

**Thematic plan of independent work of the student  
in the discipline "Therapeutic Dentistry"  
for students of the 2021 year of admission in the educational program  
31.05.03 Dentistry, in the specialty of training, form of study – resident instruction  
4nd-Years Students (Term VII, VIII), for the 2024-2025 academic year**

№	The topic of independent work	Hours (academic)
<b>Term VII</b>		
1	<b>Endodontics. Etiology, pathogenesis, diagnose and treatment of pulpitis. Etiology, pathogenesis, diagnose and treatment of apical periodontitis<sup>1</sup></b>	72
	<ul style="list-style-type: none"> <li>• <b>Structure and Functions of the Dentin-Pulp Complex.</b> Pulp structure, cells, intercellular substance, fibers. Secondary dentin, reparative, sclerosed, transparent dentin, dentin liquid. Blood supply, innervations. Pulp stones.<sup>2</sup></li> <li>• <b>Local anesthesia for restorative dentistry and endodontics.</b> Mechanism of toothache. Types of anesthesia in therapeutic dentistry/ Local injection anesthesia, medicines. Mistakes and complications of local injection anesthesia.<sup>2</sup></li> <li>• <b>Depophoresis of calcium copper hydroxide.</b> The mechanism of action of copper-calcium hydroxide depophoresis. Indications for depophoresis. Contraindications to depophoresis. Technique.<sup>2</sup></li> <li>• <b>Pulpitis diagnostic techniques.</b> Pulp Tests (Laser Doppler flowmetry (LDF). Features of the innervation of the dental pulp and periapical tissues. Principle of electroodontodiagnostics, Devices for electric pulp testing. Electric pulp testing of an intact tooth, with caries, pulpitis, apical periodontitis, periodontal diseases. Laser Doppler flowmetry and its use in dentistry.<sup>2</sup></li> <li>• <b>Pulp chamber anatomy and coronal access cavity preparations. Procedural Mishaps.</b> Topography of the tooth cavity of the incisors and the canine of the upper jaw. Preparation of the access cavity, errors in the preparation of incisors and canines of the upper jaw. Topography of the tooth cavity of the incisors and the canine of the lower jaw. Preparation of the access cavity, errors in the preparation of the incisors and the canine of the lower jaw. Topography of the tooth cavity of the premolars of the upper jaw. Access cavity preparation, maxillary premolars preparation errors. Topography of the tooth cavity of the premolars of the lower jaw. Preparation of the access cavity, errors in the preparation of mandibular premolars. Topography of the tooth cavity of the molars of the upper jaw. Preparation of the access cavity, errors in the preparation of the molars of the upper jaw. Topography of the tooth cavity of the molars of the lower jaw. Access cavity preparation, mandibular molars preparation errors.<sup>2</sup></li> <li>• <b>Antimicrobial irrigating solutions and vital pulp therapy materials.</b> Medicines used to treat pulpitis. Solutions for root canal irrigation, root canal irrigation, ultrasound irrigation, photoinitiated disinfection, endovak. Chemical preparation of root canals, preparations for unsealing root canals. Medicines used for medical treatment with a conservative method of treating pulpitis, medicines to stop bleeding. Therapeutic pads used for the treatment of pulpitis. Indications for therapeutic liners, classification, requirements for therapeutic liners,</li> </ul>	

	<p>combined therapeutic pastes, calcium hydroxide liners, zinc-eugenol cements.<sup>2</sup></p>	
	<ul style="list-style-type: none"> <li>• <b>Techniques of obturation of the radicular space with gutta-percha.</b> Composition and properties of gutta-percha, classification of techniques of gutta-percha obturation. Single Cone method. Method of lateral compaction of gutta-percha. Method of warm lateral compaction of gutta-percha. Obturation of the radicular space using an automatic plugger. Canal obturation with chemically plasticized cold gutta-percha. Vertical compaction of heated gutta-percha. Obturation with warm fragmented gutta-percha. Lateral-vertical compaction of heated gutta-percha. Thermomechanical sealing of gutta-percha. Obturation with thermoplastic injection of gutta-percha. Canal obturation using the Thermafil system, Gutacore, hybrid techniques method. Retreatment canals obturated with gutta-percha.<sup>2</sup></li> </ul>	
	<ul style="list-style-type: none"> <li>• <b>Radiography in endodontics.</b> Intraoral radiographs (contact periapical radiography, interproximal radiography, occlusal radiography). Orthopantomogram. Cone beam computed tomography.<sup>2</sup></li> </ul>	
	<ul style="list-style-type: none"> <li>• <b>Microbiology in endodontics.</b> Primary intracanal infection. Secondary intracanal infection. intracanal microbial biofilm. The concept of microbial biofilm. Endodontic biofilm. Extraradicular microbial biofilm. Periapical microbial biofilm.<sup>2</sup></li> </ul>	
	<ul style="list-style-type: none"> <li>• <b>The pathogenesis of apical periodontitis.</b> Influence of foci of chronic infection on the body. Function of T-lymphocytes in periapical granuloma. B-lymphocytes, plasma cells and the production of immunoglobulins. IL-1 and macrophages in a periapical granuloma. Bacteria in periapical lesions. Bone resorption in periapical lesions. The effect of chronic infection on the body.<sup>2</sup></li> </ul>	
	<ul style="list-style-type: none"> <li>• <b>Radicular cyst. Etiology, pathogenesis. Clinic. Differential diagnosis and methods of treatment.</b> Etiology, pathogenesis of radicular cyst. Pathological anatomy of a radicular cyst. True and pocket cysts. Clinic of a radicular cyst. Differential diagnosis of radicular cyst. Treatment.<sup>2</sup></li> </ul>	
	<ul style="list-style-type: none"> <li>• <b>Electronic apexlocators in endodontics.</b> The concept of a apical constriction. Resistant root canal shape. Working length determination of the root canal. Methods of working length determination. Types of apex locators. Apex locators with EDI and dentometer functions.<sup>2</sup></li> </ul>	
	<ul style="list-style-type: none"> <li>• <b>Vertical root fractures and cracks in endodontically treated teeth.</b> Definition of vertical root fractures. Causes and frequency of vertical root fractures in endodontically treated teeth. Clinic of vertical root fractures. Diagnostics ("bite test", radiography). Differential diagnosis. Prevention of vertical root fractures.<sup>2</sup></li> </ul>	
	<ul style="list-style-type: none"> <li>• <b>Cone beam computed tomography in endodontics.</b> CT scan in dentistry. CT in Endodontics: Evaluation of Root Canal Morphology. Diagnostics of the pathology of periapical tissues. Diagnosis of root fractures. Root resorption. Diagnostics of perforations.<sup>2</sup></li> </ul>	
	<ul style="list-style-type: none"> <li>• <b>Lasers in endodontics.</b> Classification of lasers. Neodymium laser. Erbium laser. Diode laser. The effect of laser radiation on microorganisms and dentin. Photodynamic therapy or light-activated therapy (LAT).<sup>2</sup></li> </ul>	
	<ul style="list-style-type: none"> <li>• <b>Methods of magnification and illumination in endodontics.</b> Concept of an operating microscope. The use of an operating microscope in diagnostics and endodontic treatment. Preparation of the microscope for</li> </ul>	

	work and its correct installation. Ergonomics of using an operating microscope. Magnification with dental loupes. <sup>2</sup>	
	<ul style="list-style-type: none"> <li>• <b>Periradicular Surgery.</b> Endodontic surgery (apicoectomy). Root apex resection. Operating microscope in endodontic surgery. Root apex closure materials. Ultrasonic tips for endodontic surgery. Root amputation. Hemisection. Corona-radicular separation.<sup>2</sup></li> </ul>	
	<b>Term VIII</b>	
1	<b>Periodontology<sup>1</sup></b>	36
	<ul style="list-style-type: none"> <li>• <b>Patient's record</b></li> </ul>	
	<b>Total</b>	<b>108</b>

<sup>1</sup> -Subject

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

Considered at the meeting of the department of Therapeutic Dentistry "06" June 2024, protocol No12

Head of the Department for Therapeutic Dentistry, DSci, professor

I.V. Firsova