

**MEDICAL UNIVERSITY – SOFIA**  
**FACULTY OF DENTISTRY**

**CURRICULLUM**

**Discipline name:** Conservative dentistry

**Educational degree:** Master

**Educational mode:** Obligatory

**Course duration:** Seven semesters (IV, V, VI, VII, VIII, IX and X semester)

**Course level:** M level (master degree)

**Assessment forms:** Current assessment, participation in seminars, tests, practical and theoretical exams

**Educational forms and methods:** Lectures, seminars, tests, discussions

**Terminal exam:** Yes

**Lecturers:** Assoc.prof. d-r R.Vassileva, Assoc.prof. d-r Sn.Topalova-Pirinska, Assoc.prof. d-r E. Boteva

**Department:** Conservative dentistry

### **Course annotation:**

Conservative dentistry course gives the opportunity to acquire knowledge and competences in operative dentistry and endodontics which are necessary for organizing and carrying out a successful dental help.

### **Course description:**

The educational course consists of 600 academic hours, including:

#### ***Propaedeutics of Conservative dentistry:***

Lectures – 60 hours

Exercises – 135 hours including:

    Demonstrations – 30 hours

    Seminars – 8 hours

#### ***Clinics of Conservative dentistry:***

Lectures – 60 hours

Exercises – 315 hours including:

    Demonstrations – 30 hours

    Seminars – 14 hours

### **Knowledge assessment** – a complex one, including:

1. Evaluation of students' activity during the training course
2. Test examination marks at the end of each term
3. Practical exam marks
4. Theoretical exam marks (test, written and oral questions)

### **Aspects of knowledge assessment:**

1. Specific knowledge and activity during discussions and seminars in Propaedeutics and Clinics
2. Certain quantity and quality of finished diagnostic and medical procedures
3. Results from practical examination
4. Results from theoretical examination (test, written and oral questions)

### **Teaching subsidiary instruments:**

Slides, multimedia presentations, diagrams, models, tests, work on a clinical problem

### **Curriculum objective:**

*Operative dentistry* gives theoretical knowledge and practical skills about diagnostics, treatment and prophylaxis of carious and noncarious lesions of hard dental tissues of elderly population.

*Endodontics* gives theoretical knowledge and practical skills about diagnostics, treatment and prophylaxis of dental pulp and periodontal diseases.

The acquired competencies enable the organization of dental help in accordance with European standards for medical service.

### **Curriculum goals:**

1. To acquire knowledge about dental materials, medicines, appliances, instruments in the field of Operative dentistry and Endodontics.
2. To acquire basic knowledge about biological basis of diseases of hard dental tissues and endodontium.
3. To have knowledge about current methods for diagnostics of diseases of hard dental tissues and endodontium and their complications.
4. To have theoretical and practical knowledge about treatment methods of diseases of hard dental tissues and endodontium and their complications.
5. To be acquainted with the means and methods for keeping staff and patients out of infectious diseases.
6. To have necessary competences of looking for and accomplishing consultations.

### **Preliminary requirements:**

To start Conservative dentistry course students must have basic knowledge in anatomy, physiology, genetics, pathological anatomy and physiology, physics, biophysics, biochemistry, pathobiochemistry, microbiology, pharmacology.

### **Expected results:**

At the end of their course of education students must be able to:

- ✓ Diagnose diseases of hard dental tissues and endodontium and their complications
- ✓ Use diagnostic and treatment appliances
- ✓ Work out treatment plan for patients with diseases of hard dental tissues and endodontium
- ✓ Analyze and synthesize the data for patient's condition (status)
- ✓ Realize the treatment plan and accomplish different treatment procedures, like anesthesia, isolation of working field, preparation and restoration of cavities with different restorative materials, preparation and filling of root canals, restoration of teeth with considerable crown destructions, differentiation between diseases with dental and another origin

### **Recommended literature:**

1. Lectures in Propaedeutics of Conservative dentistry
2. Textbook in Propaedeutics of Conservative dentistry
3. Practical manual of Propaedeutics of Conservative dentistry
4. Lectures in Clinics of Conservative dentistry
5. Textbook in Clinics of Conservative dentistry
6. Practical manual of Clinics of Conservative dentistry

# CONSERVATIVE DENTISTRY PRECLINICAL SYNOPSIS

## ORAL EXAM

1. Anatomy of the cavity form - basic elements.
2. Requirements to the cavity form.
3. General principles of cavity preparation (First principle of caries treatment) – basic factors affecting outline cavity form.
4. General principles of cavity preparation – additional factors affecting outline cavity form.
5. Factors affecting outline cavity form - practical significance for cavity borders determination on each tooth surface.
6. General principles (guidelines) of cavity preparation – creating resistance forms.
7. General principles (guidelines) of cavity preparation – creating retention forms.
8. General principles of cavity preparation - practical significance for initial outline form and carious dentin removal.
9. General principles of cavity preparation - practical significance for enamel margins finishing (beveling).
10. Class I cavity preparation for amalgam restorations – occlusal cavities first type.
11. Class I cavity preparation for amalgam restorations – occlusal cavities second type.
12. Class I cavity preparation for amalgam restorations – foramen coecum (buccal or lingual pit) cavities.
13. Class I cavity preparation for amalgam restorations – occlusobuccal cavities first type.
14. Class I cavity preparation for amalgam restorations – occlusobuccal cavities second type.
15. Class II cavity preparation for amalgam restorations – general characteristics and basic parts of the common form.
16. Class II cavity preparation for amalgam restorations – characteristics and elements of the proximal outline form.
17. Class II cavity preparation for amalgam restorations – characteristics and elements of the occlusal outline form.
18. Class II cavity preparation for amalgam restorations – box-only form.
19. Class II cavity preparation for amalgam restorations – conventional form.
20. Class II cavity preparation for amalgam restorations – conservative form (“slot” preparation).
21. Class II cavity preparation for amalgam restorations – approximo-occluso-buccal (approximo-occluso-lingual) form.
22. Class V cavity preparation for amalgam restorations.
23. Microretentions – characteristics, preparation technique, retention significance and SEM characteristics.
24. Adhesive systems – classification, chemical compounds (composition) and characteristics.
25. Class III cavity preparation for composite resin (tooth-colored) restorations – proximal form.
26. Class III cavity preparation for composite resin (tooth-colored) restorations – linguoproximal form.
27. Class III cavity preparation for composite resin (tooth-colored) restorations – buccoproximal form.
28. Class III cavity preparation for composite resin (tooth-colored) restorations – linguobuccoproximal form.
29. Class IV cavity preparation for composite resin (tooth-colored) restorations – incisoproximal form.
30. Class IV cavity preparation for composite resin (tooth-colored) restorations – incisoproximolingual form.
31. Class IV cavity preparation for composite resin (tooth-colored) restorations – incisoproximobuccolingual form.

32. Class IV cavity preparation for crown fractures of the incisal ridge. Providing retention in clinical conditions.
33. Class I and II cavity preparation for direct composite resin (tooth-colored) restorations – basic rules.
34. Class V preparation for amalgam and composite resin restorations.
35. Parapulpal pins – indications, types of pins and biomechanical problems associated with their insertion.
36. Parapulpal pins – anatomical consideration about application site.
37. Parapulpal pins – instruments and insertion technique.
38. Medicatio cavi dentis (Second principle of cavity treatment) – basic concepts, reasons for medication and goals.
39. Medicatio cavi dentis (Second principle of caries treatment) – medicaments, pharmacodynamics, application errors.
40. Temporary fillings – function, materials, requirements, critical analysis, indications for application.
41. Obturatio cavi dentis (third general principle of caries treatment) – basic concepts. Restorative materials – biological, mechanical and esthetic requirements.
42. Obturatio cavi dentis (third principle of caries treatment) – indications, contraindications and relative contraindications for application of restorative materials. Factors affecting the choice of appropriate material.
43. Obturatio cavi dentis (third principle of caries treatment) – dentine liners. Biomechanical requirements to the materials and critical analysis.
44. Obturatio cavi dentis (third general principle of caries treatment) – insulation bases. Application techniques and basic configurations depending on different kind of base materials.
45. Restoration contours – basic characteristics depending on the tooth crown form. Errors, complications and repair options.
46. Interproximal contacts - basic characteristics depending on the tooth crown form. Errors, complication as a result of uncorrect proximal contacts and contours restoration. Repair options.
47. Amalgam restorations – instruments and application technique.
48. Esthetic restorative materials - instruments and application technique.
49. Cast metal restorations – indications, contraindications and relative contraindications for their application. Specific rules for cavity preparation.
50. Cast metal inlay restorations. Direct (clinical, chairside) method – indications, instruments and technique.
51. Cast metal inlay restorations. Indirect (laboratory) method – indications, instruments and technique.
52. Cast metal restorations – adjustment, cementation and removal of the inlay.
53. Endodontium – definition. Endodontic internal anatomy.
54. General principles of endodontic treatment. Principles of endodontic access.
55. Endodontic access to pulp chamber - cavity preparation and location of orifices.
56. Removal of different kinds endodontic space content (vital or necrotic pulp tissues) – instruments, techniques, errors and complications.
57. Working length determination of the root canal.
58. Chemo-mechanical preparation of the root canals (cleaning and shaping) – endodontic instruments and their ISO standardization.
59. Chemo-mechanical preparation of the root canals – basic guidelines and hand instrument techniques.
60. Chemo-mechanical preparation of the root canals – standard and step-back techniques.
61. Irrigation protocol – intracanal irrigants, guidelines and techniques for application.
62. Obturation of the root canals – requirements to the root canal sealers, instruments and techniques.

63. Lateral condensation – basic concepts, indications, instruments, advantages and disadvantages.
64. Methods and criteria for root canal filling assessment.
65. Root canal sealers – pharmacologic characteristics of their basic ingredients (compounds).
66. Aseptics and antiseptics (sterilization). Protection against acute infectious diseases.
67. Preparation of the operation field and patient for caries treatment and endodontic treatment.
68. Methods for pain control during caries and endodontic treatment – anesthetics and devices for their application.
69. Etiology and pathogenesis of the tooth caries.
70. Examination methods for the hard tooth tissues in cariology.
71. Inflammatory disorders/diseases of the dental pulp – etiology, pathogenesis and classification.
72. Inflammatory diseases of the dental pulp – main clinical signs and symptoms, paramedical investigations.
73. Examination methods and treatment approaches in endodontics – general characteristics.
74. Periodontium – anatomy, histology and physiology. Etiology and pathogenesis of the periodontal diseases.
75. Examination methods in periodontology. Classification of the periodontal diseases.
76. Inflammatory periodontal diseases - main clinical signs and symptoms, paramedical investigations.

## **WRITTEN EXAMINATION**

1. Dental caries – definition and classification.
2. Dental caries – treatment aspects, indications, contraindications.
3. General principles for the treatment of dental caries by obturation.
4. Cavity configurations. Factors affecting cavity preparation.
5. Initial cavity preparation stage – instruments, general considerations depending of filling material.
6. Gingival wall - requirements for Class II - MO, DO and MOD cavities.
7. Dovetail retention form – indications, internal configuration.
8. Dentin retentions – different types, indications, position, techniques of preparation depending of cavity configuration and filling material.
9. Occlusal outline retention form in molars - indications, internal configuration.
10. Filling materials for treatment of dental caries.
11. Dental amalgam – classification, composition, mechanism of hardening.
12. Dental amalgam – clinical characteristic.
13. General configurations and characteristics of the Class I cavity preparation for amalgam restorations.
14. General configurations of the Class II cavity preparation for amalgam restorations.
15. Composition and types of composite materials.
16. Clinical characteristic of composite materials.
17. General configurations and characteristics of the cavities of Class III and V for composite filling materials.
18. General configurations and characteristics of the cavities of Class IV for composite filling materials.
19. Glassionomer cements – types and mechanism of setting.
20. Glassionomer cements – clinical characteristics and indications.
21. Root canal anatomy of upper molars.
22. Root canal anatomy of lower molars.

23. Characteristics of apical zone – physiological constriction, physiological foramen, apical foramen, anatomical apex, radiographic apex.
24. Endodontic barbed broaches - characteristics and techniques of use.
25. Basic hand endodontic instruments.
26. Hand endodontic instruments - standardization.
27. Root canal preparation – Step-back technique.
28. Lateral condensation – technique of application.
29. Pharmacodynamic effect of Eugenol and ZnO in composition of root canal pastes.
30. Dental caries – radiographic characteristics.
31. Histology of pulp tissue.
32. Physiology of pulp tissue.
33. Pulpal diseases – classification. Basic principals and critical analysis.
34. Pulpitis acuta serosa – clinical characteristic.
35. Pulpitis acuta purulenta – clinical characteristic.
36. Pulpitis chronica – clinical characteristic.
37. Periodontal diseases – basic principals of classification.
38. Chronic periodontitis – radiographic characteristics.

# **CONSERVATIVE DENTISTRY CLINICAL SYNOPSIS**

## **ORAL EXAM**

1. Dental caries – classification. Basic principles for composition and critical analysis of the existing classifications.
2. Pathomorphologic characteristics of the acute and chronic dental caries.
3. Clinical and paraclinical characteristics of the different types of dental caries.
4. Differential diagnosis of the dental caries.
5. Early diagnosis of the dental caries – critical analysis of the basic methods in use.
6. Methods and resources for the treatment of incipient carious defects (spots or maculas).
7. Physiotherapeutic resources for the treatment of dental caries.
8. Medico-biological bases of the treatment of dentin wound.
9. Secondary caries – definition, etiology, pathogenesis.
10. Secondary caries – clinical characteristics and differential diagnosis.
11. Prevention of the secondary caries.
12. Dental hyperesthesia (hypersensitivity) – types and reasons for beginning.
13. Clinical characteristics, differential diagnosis and treatment of the dental hyperesthesia (hypersensitivity).
14. Basic indicators for estimation of the clinical condition of teeth with significant (substantial) destruction of the clinical crown.
15. Analysis of the existing hard dental structures in connection with their preparation for restoration of considerable destructions of the clinical dental crown.
16. Principle requirements for dental preparation in the presence of significant destructions, affecting different parts of the dental crown.
17. Indications and contraindications for indirect resin obturations (resin inlays).
18. Characteristics of the cavity for indirect resin obturations (resin inlays).
19. Methods for making indirect resin obturations (resin inlays).
20. Critical analysis of the direct and indirect resin obturations.
21. Atrophy and dystrophy of the dental pulp – basic clinical and paraclinical characteristics. Differential diagnosis. Prognosis and treatment.
22. Calcium metaplasia of the dental pulp. Clinical and paraclinical characteristics. Differential diagnosis. Treatment.
23. Blood vessel diseases of the dental pulp. Clinical and paraclinical characteristics. Differential diagnosis. Reversible and irreversible alterations (changes). Treatment.
24. Acute pulpitis. Clinical and paraclinical characteristics. Reversibility and irreversibility of the processes. Differential diagnosis. Treatment.
25. Chronic pulpitis. Clinical and paraclinical characteristics. Differential diagnosis. Treatment.
26. Medico-biological bases of the conservative (biological, pulp capping) methods for treatment of the dental pulp.
27. Indirect pulp capping. Technique, medicaments, prognosis.
28. Direct pulp capping. Technique, medicaments, prognosis.
29. Essence of the biological treatment methods of the dental pulp (pulp capping methods). Indications and contraindications. Critical analysis of the pulp capping methods.
30. Vital amputation – indications, contraindications, medicaments, prognosis.
31. Vital extirpation – essence, anatomic preconditions. Indications and contraindications. Prognosis.
32. Vital extirpation – technique. Possibilities for effective anaesthesia. Choosing an appropriate root canal sealer.

33. Acute apical periodontitis – clinical and paraclinical characteristics. Differential diagnosis.
34. Acute apical periodontitis – treatment.
35. Chronic apical periodontitis - clinical and paraclinical characteristics. Differential diagnosis.
36. Chronic apical periodontitis – treatment.
37. Exacerbated chronic apical periodontitis – clinical and paraclinical characteristics. Differential diagnosis. Treatment specifics.
38. Essence and type of the healing processes after root canal treatment of irreversible pulpitis and apical periodontitis.
39. Emergency endodontics – definition, essence, characteristics.
40. Basic aims of emergency endodontics and ways to complete them.
41. Most frequent nosological units that are objects of emergency endodontics. Treatment schemes.
42. Basic components of post and core restoration of teeth after root canal treatment. Purpose, indications and contraindications for application of root canal posts.
43. Types of root canal posts. Requirements towards posts. Biomechanical problems connected with the application of the different types of root canal posts.
44. Application technique of the basic types of root canal posts.
45. Basic reasons for difficult or incorrect diagnostics in endodontics.
46. Basic symptoms, diagnostics and prognosis of cracks and fractures of the hard dental tissues, connected with endodontic practice.
47. Non-odontogenic units (conditions) that might be confused for endodontic diseases – anatomical structures and pathological changes.
48. Problems, connected with retreatment of endodontically treated teeth.
49. Reasons and methods for retreatment of endodontically treated teeth.
50. Basic techniques of endodontic surgery. Incisions for drainage.
51. Apical surgery – aim, indications, contraindications. Basic manipulations. Retrograde cavity preparation and obturation. Postoperative medical care.
52. Endodontic surgery – root resection, hemisection, bicuspidation.
53. Physiotherapeutic methods for treatment of dental pulp – conservative treatment and extirpation methods.
54. Physiotherapeutic methods for treatment of infected root canals.
55. Physiotherapeutic methods for treatment of acute apical periodontitis aiming pain reduction and healing process stimulation.
56. Physiotherapeutic treatment for chronic apical periodontitis aiming healing process acceleration after root canal treatment.
57. Endodontic microbiology – characteristics of endodontic microorganisms. Control of the microorganisms during endodontic diseases.
58. Teeth bleaching – basic techniques and materials.

## **WRITTEN EXAMINATION**

1. Classification of carious diseases of hard tooth tissues.
2. Clinical and paraclinical differentiation of chronic from acute carious process.
3. Caries profunda - differential diagnosis.
4. Opportunities and critical analysis of radiographic diagnosis of initial carious lesions.
5. Cavity preparation – errors, leading to secondary caries /indication without comment/.
6. Obturation with dental amalgam – errors, leading to secondary caries /indication without comment/.
7. Dental hyperesthesia - differential diagnosis.

8. Cast metal restorations for Class II cavity - indications, contraindications.
9. Composite inlay - indications, contraindications.
10. Hyperaemia pulpaе - differential diagnosis.
11. Pulpitis acuta purulenta totalis - differential diagnosis.
12. Pulpitis chronica ulcerosa - differential diagnosis.
13. Direct and indirect pulp capping – indications, contraindications.
14. Root canal treatment on teeth with vital pulps - indications, contraindications.
15. Periodontitis acuta purulenta – differential diagnosis.
16. Periodontitis chronica granulomatosa diffusa – differential diagnosis.
17. Periapical abscess – techniques of draining the pus.
18. Radicular posts – biomechanical rules for the applications.
19. Apical endodontic surgery - indications, contraindications.
20. Root resection, hemisection, bicuspidation - indications, contraindications.
21. Endodontic retreatment – root canal filling removal.
22. Intraaligamental anesthesia.
23. Intrapulpal and intraossal anesthesia.
24. Critical analysis of materials used for restorations of teeth after endodontic treatment.
25. Endodontic microbiology – species characteristic of the endodontic microflora. Bacteroides.
26. Endodontic microbiology – conditions and ways of penetration of microorganisms in dental pulp and periodontal tissue.
27. Endodontic microbiology – rules for successful microbiological examination in endodontics.
28. Teeth bleaching – complications.
29. Teeth bleaching – causes of discolorations.

## **SYNOPSIS OF CONSERVATIVE DENTISTRY – STATE FINAL EXAMINATION (CERTIFICATION)**

1. Etiology and pathogenesis of tooth caries.
2. Classification and pathomorphology of tooth caries.
3. Clinical and differential diagnosis of tooth caries.
4. Early diagnosis of tooth caries - clinical features and non operative treatment.
5. Dentine wound – types, main characteristics and treatment.
6. Non-aesthetic restorative materials – types, chemical composition, physical properties, indications and contraindications.
7. Aesthetic restorative materials - types, chemical composition, physical properties, indications and contraindications.
8. Asepsis and antiseptics in operative dentistry.
9. Factors, determining the borders of cavity preparations.
10. Class I cavity preparations for non aesthetic plastic restorative materials. Main configurations and characteristics.
11. Class V cavity preparations for non aesthetic plastic restorative materials. Main configurations and characteristics.
12. Class II cavity preparations for non aesthetic plastic restorative materials.
13. Cavity preparation for indirect restorations.
14. Class III cavity preparations for aesthetic plastic restorative materials. Main configurations.

15. Class IV cavity preparations for aesthetic plastic restorative materials. Main configurations.
16. Class V cavity preparations for aesthetic plastic restorative materials. Main configurations.
17. Class I and II cavity preparations for aesthetic plastic restorative materials.
18. Clinical procedures preparing the patient for definitive restoration.
19. Biomechanical problems of different cavity preparations.
20. Restorative technique for dental amalgam.
21. Restorative technique for cast metal restorations.
22. Restorative technique for aesthetic restorations.
23. Anaesthesia in cariology and endodontology.
24. Pins.
25. Secondary caries lesions.
26. Tooth hyperaesthesia.
27. Non caries lesions – erosion, fluorosis,
28. Clinical presentation and diagnosis of acute pulpitis.
29. Clinical presentation and diagnosis of chronic pulpitis.
30. Reversible and irreversible pulpal diseases. Clinical presentation and prognosis.
31. Clinical presentation and diagnosis of acute periodontitis.
32. Clinical presentation and diagnosis of chronic and reactivated periodontitis.
33. Difficult differentiation diagnoses in endodontics.
34. Endodontic cavity preparation, pulpal removal, enlargement of orifices.
35. Cleaning and shaping of root canal system.
36. Endodontic mishaps: detection, correction and prevention.
37. Obturation of root canal system.
38. Post systems. Types, biomedical problems. Indications and contraindications. Placement technique.
39. Vital pulp therapy.
40. Vital methods for pup treatment.
41. Microbiology of endodontics – bacteria, cultured from root canals. Bacteroides sp. Collection of microbial sample.
42. Microbiology of endodontics – ways of bacterial invasion in pulp and periodontal tissues. Main characteristics of microorganisms.
43. Tooth bleaching.
44. Criteria and methods for evaluation of endodontic treatment.
45. Retreatment in endodontics.
46. Restoration of the endodontically treted tooth.
47. Emergency endodontics.
48. Endodontic surgery.

## **DENTAL PHYSIOTHERAPY**

1. Electric pulp testing procedures in cariology and endodontics.
2. Physiotherapy in extirpation methods for pulpal desease treatment.
3. Physical methods for treatment of gangrene and periapical lesions.
4. Physical methods for treatment of infected root canals.

# EDUCATIONAL PROGRAM

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Discipline: **Propaedeutics of Conservative Dentistry**

Educational level:

**Faculty of Dentistry-Sofia**  
**Department of Conservative dentistry**

## LECTURE COURSE

### II course, IV semester

1. Object, aim and tasks of conservative dental medicine phantom course. Dental caries - process main point and classification. Treatment methods. Basic principles of dental caries treatment by means of restoration. First basic principle. Types of cavities. Basic cavity elements. Requirements for cavity design.
2. Cavity preparations principles. Practical application of cavity preparation basic principles – stages of cavity preparation.
3. Dental amalgam – types of alloys, composition, chemical reactions.
4. Cavity preparation for dental amalgam – part I. I class cavity preparation – indications, basic design. Characterization of basic cavity configurations. Preparation techniques.
5. Cavity preparation for dental amalgam – part II. II class cavity preparation – indications, basic design. Characterization of basic cavity configurations. Instruments and preparation techniques.
6. Cavity preparation for dental amalgam – part III. Class V cavity preparation – indication, basic design. Characterization of basic cavity configurations. Instruments and preparation techniques.

### III course, 5 semester

1. Aesthetic restorative materials – groups, composition, physico-chemical properties.
2. Cavity preparation for aesthetic restorative materials – III and IV class cavities - indications, basic design, instruments and preparation techniques.
3. Cavity preparation for aesthetic restorative materials – I, II and V class cavities - indications, basic design, instruments and preparation techniques.
4. Pins – indications, groups, biomechanical and anatomical application aspects. Placement technique.
5. Second basic principle of caries treatment by means of restoration (operative caries treatment) – main point (essence), application reasons, medicines, pharmacodynamics, application technique. Temporary restorations – groups, requirements, critical analysis, application indications.
6. Third basic principle of operative caries treatment – main point. Clinical requirements towards restorative materials. Application indications and contraindications. Dressing (lining) and base materials – groups, biomechanical requirements, placement technique and basic configurations.
7. Restoration contours and interdental contacts.
8. Instruments and placement technique for amalgam restorations.
9. Cast restorations – cavity preparation characteristics. Instruments, preparation and clinical techniques for direct and indirect cast inlays – impressions, fitting and cementation.

10. Instruments and placement techniques for aesthetic material restorations.
11. Pulp chamber and root canal (endodontium) – definition. Three- dimensional anatomy. Endodontic treatment principles. Access cavity preparation with pulp chamber opening and orifice location.
12. Root canal preparation for obturation. Types of canal contents and their removal. Root canal working length estimation. Chemo-mechanical root canal preparation. Instruments, irrigants and medications. Principles of action and usage.

### **3 course, 6 semester**

1. Obturation of root canal system – objectives, requirements, materials, techniques, criteria for root canal obturation's assessment. Root canal filling materials. Basics of posts and cores in restoration of nonvital endodontically treated teeth.
2. Disinfection and sterilization. Methods for preventing cross-contamination and acute infectious disease. Preparation for caries treatment and teeth with pulp and periapical pathology. Methods and anesthetics for the aims of pain management in conservative dental medicine
3. Dental caries aetiology and patogenesis. Topographic classification. Basic symptoms of caries. Examination methods for carious lesions.
4. Anatomy and physiology of the dental pulp and periodontium. Pulp and periodontium diseases classification. Inflammatory diseases of dental pulp - aetiology and patogenesis
5. Examination methods for diseases of dental pulp and periodontium. Basic symptoms of inflammatory diseases of dental pulp and periodontium. Treatment methods for inflammatory diseases of dental pulp. Critical analysis of nonvital methods.

# SEMINARS PROGRAMME

## II course, IV semester

1. Armamentarium – purpose. Requirements for the elements of a preparation. Elements of retention – methods of preparation, mechanism of action. When does a preparation satisfy the following requirements: easy and accurate adjustment of forming appliances (matrix, wedge, etc.); easy application of obturation materials; precise establishing of tooth form and proximal contacts; satisfying aesthetic results.
2. Class I preparations for dental amalgam.

## III course, V semester

1. Class II preparations for dental amalgam – basic configurations.
2. Preparations for aesthetic materials in the anterior region – types, basic configurations. Armamentarium used for class II preparations for aesthetic materials. Requirements for every particular element and slice of the preparation. When does a preparation allow: efficient etching, easy appliance of an adhesive system and obturation material, invisible transition between tooth structures and obturation material, precise construction of tooth form and proximal contacts, preserving the incisal leading, preserving the vitality of the tooth.
3. Preparations for aesthetic materials in distal teeth (molars and premolars) – types, basic configurations. Indications and contraindications. Requirements for every particular element and slice of the preparation. When does a cavity form allow: preserving the occlusal interrelations, good adhesion between the obturating material and tooth structures, lowered polymerization shrinkage of the obturation material, periodontal tissues injury preventing, retention of the obturation material, including placement of parapulpal posts. Technique for placement of parapulpal posts.
4. Dental amalgam obturations - Instruments. Sequence and purpose of the manipulations used. Obturation polishing – terms, mistakes, consequences. Criteria for determining the accuracy of an obturation – defended thesis.

## III course, VI semester

1. Composite materials obturations – Instruments. Sequence and purpose of the manipulations used for obturating III, IV and II class preparations. Possible ways for leading and compensating the polymerization shrinkage of composite materials.
2. Endodontic access cavity – Purpose. Factors affecting the position of the endodontic access cavity. Instruments and their purpose, used for preparing an endodontic access cavity and for shaping the pulp chamber. Basic configurations of the endodontic access cavities for incisors, canines, molars and premolars. Age differences in endodontic access cavities. Number and position of the orifices of root canals. Prevention of crown discoloration after endodontic treatment.
3. Step-back technique for cleaning and shaping root canals. Instruments.  
Essence, purpose and sequence of the manipulations used for removing the contents of a root canal. Determining working length. Root canal cleaning and shaping.
4. Obturation of root canals with cold lateral compaction. Criteria for determining the adequacy of canal preparation before obturation. Master cone and compactor selection. Objective control of the obturating manipulations. Preparation and placement of the root canal sealer – paste-like root canal filling material, actual lateral compaction, accessory cones. Objective control of the quality of root canal filling.

## EDUCATIONAL PROGRAM

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Discipline: Clinics of Conservative Dentistry

Educational level:

**Faculty of Dentistry-Sofia**

**Department of Conservative dentistry**

### LECTURE COURSE

#### Course IV, VII semester

1. Dental caries – classification, pathomorphology, clinical symptoms, differential diagnosis. Early diagnosis, noninvasive treatment.
2. Treatment planning in operative dentistry.
3. Dentine caries – types of dentine and clinical differentiation. Dental materials and medication for treatment of dentinal caries and their pharmacology. Reasons for one visit and two visits treatment.
4. Biomechanical problems after placing restorations from amalgam, resin materials and glass-ionomers.
5. Secondary dental caries – clinical symptoms and diagnosis. Etiology and reasons for secondary caries prevention. Recurrent caries and root caries- clinical symptoms and diagnosis, treatment.
6. Restoration of vital teeth with massive enamel and dentine losses – discussion and analysis of available tooth structures, occlusal forces and their functional efficiency.
7. Revision of lectures 1 to 6.

#### Course IV, VIII semester

1. Restoration of endodontically treated teeth. Root canal posts – types, technology, iatrogenic errors. Post and core restorations.
2. Non carious dental defects, part I – acute and chronic dental trauma, heat and chemical tooth causes, iatrogenic causes. Etiology, pathogenesis, clinical symptoms, diagnosis, treatment and prevention.
3. Non carious dental defects, part II – Fluorosis, abrasion, erosion, dental hypoplasia. Etiology, pathogenesis, clinical symptoms, diagnosis, treatment and prevention.
4. Endodontic treatment planning – links with diagnosis, reasons for multiple visit choices and the role of JDP. Initial treatment, definitive treatment, difficulties during treatment. Professional links between specialists in endodontics and JDP.
5. Regressive changes in the pulp. Non inflammatory pulp pathology: Atrophy, Dystrophy, pulp stones, blood vessels pulp pathology - . Etiology, pathogenesis, clinical symptoms, diagnosis, treatment.
6. Acute and chronic pulp pathology. Inflammation in pulp pathology. Reversible and nonreversible pulp pathology. Clinical symptoms, diagnosis, treatment.
7. Revision of lectures 1 to 6.

### **Course V, IX semester**

1. Biological treatment of the pulp - reversible and nonreversible conditions: pulp capping. Diagnosis, inclusion and exclusion criteria, treatment methods, medication and materials. Critical revision.
2. Pulp extirpation under anesthesia – methodology, inclusion and exclusion criteria, possible complications. One and two visits motivation.
3. Pain control in endodontics: the pain in orofacial pathology, pain as a leading endodontic syndrome. Clinical behavior and approach to patients with acute dental pain.
4. Acute periapical pathology. Clinical symptoms, diagnosis, treatment.
5. Periapical lesions. Clinical symptoms, diagnosis, treatment, follow up duration.
6. Pathogenesis of dental pulp and periapex recovery after different treatment methods in pulp pathology and endodontics.
7. Revision of lectures 1 to 6.

### **Course V, X semester**

1. Indirect resin restorations – cavity preparation, technology, critical review of advantages and disadvantages.
2. Retreatment in endodontics: Legal, professional and economical aspects. Inclusion and exclusion criteria and clinical decision making.
3. Difficult differential diagnostic problems in endodontics. Non endodontic structures as diagnostic mistakes – traumatic cysts, sinusitis, Herpes zoster, neuralgia, cracks and fractures of hard dental tissues.
4. Endodontic surgery: general information, inclusion and exclusion criteria. Main techniques in surgical endodontics: apicoectomy, hemisection, retrograde root canal obturation. Follow up duration and criteria for valuation of treatment outcome.
5. Emergency endodontics – definition and aspects of the problem, diagnosis which requires emergency. Techniques in root canal smear layer removal, root canal preparation and medication and pathways for evacuation of the exudate. Reduction of the occlusal forces. Different schemes of evidence based clinical behavior.
6. Microbiology in endodontics – microbial flora in non-infected and infected root canals in necrotic pulp. Main bacteria and their relation to hard dental structure diseases. Microbiology probation in endodontics – special needs, methods of probation and reasons for antibiotic therapy.
7. Bleaching – vital and nonvital. Reasons, techniques, cavity preparations, risks and prevention of complications during bleaching. Technology of facets from resin materials.

# SEMINARS PROGRAMME

## **IV course / VII semester**

1. Premedication and anesthesia used for conservative dentistry purpose. Control of the complications – haematoma, traumatic injuries, paresthesia, allergic reactions.
2. Dentine wound – types, medicine treatment. Differential diagnosis of caries profunda. Biomechanical problems of obturations made of dental amalgam, composite materials and glass-ionomer cements.
3. Most common mistakes made when removing the biological content of a root canal and shaping the latest. Cause and ways for correcting the following mistakes: bleeding of a root canal, traumatic and infectious apical periodontitis, perforations, zip perforations, edges, apical plugs, emphysema, separation of root canal instruments, toxic periodontitis

## **IV COURSE – VIII TERM**

1. TOOTH RESTORATION WITH POST SYSTEMS – INDICATIONS, CONTRAINDICATIONS, SEQUALE OF PROCEDURES FOR DYRECT AND UNDYRECT POSTS.
2. MISTAKES IN CAVTY PREPARATION AND OBTURATION LEADING TO SECONDARY CARIES DEVELOPMENT.
3. TREATMENT PLAN FOR THE MEANS OF CONSERVATIVE TGREATMENT.
4. CAST METAL INLAYS – INDICATIONS, CAVITY PREPARATION. INDIRECT METHOD FOR PREPARATION

## **V COURSE – IX TERM**

1. VITAL PULP THERAPY – TYPES, INDICATIONS, CONTRAINDICATIONS, TECHNIQUE, CONTROL OF THE RESULTS
2. INSTRUMENTS FOR DIAGNOSIS AND TREATMENT IN ENDODONTICS – TECHNIQUES FOR SHAPING THE ROOT CANAL SYSTEM, OUTCOME EVALUATION, INFECTION CONTROL.
3. DIFFERENTIAL DIAGNOSIS OF INFLAMATORY DISEASES OF PULP AND PERIRADICULAR TISSUES.

## **V COURSE – X TERM**

1. RETREATMENT IN ENDODONTICS
2. ENDODONTIC SURGERY – RADICOTOMY, HAEMISECTION, BICUSPIDATION, REIMPLANTATION.
3. EMERGENCY ENDODONTICS – MANAGEMENT PRINCIPLES