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| **L.P.** | **SEMINARS (THURSDAYS) : 08.00 – 09.30 (06.10.2023 – 26.01.2023) – 30 hrs** |
| **DATE** | **TOPIC** |
|  | **06.10.2022** | Introduction to dental materials and equipment. |
|  | **13.10.2022** | Classification of materials used in dentistry. |
|  | **20.10.2022** | Oral cavity environment, teeth structure and diseases of oral hard tissues. |
|  | **27.10.2022** | Possible restorative materials enabling teeth reconstruction. |
|  | **03.11.2022** | **Surface phenomena**: basics of adherence and connection of materials to the tooth tissues. |
|  | **10.11.2022** | **Properties of dental materials:** restorative materials, biological materials, temporary materials. |
|  | **17.11.2022** | **Properties of dental materials:** prosthetic materials, endodontic materials, additional materials. |
|  | **24.11.2022** | Biocompatibility and its importance in materials used in dentistry. |
|  | **01.12.2022** | Medical applications of nanomaterials, nanofibers, nanocomposites, coatings on implants. The dangers of nanotechnology. |
|  | **08.12.2022** | Study of biomaterials and nanostructures (AFM, SEM, TEM). Wear problem, surface tribology, composite testing |
|  | **15.12.2022** | **Mechanical properties of tissues and restorative materials:** occlusal forces, hardness, elasticity, friction, wear, modulus of elasticity (patterns), stress / strain curve, abrasion resistance, bending, shear |
|  | **22.12.2022** | **Thermal properties and thermal conductivity**. Thermal expansion coefficient. The heat generated during the development of tissues and materials. |
|  | **12.01.2023** | **Electrical properties and electrical conductivity**. Resistance, electrochemical corrosion, tarnishing, tarnishing.**Optical properties.** Color and its measurement, fluorescence, translucency, color loss. |
|  | **19.01.2023** | **Surface phenomena:** forces involved in denture retention, adhesion and bond strength testing, water absorption, solubility, disintegration. |
|  | **26.01.2023** | Amalgam fillings - types, properties, procedure. Limiting exposure to Hg. |
| **EXERCISES (THURSDAYS): 09.45 – 11.15 (06.10.2023 – 26.01.2023) – 30 hrs x 2 gr.=60 h.** |
|  | **DATE** | **Gr a** | **Gr b** | **TOPIC** |
|  | **06.10.2022** | **1** | **2** | Caries diagnostic methods - from traditional to modern. Rules of cavity preparation according to Black. Contemporary methods of cavity preparation depending on materials used and class of the cavity. Pulp vitality diagnostic devices. |
|  | **13.10.2022** | **2** | **1** | Accessory equipment used during the restoration process : dental matrix bands and holders (Ivory, Nystrom, Tofflemire, Mifam).**Practical class: handling and use practice** |
|  | **20.10.2022** | **3** | **4** | Dental drills, diagnostics set. Equipment used in dentistry: periodontics, dental surgery, prosthetics, orthodontics.  |
|  | **27.10.2022** | **4** | **3** | Garrison system, Palodent, Supermat; Contact Matrix, Contact Wedge, tapes and interdental wedges. **Practical class: handling and use practice** |
|  | **03.11.2022** | **5** | **6** | Drills and equipment used during filling, correction and polishing. Additional dental tools.  |
|  | **10.11.2022** | **6** | **5** | Water-based cement: GIC/ glass ionomer cement (preparation) , resin-modified GIC/RMGIC (capsules), carboxylic cement, zinc – phosphate cement, dentin liners.  |
|  | **17.11.2022** | **7** | **8** | Materials used for biological treatment: indirect and direct pulp capping, pulp amputation, apexogenesis, apexification, calcium hydroxide compounds, Biodentine, MTA. |
|  | **24.11.2022** | **8** | **7** | Adhesion to the dentine and enamel – mechanism of action, bonding system. Polymerisation phenomena and dental curing light.**Practical class:** fissure sealing (models) |
|  | **01.12.2022** | **9** | **10** | Prophylaxis materials, chemotherapeutics (paste, gels, foams, rinses, lacquer, calcifying preparation), teeth whitening substances. Fiberglass in dentistry.  |
|  | **08.12.2022** | **10** | **9** | Compomers, giomers: composition (ingredients), properties (filling and cementation). **Practical classes:** Filling class 1 cavities ( models) |
|  | **15.12.2022** | **11** | **12** | Temporary materials: for mixing (fletcher) andpre-made (light and chemo-cured), surgical dressings, used in periodontics and endodontics. Oil-based cement (ZOE/ oxide-zinc-eugenol).  |
|  | **22.12.2022** | **12** | **11** | Composites: composition (ingredients), polymerization, correct technique of composite use.**Practical classes:** Filling class 2 cavities (models)  |
|  | **12.01.2023** | **13** | **14** | Endodontic equipment/tools. Root canal treatment materials, rinses, medicines, sealers. Dexadent and devitalization sources. Methods of root canal length measurement.  |
|  | **19.01.2023** | **14** | **13** | Ormocers and composites condensation: bulk, thermo-injectable, bioactive. Materials use in aesthetic dentistry. **Practical classes :** Filling class 2 cavities (models) |
|  | **26.01.2023** | **15** | **15** | **FINAL TEST** |