Curriculum

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


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.
5. Factors affecting outline cavity form - practical significance for cavity borders determination on each tooth surface.
8. General principles of cavity preparation - practical significance for initial outline form and carious dentin removal.
12. Class I cavity preparation for amalgam restorations – foramen coecum (buccal or lingual pit) cavities.
15. Class II cavity preparation for amalgam restorations – general characteristics and basic parts of the common 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.
22. Class V cavity preparation for amalgam restorations.
23. Microretentiones – characteristics, preparation technique, retention significance and SEM characteristics.
24. Adhesive systems – classification, chemical compounds (composition) and characteristics.
27. Class III cavity preparation for composite resin (tooth-colored) restorations – buccoproximal 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.
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.
51. Cast metal inlay restorations. Indirect (laboratory) method – indications, instruments and technique.
52. Cast metal restorations – adjustment, cementation and removal of the inlay.
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.
59. Chemo-mechanical preparation of the root canals – basic guidelines and hand instrument 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).
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.
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.
15. Composition and types 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.
20. Glassionomer cements – clinical characteristics and indications.
22. Root canal anatomy of lower molars.
24. Endodontic barbed broaches - characteristics and techniques of use.
25. Basic hand endodontic instruments.
27. Root canal preparation – Step-back technique.
28. Lateral condensation – technique of application.
31. Histology of pulp tissue.
32. Physiology of pulp tissue.
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.
2. Pathomorphologic characteristics of the acute and chronic dental caries.
3. Clinical and paraclinical characteristics of the different types of 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).
12. Dental hyperesthesia (hypersensitivity) – types and reasons for beginning.
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.
27. Indirect pulp capping. Technique, medicaments, prognosis.
35. Chronic apical periodontitis - clinical and paraclinical characteristics. Differential diagnosis.
38. Essence and type of the healing processes after root canal treatment of irreversible pulpitis and apical periodontitis.
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.
52. Endodontic surgery – root resection, hemisection, bicuspidation.
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.
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.
14. Root canal treatment on teeth with vital pulps - indications, contraindications.
17. Periapical abscess – techniques of draining the pus.
18. Radicular posts – biomechanical rules for the applications.
22. Intraligamental anesthesia.
23. Intrapulpal and intraossal anesthesia.
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.

SYNOPSIS OF CONSERVATIVE DENTISTRY – STATE FINAL EXAMINATION (SERTIFICATION)

1. Etiology and pathogenesis of tooth caries.
2. Classification and pathomorphology of tooth caries.
4. Early diagnosis of tooth caries - clinical features and non operative treatment.
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.
15. Class IV 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.
20. Restorative technique for dental amalgam.
22. Restorative technique for aesthetic restorations.
23. Anaesthesia in cariology and endodontology.
28. Clinical presentation and diagnosis of acute pulpitis.
29. Clinical presentation and diagnosis of chronic pulpitis.
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.
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.
45. Retreatment in endodontics.
46. Restoration of the endodontically treted tooth.
47. Emergency endodontics.

**DENTAL PHYSIOTHERAPY**

1. Electric pulp testing procedures in cariology and endodontics.
EDUCATIONAL PROGRAM

Discipline: **Propaedeutics of Conservative Dentistry**

Educational level:

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

**LECTURE COURSE**

**II course, IV semester**
3. Dental amalgam – types of alloys, composition, chemical reactions.

**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.
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.
10. Instruments and placement techniques for aesthetic material restorations.

3 course, 6 semester

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.

**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.
EDUCATIONAL PROGRAM

Discipline: Clinics of Conservative Dentistry

Educational level:

Faculty of Dentistry-Sofia
Department of Conservative dentistry

LECTURE COURSE

Course IV, VII semester

2. Treatment planning in operative dentistry.
4. Biomechanical problems after placing restorations from amalgam, resin materials and glass-ionomers.
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

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.
7. Revision of lectures 1 to 6.
**Course V, IX semester**


2. Pulp extirpation under anesthesia – methodology, inclusion and exclusion criteria, possible complications. One and two visits motivation.


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.


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.
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 CAVITY 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