

**Thematic plan of independent work of the student  
in the discipline "Cariology and hard tissue lesions of teeth"  
for students of the educational program of the specialist's degree  
in the specialty/direction of training 31.05.03 Dentistry,  
direction (profile) Dentistry, form of study full-time  
3rd-Years Students (Term V), for the 2023-2024 academic year**

№	The topic of independent work	Hours (academic)
1	<b>The etiology and the pathogenic mechanism of dental caries, treatment<sup>1</sup></b>	6
	<ul style="list-style-type: none"> <li>• <b>Tooth biofilm. Ecology of dental biofilm. Tests characterizing the severity of the etiological factor (GI, microbiological tests, biochemical tests).</b> Hypotheses of non-specific and specific dental biofilm. Ecological bases of caries. Development of a bacterial biofilm. ecological phenomenon. Dental biofilm communities and natural habitats. Environmental determinants. Tests characterizing the severity of the etiological factor.<sup>2</sup></li> <li>• <b>Saliva and oral fluid. Remineralizing properties. Protective function. Methods for the study of oral fluid.</b> The structure of the salivary glands, secretory cycle. The mechanism of saliva formation. Saliva and oral fluid. Composition, properties. Methods for the study of oral fluid. Regulation of salivation. Excretory and endocrine functions of the salivary glands. Participation of saliva in the processes of remineralization. Protective properties of saliva. Xerostomia.<sup>2</sup></li> <li>• <b>Glass ionomer cements.</b> Composition of glass ionomer cements, classification. Properties of glass ionomer cements. Indications for use. Resin-modified glass-ionomer cements (hybrid glass ionomer cements). Compomers.<sup>2</sup></li> <li>• <b>Fundamental concepts of enamel and dentin adhesion.</b> Adhesion to enamel. Adhesion to dentin. The role of the hybrid layer. Enamel conditioning, method of work. Conditioning of dentine, technique of working with primers. Modern adhesive systems, classification. Clinical indications for the use of adhesive systems. The main known adhesive systems. Work technique. Self-etch adhesives.<sup>2</sup></li> <li>• <b>Composites. Classification, composition, properties, polymerization devices.</b> Composition and properties of composite filling materials. Classification of composite filling materials. C factor. Indications for the use of modern composite materials. polymerization devices. Restoration technique with composites. Contouring and polishing of the composite restorations. The main problems during the restoration. Reasons and solutions.<sup>2</sup></li> <li>• <b>Isolation of the operating field.</b> Rubber dam isolation. Advantages, Disadvantages. Materials and instruments, hole size and position, Placement. Cotton roll isolation and cellulose wafers. Other isolation techniques. High-volume evacuators and saliva ejectors. Retraction cord.<sup>2</sup></li> </ul>	
	Total	6

<sup>1</sup> -Subject

<sup>2</sup> - essential content (if necessary)

Considered at the meeting of the department of June 1, 2023, protocol No12

Head of the Department for Therapeutic

Dentistry, DSci, professor



I.V. Firsova

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№	The topic of independent work	Hours (academic)
1	<b>Non-carious lesions of teeth</b> <sup>1</sup>	18
	<ul style="list-style-type: none"> <li>• <b>Developmental alteration in the number</b>, the size, the shape of teeth. Accessory cusp (talon cusp, dens evaginatus, dens invaginatus). Taurodontism. Dilaceration. Supernumerary roots.<sup>2</sup></li> <li>• <b>Resorption</b>. Internal resorption. External resorption. Clinical and radiographic features. Histopathologic features. Treatment and prognosis.<sup>2</sup></li> <li>• <b>Restoration of non-carious lesions</b>. The choice of restoration materials. Classification of non-carious lesions. The use of flowable composites. Restoration of non-carious lesions with glass ionomer cements. Restoration of non-carious lesions with compomers. Use of microhybrid, ormocer and nanofilled composites for the restoration of non-carious lesions.<sup>2</sup></li> <li>• <b>Abfraction</b>. Features of restoration of abfraction defects. The concept of abfraction. Features of the histological structure of the cervical region. Etiology and pathogenesis of abfraction. Treatment of abfraction defects.<sup>2</sup></li> <li>• <b>Attrition</b>. Conservative treatment of pathological attrition. Restoration of pathological attrition. Pathological attrition. Etiopathogenesis, clinical features, diagnosis. Stages of direct restoration of pathological abrasion.<sup>2</sup></li> <li>• <b>Veneers</b>. Indications for the use of veneers. Preparation designs for full veneers. Placing direct-composite veneers.<sup>2</sup></li> <li>• <b>Conservative alterations of tooth contours and contacts</b>. Alterations of shape of natural teeth. Reshaping natural teeth. Closing incisal embrasures. Correction of diastemas.<sup>2</sup></li> <li>• <b>Conservative adhesive bridges</b>. Indications for the use of conservative adhesive bridges. Types of adhesive bridges. Rules for the preparation of teeth for adhesive bridges. Stages of manufacturing adhesive bridges.<sup>2</sup></li> <li>• <b>Indirect restorations with composite materials</b>. Indications and contraindications for indirect restoration with composite materials. Advantages and disadvantages. Laboratory-processed composite inlays and onlays. Clinical technique, preparation, impression taking, try-in and fixation, finishing and polishing. Main problems and ways to solve them.</li> <li>• <b>Sealants, conservative and prophylactic composite restorations and class V1 cavity restorations</b>. Sealants. Indications for the use of sealants. Technique of application of sealants. Conservative and prophylactic restoration with composites. Restoration of class VI cavities.<sup>2</sup></li> </ul>	

	<ul style="list-style-type: none"> <li>• <b>Medicines used to teeth whitening.</b> Classification of tooth discoloration History and current state of the problem of teeth whitening. Classification of teeth whitening techniques and indications for it. Whitening products. Bleaching techniques. Home whitening technique. In-office vital bleaching technique. Single tooth whitening. Whitening of devitalized teeth. Microabrasion and macroabrasion. Safety of bleaching agents. Influence of bleaching on tooth tissues and filling material. Side effects of bleaching agents.<sup>2</sup></li> </ul>	
	Total	18

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