exercising the roles specific to team work within the dentistry section. Promoting the spirit of initiative, dialogue, cooperation, positive attitude and respect for others, empathy, altruism and continuous improvement of their own activity;

TC3: Systematically assessing skills, roles and personal expectations, applying self-assessments to learned processes, acquired skills and professionalism needs, effective use of language skills, knowledge in information technologies, research and communication skills, to deliver quality services and adapting to the dynamics of policy requirements in health and for personal and professional development.

Study finalizations

At the end of the course, the student will be able to:

- to know the sealing techniques of occlusal fissures and pits;
- to know the methods of preparation and restoration of carious cavities;
- to know the basic principles, the functional structure and the organization of the medical assistance in the dental office / dental department in the Republic of Moldova;
- to promote healthy lifestyle and health education through speeches, papers, presentations, articles in specialized journals, etc.



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VIII. STUDENTS' SELF TRAINING

Nr.	Expected product	Implementation strategies	Assessment criteria	Implementation terms
1.	Working with informational sources	Reading the lecture or the material in the manual on the subject. Reflecting on the topic in the questions. Knowing and selecting additional information sources on the topic. Reading the text carefully and describe the essential content. Wording of generalizations and conclusions regarding the importance of the theme / subject.	The ability to extract the essentials. Interpretative skills. The ability to analyze and communicate the material accumulated on its own.	During the semester
2.	Solving case problems.	Solving case problems, with argumentation of conclusions at the end of each practical lessons. Verification of the finalities and appreciation of their achievement. Selection of additional information, using electronic addresses and additional bibliography.	The quality of solving problems of situation and clinical case, the ability to formulate and interpret clinical and paraclinical data. Ability to analyze selected information from national and international professional websites.	During the semester
3.	Evaluation of perception (basic knowledge) in clinical and paraclinical examination of patients. Evaluation of methods of asepsis and antisepsis in dental cabinet / section. Each student will complete the patient's medical record, systematize the stages of the clinical examination and collect the anamnesis. Establish indications for paraclinical investigations, arguing their need.			



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IX. METHODOLOGICAL SUGGESTION FOR TEACHING-LEARNING-ASSESSMENT

- **Teaching and learning methods used**

When teaching the optional discipline different teaching methods and methods are used, oriented towards the efficient acquisition and achievement of the objectives of the didactic process. Course classes (lectures) are provided for the discipline. Courses are held in the fourth semester by the course owner. As a teaching aid, the specialized manuals available in the university library, the methodological recommendations of the department's staff, tables, schemes, information sources in electronic format, national and international professional websites, etc. are available.

Learning methods are recommended: learning theoretical material after lecture and manually; observation - identifying the characteristic features of doctor-patient communication; analysis - in the use of clinical and paraclinical examination methods of patients, as well as methods and stages of prevention, asepsis and antisepsis; comparison - analysis by comparison of the methods of collecting the anamnesis, of the paraclinical examination methods according to their advantages and disadvantages; elaboration of the algorithm - selection of the mandatory elements and elaboration of the patient consultation algorithm; modeling - identifying and selecting the elements needed to model situations when consulting patients, formulating conclusions, argumenting, and making the final decision.

- ✓ ***Applied teaching strategies / technologies (specific to the discipline)***

Face-to-face, individual, brainstorming, group discussion, clinical case analysis, teambuilding, clinical exam simulation, mini-research, comparative analysis.

- ✓ ***Methods of assessment (including the method of final mark calculation)***

- ✓ ***Final:*** colloquy.

IX. RECOMENDED LITERATURE:

A. *Mandatory:*

1. Course materials.
2. G.J. Mount, Hume W.R. Conservarea și restaurarea structurii dentare. București, 1999, 272p.