**STUDY GUIDE**

**OPERATIVE DENTISTRY**

**LAHORE MEDICAL AND DENTAL COLLEGE (2022)**



**COURSE DIRECTOR:**

**Dr Saima Razaq Khan BDS, FCPS Professor & Head of the Department**

**Contributors:**

**Dr Moeen ud Din Ahmad BDS, MCPS Associate Professor**

**Dr Anam Fayyaz BDS, FCPS Assistant Professor**

**Dr.Aisha Butt BDS, FCPS Senior Registrar**

**Co-contributors:**

**Dr.Maham Anjum Demonstrator**

**Dr Nayaab Gilani Demonstrator**

**Dr Umber Zahra Demonstrator**

**CLINICAL AND LECTURE HOURS OF OPERATIVE DENTISTRY**

**2nd year BDS**

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|  | **AVAILBLE** | **REQUIRED** |
| **Practical** | 4hrs/ week, 96 hrs/ batch | - |
| **Lectures** | 36 hrs | - |
| **Total** | 132 hrs | 135 hrs |

**3rd year BDS**

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|  | **AVAILBLE** | **REQUIRED** |
| **Practical** | 11 hrs/ week, 88 hrs/ batch | - |
| **Lectures** | 18 hrs | - |
| **Total** | 106 hrs | 100 hrs |

**4th year BDS**

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|  | **AVAILBLE** | **REQUIRED** |
| **Practical** | 23 hrs/ week, 230 hrs/ batch | - |
| **Lectures** | 110 hrs | - |
| **Total** | 340 hrs | 305 hrs |

**INTRODUCTION:**

Operative Dentistry is one of the branches of dentistry that deals with the art and science of the diagnosis, prevention, treatment, and **prognosis** of diseases or trauma to teeth.

Restorative dentistry is the study, diagnosis and integrated management of diseases of the teeth and their supporting structures and the rehabilitation of the dentition to functional and aesthetic requirements of the individual.

Endodontics is the branch of dentistry concerning dental pulp and tissues surrounding the roots of a tooth.

Crown and Bridge is the art and science of restoring damaged teeth with cast metal, metal ceramic, all-ceramic or resin restorations and of replacing missing teeth with fixed prosthesis.

Paedodontics is the study, diagnosis and integrated management of diseases of the teeth and their supporting structures in children.

**SCOPE AND SEQUENCE:**

Training in Operative Dentistry starts in 2nd year of BDS. Lectures are being held along with rotation of each batch in the department where students perform amalgam restorations on phantom teeth in the skills lab. During the course of 3rd years, lectures are held once in a week along with 8 weeks of rotation in the department where the students perform amalgam and composite restorations on phantom teeth in the skills lab. Principles of tooth preparation are taught.

During the 4th year of BDS, three lectures will be delivered weekly. Students will complete 10 weeks of clinical duties in the department and will accomplish their clinical requirements. On Wednesdays the students will have endodontics and crown and bridge sessions in the skills lab and perform their required quota.

**CURRICULUM OF OPERATIVE DENTISTRY**

**OBJECTIVES:**

The learner should be able to:

1. Assess and formulate a treatment plan
2. Prepare amalgam restorations (class I, II, V)
3. Prepare composite restorations (class I, II, III, IV, V)
4. Usage of GIC as a restorative material
5. Diagnose and assess for repair/ replacement of restorations
6. Diagnose and manage cracks in teeth
7. Diagnose and manage dentine hypersensitivity
8. Assess and prepare aesthetic restorations
9. Prepare restoration of endodontically treated teeth
10. Perform access cavity preparation, determine the working length with a radiographic method, perform cold lateral obturation technique
11. Diagnose and manage developmental defects in primary and permanent teeth
12. Learn to manage trauma to primary and permanent teeth

**INTRODUCTION TO RESTORATIVE DENTISTRY**

**Taught in 2nd, 3rd and 4th year BDS**

**Course director: Prof. Dr.Saima Razaq Khan**

|  |  |  |
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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Define operative dentistry, along with an overview of dental anatomy, histology, physiology and occlusion. | Dr.Saima,  Dr Aisha Butt  (2nd & 3rd Year BDS) |
| **2.** | Assessment of patients  Formulate a diagnosis  Asses the prognosis  Outline treatment plan for patients. |
| **3.** | Discuss cross infection control, identify different methods of contamination.  Illustrate personal barrier protection, aseptic techniques and sterilization. |
| **4.** | Illustrate patient and operator position and instrument exchange. |
| **5.** | Discuss isolation techniques.  Illustrate rubber dam isolation and other methods. |
| **6.** | Name and explain instruments and equipment for tooth preparation-hand and rotary instruments. |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Evaluate patients, and formulate treatment plans |  |
| **2.** | Practice cross infection control |  |
| **3.** | Practice rubber dam application |  |

**DENTAL CARIES**

**Taught in 4th year BDS**

**Course director: Prof. Dr. Saima Razaq Khan**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Identify the etiology of dental caries. | Dr.Saima |
| **2.** | Classify dental caries. | Dr.Saima |
| **3.** | Identify the clinical characteristics of dental caries. | Dr.Saima |
| **4.** | Analyze the risk assessment. | Dr.Saima |
| **5.** | Formulate management protocols. | Dr.Saima |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Identification of dental caries |  |
| **2.** | Plan management protocols |  |

**AMALGAM RESTORATIONS**

**Taught in 2nd, 3rd and 4th year BDS**

**Course director: Prof.Dr. Saima Razaq Khan**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Apply principles of cavity preparation; initial tooth preparation steps-outline form, resistance and retention form, convenience form; amalgam use and manipulation; final tooth preparation steps-removal of remaining carious dentin, pulp protection, liners and bases and its uses, secondary resistance and retention form, finishing of enamel walls and margins and final procedures-cleaning, inspecting and sealing. Finishing and polishing of direct amalgam restorations. | Dr.Saima,  Dr Aisha Butt  (2nd & 3rd Year BDS) |
| **2.** | Outline the steps of Class I amalgam cavity design and principles, liners and bases, and filling technique-condensation and carving. |
| **3.** | Outline the steps of Class II amalgam cavity design and principles, matrix placement & liners and bases, and filling technique- condensation and carving. |
| **4.** | Outline the matrix systems used in direct restorations, matrix application for Class II amalgam, matrix application for Class II, III & IV composite. |
| **5.** | Outline the steps of Class III, V and VI amalgam cavity design and principles, linersand filling technique-condensation and carving. |
| **6.** | Identify & enlist the reasons of failure of amalgam restorations Indications/contraindications, replacement options. |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Prepare Amalgam Class I restoration |  |
| **2.** | Prepare Amalgam Class II restoration |  |
| **3.** | Prepare Amalgam Class III restoration |  |
| **4.** | Prepare Amalgam Class V restoration |  |
| **5.** | Prepare Amalgam Class VI restoration |  |

**COMPOSITE RESTORATIONS**

**Taught in 3rd and 4th year BDS**

**Course director: Prof.Dr. Saima Razaq Khan**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Describe adhesion to enamel and dentin in direct and indirect restorations; classification of dentinal adhesives, related clinical factors. | Dr.Saima |
| **2.** | Review composite resins material science; classify and discuss composites, polymerization properties, general considerations for composite restorations, clinical techniques. | Dr.Saima |
| **3.** | Rationale of finishing and polishing of composite restorations, the use ofburs, disks, interproximal strips andpolishing paste. | Dr.Saima |
| **4.** | Outline the steps of Class I composite restorations, pit and fissure sealants, preventive resins and conservative composite restorations, clinical techniques for class 1 direct composite restoration. | Dr.Saima, |
| **5.** | Outline the steps of Class II composite restorations, clinical techniques for class II direct composite restorations, extensive class II direct composite restorations and foundations. | Dr.Saima, |
| **6.** | Outline the steps of Class III, IV and V composite restorations, class III, IV and V direct composite restorations, clinical techniques for class III direct composite restorations, clinical techniques for class IV direct composite restorations, clinical techniques for class V direct composite restorations. | Dr.Saima |
| **7.** | Identify & enlist the reasons of failure of composite restorations Indications/contraindications, replacement options. | Dr.Saima |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Prepare Composite Class I restoration |  |
| **2.** | Prepare Composite Class II restoration |  |
| **3.** | Prepare Composite Class III restoration |  |
| **4.** | Prepare Composite Class IV restoration |  |
| **5.** | Prepare Composite Class V restoration |  |

**COMPLEX AMALGAM RESTORATIONS & RESTORATION OF ENDODONTICALLY TREATED TEETH**

**Taught in 4th year BDS**

**Course director: Prof.Dr. Saima Razaq Khan**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Enlist Indications/contraindications, advantages/disadvantages of complex amalgam restorations | Dr.Saima |
| **2.** | Illustrate pin retained amalgam restorations, slot retained, cove, proximal lock, amalgam foundation used in complex amalgam restorations | Dr.Saima |
| **3.** | Evaluate the risk analysis and assess and formulate a treatment plan for endodontically treated teeth | Dr.Saima |
| **4.** | Discuss material selection and enlist properties of ideal core for restoration of endodontically treated teeth | Dr.Saima |
| **5.** | Illustrate post design and materials | Dr.Saima |
| **6.** | Describe adhesion within root canal and the clinical principles | Dr.Saima |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Prepare a complex amalgam restoration employing the most suitable method for that preparation |  |

**NON CARIOUS CERVICAL LESIONS, GIC & DENTINAL HYPERSENSITIVITY**

**Taught in 4th year BDS**

**Course director: Prof.Dr. Saima Razaq Khan**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Define and discuss non-carious tooth defects-abrasion, erosion, attrition, abfraction & their treatment | Dr.Saima |
| **2.** | Review composition, structure and properties of GIC. Identify their clinical use and considerations and modifications of GIC. | Dr.Saima |
| **3.** | Define dentinal hypersensitivity; identify its etiology and clinical features, management of dentinal hypersensitivity. | Dr.Saima |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Use GIC as a restorative material |  |
| **2.** | Use GIC for pulp capping |  |

**BLEACHING AND ABRASION**

**Taught in 4th year BDS**

**Course director: Prof.Dr. Saima Razaq Khan**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Classify bleaching treatments. Analyze the mechanism of bleaching. | Dr.Saima |
| **2.** | Identify and differentiate between non-vital and vital bleaching procedures. | Dr.Saima |
| **3.** | Outline the concept of abrasion. Identify and differentiate between micro abrasion and macro abrasion | Dr.Saima |

**COMPOSITE VENEERS AND INLAYS AND ONLAYS**

**Taught in 4th year BDS**

**Course director: Prof.Dr. Saima Razaq Khan, Dr Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Outline the clinical procedure, tooth preparation and fabrication and cementation of composite veneers. | Dr.Saima |
| **2.** | Enlist the indications/contraindications of inlays and onlays, advantages/disadvantages, types and clinical procedure.  Metal and tooth coloured inlays | Dr.Moeen |

**INTRODUCTION TO ENDODONTICS**

**Taught in 4th year BDS**

**Course director: Dr Anam**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Define endodontics, along with an overview of the root canal system. Explain the objectives, indications and contra-indications of Root Canal Treatment. Summarize the steps for RCT. | Dr.Anam |
| **2.** | Discuss the protection of the pulp and preservation of the apex. Define them; explain the iatrogenic effects on dental pulp, and protecting the pulp from the effects of materials. | Dr.Anam |
| **3.** | Discuss and outline the introduction of pulp and periapical pathosis, the irritants, inflammatory process, lesion progression. List and discuss the classification of pulpal diseases, classification of periapical diseases, healing of pulp and periapical tissues | Dr.Anam |
| **4.** | Discuss diagnosis and treatment planning. Outline the diagnostic process, discuss the interpretation of different types of pain; describe the clinical examination, clinical tests, interpretation of radiographic examination, formulation of treatment plan, and systemic considerations. | Dr.Anam |

**ROOT CANAL PROCEDURE**

**Taught in 4th year BDS**

**Course director: Dr Anam**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Discuss endodontic instruments. Discuss and appraise rubber dam isolation. Name and explain instruments for access cavity preparation, root canal preparation, and for filling root canals | Dr.Anam |
| **2.** | Explain pulp space anatomy and access cavities. Identify the components of root canal system; outline the general principles and laws relating to the pulp chamber anatomy. Describe and illustrate the access cavity preparation for anterior teeth, posterior teeth, individual teeth, and discuss and recognize the errors in access. | Dr.Anam |
| **3.** | Discuss isolation, goals and methods of isolation. Define and explain working length determination, discuss the methods of working length determination and classification of Apex Locators | Dr.Anam |
| **4.** | Define cleaning and shaping of the root canals. Enlist the principles of cleaning, principles of shaping, describe and illustrate apical canal preparation, pretreatment evaluation. Discuss the different root canal preparation techniques and hand instrumentation. | Dr.Anam |
| **5.** | Discuss and explain endodontic irrigants, the objectives of irrigation, irrigation hydrodynamics, properties of an ideal irrigants and the types of irrigants used. | Dr.Anam |
| **6.** | Explain intra-canal medicaments, benefits of intra-canal medicaments, commonly used intra-canal medicaments, temporary restorations, objectives of temporary restorations and the materials used for temporary restorations. | Dr.Anam |
| **7.** | Define and explain obturation, objectives of obturation, materials used for obturation, ideal properties of obturation materials, obturation techniques with gutta-percha and the evaluation of obturation. | Dr.Anam |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Access Cavity Preparation |  |
| **2.** | Instrument identification |  |
| **3.** | Radiographic evaluation |  |
| **4.** | Working Length determination with a radiographic method |  |
| **5.** | Cold Lateral Obturation Technique |  |

**ENDODONTIC EMERGENCIES AND FLARE-UPS, PROCEDURAL ACCIDENTS, NON-SURGICAL RE-TREATMENTS**

**Taught in 4th year BDS**

**Course director: Dr Anam**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Diagnosis and treatment planning of endodontic emergencies and flare-ups, incidence of exacerbations. Enlist the categories of emergencies, interappointment emergencies and the management of flare-ups. | Dr.Anam |
| **2.** | Discuss procedural accidents, explain and describe perforations during access preparation, accidents during cleaning and shaping and accidents during obturation. | Dr.Anam |
| **3.** | Indications and contra-indications for non-surgical retreatment, risks and benefits of re-treatment, endodontic retreatment procedures, and discuss the prognosis. | Dr.Anam |

**ENDODONTIC SURGERY, ENDODONTIC AND PERIODONTAL INTERRELATIONSHIP**

**Taught in 4th year BDS**

**Course director: Dr Anam**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Discuss endodontic surgery, incision for drainage, periapical surgery, corrective surgery, root amputation, hemisection and bicuspidization. | Dr.Anam |
| **2.** | Explain the endodontic and periodontal interrelationship, the pathways of communication between the dental pulp and the periodontium, effects of pulpal diseases and endodontic procedures on periodontium, effect of periodontal disease and procedure on pulp and the classification and differential diagnosis of endodontic-periodontic lesions. | Dr.Anam |

**INTRODUCTION TO CROWN AND BRIDGE, INDICATIONS OF CROWNS**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Introduction to crown and bridge  Define  -Full veneer crown  -partial veneer crown  -post and core crown  -Porcelain jacket crown/ All ceramic crown  -Porcelain fused to metal crown/ Metal ceramic crown  -Metal crown | Dr.Moeen ud Din |

**GENERAL PRINCIPLES OF CROWN PREPARATION**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Apply basic principles of crown preparation  -Conservation of tooth structure  - Retention and resistance form  - Marginal integrity  - Structural durability  -Conservation of periodontium. | Dr.Moeen ud Din |

**CASE ASSESSMENT FOR CROWN AND BRIDGE**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Asses and formulate a treatment plan for Crown and Bridge  - Assessment of general factors  - Evaluation of abutment  - Treatment planning. | Dr.Moeen ud Din |

**TYPES OF CROWNS**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Enlist indications & contraindication of crowns  -Classify crowns  -Identify advantages & disadvantages of different types | Dr.Moeen ud Din |

**PORCELAIN JACKET CROWN**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | -Enlist indications/ Contraindications of Porcelain Jacket Crown  -Outline the steps of preparation for Porcelain Jacket Crown | Dr.Moeen ud Din |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Prepare Porcelain Jacket crown |  |

**PORCELAIN FUSED TO METAL CROWN**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Enlist Indications/ Contraindications of Porcelain fused to metal Crown  Outline the steps of Preparation of Porcelain fused to metal Crown | Dr.Moeen ud Din |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Prepare Porcelain fused to metal crown |  |

**POST AND CORE CROWNS**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Enlist Indications/ contraindication of Post and core crown  Outline the steps of Preparation for post and core crowns  Select technique for making Post and core crown | Dr.Moeen ud Din |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Prepare post and core crown |  |

**CAST METAL CROWN**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Enlist Indications/ Contraindications of metal Crown  Outline the steps of Preparation of metal crown | Dr.Moeen ud Din |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Prepare Full veneer metal crown |  |

**PARTIAL VENEER CROWNS**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Enlist Indications/ Contraindications of Partial veneer Crown  Outline the steps of Preparation of partial veneer Crown | Dr.Moeen ud Din |

**TISSUE MANAGEMENT AND IMPRESSION TAKING**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Manage Soft tissues before impression taking  Select impression technique for crown and bridge work | Dr.Moeen ud Din |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Prepare Impression techniques |  |

**OCCLUSAL RECORD, TRYING IN, TEMPORARY CROWNS AND CEMENTATION**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Register Occlusion of the patient  Temporize the prepared teeth  - objectives  - types  -techniques for chair side temporary crown | Dr.Moeen ud Din |
| **2.** | Try-in Crown and Bridge restoration - logical sequence of try-in,  Select cementation technique for crowns | Dr.Moeen ud Din |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Prepare Try-in and cementation of crown |  |

**BRIDGE RESTORATIONS**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Define bridge restorations  Enlist Indications & Contraindications  Classify bridge restoration  Analyze Advantages and disadvantages of different types bridges | Dr.Moeen ud Din |

**ABUTMENT SELECTION**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Evaluate and select abutments for a bridge  Select a suitable bridge design | Dr.Moeen ud Din |

**PONTIC SELECTION**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| --- | --- | --- |
| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Define Pontic  Apply Principles of pontic design  Enlist Indications, advantages and disadvantages of different types of pontics  Select suitable type of pontic | Dr.Moeen ud Din |

**RETAINERS AND CONNECTOR SELECTION**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Define Retainers  Enlist types of retainer  Select retainer for a bridge- factors affecting the selection of a retainer | Dr.Moeen ud Din |
| **2.** | Define connector  Enlist types of connector  Select type of connector for bridge | Dr.Moeen ud Din |

**RESIN BONDED BRIDGES**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Define resin bonded bridges  Enlist Indications and contraindications  Select Type of resin bonded bridges  Compare advantages/ disadvantages of different types | Dr.Moeen ud Din |

**MAINTENANCE, FAILURE & REPAIR OF BRIDGES**

**Taught in 4th year BDS**

**Course director: Dr.Moeen ud Din**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Differentiate the success & failure of Crown & Bridge  Identify the cause of failure  Formulate/design its solution | Dr.Moeen ud Din |

**INTRODUCTION TO PAEDODONTICS**

**Taught in 4th year BDS**

**Course director: Dr.Saima Razzaq Khan**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Introduction to Rationale, Objective and future of Paedodontics.  Define and outline objectives of paedodontics | Dr.Saima |
| **2.** | History , examination, risk assessment, and treatment planning  Assessment of patients  Formulate a diagnosis  Assess the prognosis  Outline treatment plan for patients | Dr.Saima |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Evaluate patients, and formulate treatment plans |  |

**MANAGEMENT OF CHILD BEHAVIOUR, PAIN AND ANXIETY**

**Taught in 4th year BDS**

**Course director: Dr.Saima Razzaq Khan**

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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Discuss behavior management. Outline pharmacological and non-pharmacological management of child behavior. | Dr.Saima |
| **2.** | Explain mental health evaluation and care | Dr.Saima |
| **3.** | Discuss and explain the role and usage of local anaesthesia, sedation and general anaesthesia | Dr.Saima |

**DENTAL CARIES**

**Taught in 4th year BDS**

**Course director: Dr.Saima Razzaq Khan**

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| --- | --- | --- |
| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Describe pathophysiology of dental caries, diagnosis, preventive measures. Demonstrate instructions for parents counseling, importance of first permanent molars | Dr.Saima |
| **2.** | Discuss dental caries in the preschool child.  Recognize role of fluoride, chlorhexidine gels, fissure sealants, tooth brushing, role of diet.  List of measures for management of child behavior. | Dr.Saima |
| **3.** | Discuss treatment of dental caries in the primary dentition Identify role of pit and fissure sealants  List of indications of stainless steel crown  Outline indications of direct and indirect pulp capping | Dr.Saima |
| **4.** | Discuss treatment of dental caries in young permanent dentition Identify role of pit and fissure sealants  Recognition of MIH cases and management.  Discuss and describe treatment options for anterior, occlusal, approximal and extensive/deep caries.  Treatment options for hypomineralized, hypomature or hypoplastic first permanent molars  Management options of rampant caries | Dr.Saima |

**RESTORATIVE MATERIALS IN PAEDODONTICS, MODIFICATION OF RESTORATIVE CAVITY IN CHILDREN & PIT AND FISSURE SEALANTS, ROLE OF FLUORIDE IN TOOTH DEVELOPMENT**

**Taught in 4th year BDS**

**Course director: Dr.Saima Razzaq Khan**

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| --- | --- | --- |
| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Discuss and identify the indications and uses of restorative materials-Amalgam, Composite resin, GIC, Stainless steel crowns. Practice these materials in clinics | Dr.Saima |
| **2.** | Describe modification of restorative cavity in children Define MID, and demonstrate new techniques for tooth preparation | Dr.Saima |
| **3.** | Discuss pit and fissure sealants, role of fluoride in caries development, indications of pit and fissure sealants, mechanism of action of fluoride and dental fluorosis | Dr.Saima |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Practice the restorative materials in clinics-amalgam, composite, GIC and stainless steel crowns |  |

**ENDODONTICS IN CHILDREN, MANAGEMENT OF IMMATURE ROOT APEX & TRAUMATIC INJURIES TO TEETH**

**Taught in 4th year BDS**

**Course director: Dr.Saima Razzaq Khan**

|  |  |  |
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| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Define pulpotomy, pulpectomy  Describe the procedure  List of indications and contraindications of pulpotomy and pulpectomy | Dr.Saima |
| **2.** | Define apexification, apexogenesis  Describe the procedure  Describe MTA and its properties | Dr.Saima |
| **3.** | Discuss the endodontic aspects of traumatic injuries, classification of tooth fractures,diagnosis, endodontic management of tooth fractures, longitudinal tooth fractures | Dr.Saima |
| **At the end of this course, the student will be able to:** | |  |
| **1.** | Assist the procedure of pulpotomy in the clinics |  |

**ANOMALIES OF TOOTH FORMATION AND ERUPTION, HEREDITARY DISORDERS, MEDICAL CONDITIONS SPECIFIC TO CHILDREN, MANAGEMENT OF HANDICAPPED CHILDREN**

**Taught in 4th year BDS**

**Course director: Dr.Saima Razzaq Khan**

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Learning Outcomes (LO)** | **Facilitator** |
| **1.** | Identification of missing teeth, extra teeth, abnormality of tooth size, tooth form, root form, tooth structure.  Describe disturbance of eruption and exfoliation. Describe dental effects of prematurity and low weight birth | Dr.Saima |
| **2.** | Discuss hereditary disorders and medical conditions specific to the children  Define syndrome  Recognize different syndromes with specific features  List of syndromes and their dental management | Dr.Saima |
| **3.** | Identify medical conditions in children  Names of diseases and their management | Dr.Saima |
| **4.** | Outline the management of handicapped children, techniques of oral care and home care remedies | Dr.Saima |

**2nd YEAR BDS LECTURE SCHEDULE**

|  |  |  |
| --- | --- | --- |
| **Sr No.** | **TOPIC** | **FACULTY** |
| 1. | Introduction and orientation to pre-clinical operative dentistry | Dr.Aisha Butt |
| 2. | Hand and rotary instruments | Dr.Aisha Butt |
| 3. | Patient’s and operator’s positioning/ergonomics in dentistry | Dr.Aisha Butt |
| 4. | General Principles of Tooth Preparation | Dr.Aisha Butt |
| 5. | General Principles of Tooth Preparation | Dr.Aisha Butt |
| 6. | Amalgam Class 1 Restoration (design & principle) | Dr.Aisha Butt |
| 7. | Amalgam Class 1 Restoration (design & principle) | Dr.Aisha Butt |
| 8. | Amalgam Class 1 Restoration(liners & bases) | Dr.Aisha Butt |
| 9. | Amalgam Class 1 Restoration (condensation, carving & finishing) | Dr.Aisha Butt |
| 10. | Amalgam Class 1 Restoration (condensation, carving & finishing) | Dr.Aisha Butt |
| 11. | Test | Dr.Aisha Butt |
| 12. | Amalgam Class 2 Restoration (design & principle) | Dr.Aisha Butt |
| 13. | Amalgam Class 2 Restoration (design & principle) | Dr.Aisha Butt |
| 14. | Amalgam Class 2 Restoration (matrix band placement) | Dr.Aisha Butt |
| 15. | Amalgam Class 2 Restoration (liners & bases) | Dr.Aisha Butt |
| 16. | Amalgam Class 2 Restoration (condensation, carving & finishing) | Dr.Aisha Butt |
| 17. | Test | Dr.Aisha Butt |

**2nd YEAR BDS PRE-CLINICAL DEMONSTRATIONS**

|  |  |  |
| --- | --- | --- |
| **Sr No.** | **TOPIC** | **FACULTY** |
| 1. | Introduction and orientation to pre clinical operative dentistry | Dr.Aisha Butt |
| 2. | Hand and rotary instruments | Dr.Aisha Butt |
| 3. | Patient’s and operator’s positioning/ergonomics in dentistry | Dr.Aisha Butt |
| 4. | General Principles of Tooth Preparation | Dr.Aisha Butt |
| 5. | General Principles of Tooth Preparation | Dr.Aisha Butt |
| 6. | Amalgam Class 1 Restoration (design & principle) | Dr.Aisha Butt |
| 7. | Amalgam Class 1 Restoration(design & principle) | Dr.Aisha Butt |
| 8. | Amalgam Class 1 Restoration (liners & bases) | Dr.Aisha Butt |
| 9. | Amalgam Class 1 Restoration (condensation, carving & finishing) | Dr.Aisha Butt |
| 10. | Amalgam Class 1 Restoration (condensation, carving & finishing) | Dr.Aisha Butt |
| 11. | Test | Dr.Aisha Butt |
| 12. | Amalgam Class 2 Restoration (design & principle) | Dr.Aisha Butt |
| 13. | Amalgam Class 2 Restoration (design & principle) | Dr.Aisha Butt |
| 14. | Amalgam Class 2 Restoration (matrix band placement) | Dr.Aisha Butt |
| 15. | Amalgam Class 2 Restoration (liners & bases) | Dr.Aisha Butt |
| 16. | Amalgam Class 2 Restoration (condensation, carving & finishing) | Dr.Aisha Butt |
| 17. | Test | Dr.Aisha Butt |

**3RD YEAR BDS LECTURES SCHEDULE**

|  |  |  |
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| **SR #** | **TOPIC** | **FACULTY** |
| 1. | Introduction to Operative Dentistry | Dr.Aisha Butt |
| 2. | General Principles of Tooth Preparation | Dr.Aisha Butt |
| 3. | General Principles of Tooth Preparation | Dr.Aisha Butt |
| 4. | General Principles of Tooth Preparation | Dr.Aisha Butt |
| 5. | General Principles of Tooth Preparation | Dr.Aisha Butt |
| 6. | Amalgam Class 1 Preparation | Dr.Aisha Butt |
| 7. | Amalgam Class 1 Restoration | Dr.Aisha Butt |
| 8. | Modifications of Class 1 | Dr.Aisha Butt |
| 9. | Amalgam Class 2 Tooth Preparation | Dr.Aisha Butt |
| 10. | Amalgam Class 2 Restoration | Dr.Aisha Butt |
| 11. | Modification of Class 2 Amalgam Preparation | Dr.Aisha Butt |
| 12. | Class Test | Dr.Aisha Butt |
| 13. | Introduction to Composite Restorations | Dr.Aisha Butt |
| 14. | Class 1 Composite Restorations | Dr.Aisha Butt |
| 15. | Class 1 Composite Restorations | Dr.Aisha Butt |
| 16. | Class 2 Composite Restorations | Dr.Aisha Butt |
| 17. | Class 2 Composite Restorations | Dr.Aisha Butt |
| 18. | Isolation Techniques | Dr.Aisha Butt |
| 19. | Isolation Techniques | Dr.Aisha Butt |
| 20. | Revision | Dr.Aisha Butt |
| 21. | Class Test | Dr.Aisha Butt |

**3RD YEAR BDS PRE-CLINICAL DEMONSTRATIONS**

|  |  |  |
| --- | --- | --- |
| **SR. #** | **TOPIC** | **FACULTY** |
| 1. | Introduction and orientation to pre-clinical operative dentistry, hand/rotary instruments, general principles of tooth preparation | Dr.Aisha Butt |
| 2. | Class 1 amalgam (design and principles) | Dr.Aisha Butt |
| 3. | Class 1 amalgam (liners and bases, condensation and carving) | Dr.Aisha Butt |
| 4. | Class II amalgam restoration (design & principles, matrix placement) | Dr.Aisha Butt |
| 5. | Class II amalgam restoration (liners and bases, condensation and carving) | Dr.Aisha Butt |
| 6. | Class I Composite Restorations | Dr.Aisha Butt |
| 7. | Class II Composite Restorations | Dr.Aisha Butt |
| 8. | Clinical Test and Viva | Dr.Aisha Butt |
| 9. | Students start their quota after passing the test | Dr.Aisha Butt |

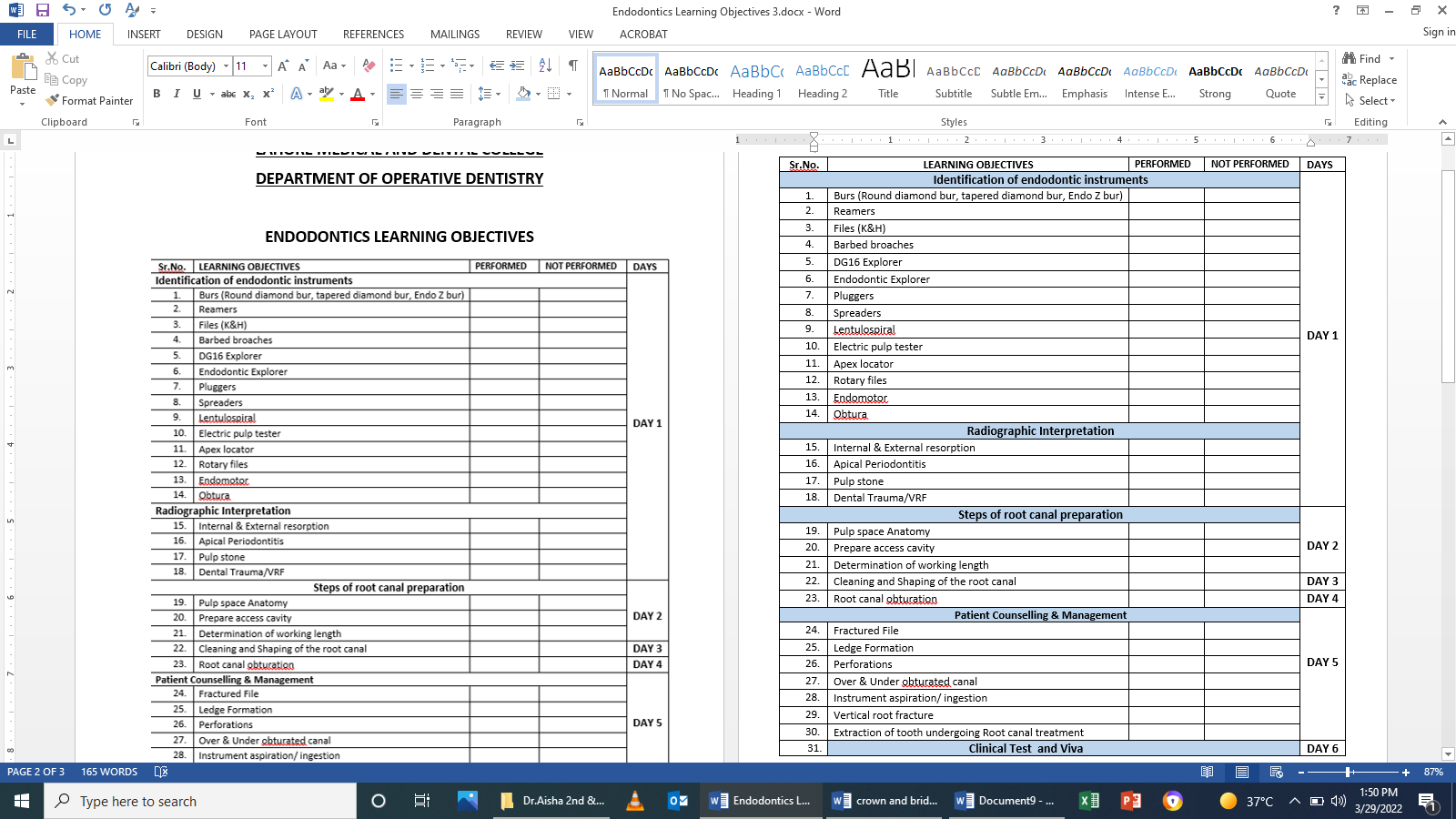
**Lectures & Test schedule for final year**

|  |  |  |
| --- | --- | --- |
| **Day/Date** | **Topic** | **Faculty** |
| **28.3.22Mon** | **Introduction to Operative Dentistry** | **Dr.Saima** |
| **30.3.22 Wed** | **Clinical significance of Dental Anatomy, Histology, Physiology & Occlusion** | **Dr.Saima** |
| **31.3.22 Thurs** | **Dental caries: Etiology. Clinical Characteristics, Risk Assessment & Management** | **Dr.Saima** |
| **4.4.22 Mon** | **Introduction to Endodontics** | **Dr.Anam** |
| **6.4.22 Wed** | **Dental caries: Etiology. Clinical Characteristics, Risk Assessment & Management** | **Dr.Saima** |
| **7.4.22 Thurs** | **Infection Control** | **Dr.Saima** |
| **11.4.22 Mon** | **Pathogenesis of Pulp & Periapical Diseases** | **Dr.Anam** |
| **13.4.22 Wed** | **Instruments & Equipment for Tooth Preparation** | **Dr.Saima** |
| **14.4.22 Thurs** | **Preliminary considerations for Operative Dentistry** | **Dr.Saima** |
| **18.4.22Mon** | **Pathogenesis of Pulp & Periapical Diseases** | **Dr.Anam** |
| **20.4.22 Wed** | **Dentin Hypersensitivity** | **Dr.Saima** |
| **21.4.22 Thurs** | **Periodontology Applied to Operative Dentistry** | **Dr.Saima** |
| **25.4.22 Mon** | **Endodontics Diagnosis & Treatment Planning** | **Dr.Anam** |
| **27.4.22Wed** | **Fundamentals of tooth preparation & Pulp protection** | **Dr.Saima** |
| **28.4.22Thurs** | **Fundamentals of tooth preparation & Pulp protection** | **Dr.Saima** |
| **2.5.22 Mon** | **Introduction to Silver Amalgam** | **Dr.Saima** |
|  | **3 to 5th May (Eid Holidays)** |  |
| **9.5.22 Mon** | **Introduction to Silver Amalgam** | **Dr.Saima** |
| **11.5.22 Wed** | **Endodontics Diagnosis & Treatment Planning** | **Dr.Anam** |
| **12.5.22 Thurs** | **Differential Diagnosis of non-pulpal origin** | **Dr.Anam** |
| **16.5.22 Mon** | **CLASS TEST 1** |  |
| **18.5.22Wed** | **Endodontics Instruments** | **Dr.Anam** |
| **19.5.22 Thurs** | **Pulp Space Anatomy** | **Dr.Anam**  **.** |
| **23.5.22 Mon** | **Clinical technique for Amalgam restorations** | **Dr.Saima** |
| **25.5.22 Wed** | **Access Cavities** | **Dr.Anam** |
| **26.5.22 Thurs** | **Cleaning & Shaping** | **Dr.Anam** |
| **30.5.22 Mon** | **Clinical technique for Amalgam restorations** | **Dr.Saima** |
| **1.6.22 Wed** | **Complex Amalgam** | **Dr.Saima** |
| **2.6.22Thurs** | **Fundamental Concepts of Enamel & Dentin Adhesion** | **Dr.Saima** |
| **6.6.22 Mon** | **Cleaning & Shaping** | **Dr.Anam** |
| **8.6.22 Wed** | **Introduction to Composite Resins** | **Dr.Saima** |
| **9.6.22 Thurs** | **Color & Shade Matching in Restorative Dentistry** | **Dr.Saima** |
| **13.6.22Mon** | **Endodontic Irrigants** | **Dr.Anam** |
| **15.6.22 Wed** | **Light Curing of Restorative Materials** | **Dr.Saima** |
| **16.6.22Thurs** | **Clinical Technique for Direct Composite Resin (Pits& Fissure Sealants & PRR)** | **Dr.Saima** |
| **20.6.22 Mon** | **CLASS TEST 2** |  |
| **22.6.22Wed** | **Clinical Technique for Direct Composite Resin (Class I Composite Restoration)** | **Dr.Saima** |
| **23.6.22 Thurs** | **Clinical Technique for Direct Composite Resin (Class II Composite Restoration)** | **Dr.Saima** |
| **27.6.22 Mon** | **Intracanal Medicaments** | **Dr.Anam** |
| **29.6.22Wed** | **Clinical Technique for Glass ionomer Restoration & Direct Composite Resin**  **(Class III & IV Composite Restoration)** | **Dr.Saima** |
| **30.6.22 Thurs** | **Clinical Technique for Glass ionomer Restoration & Direct Composite Resin**  **(Class III & IV Composite Restoration)** | **Dr.Saima** |
| **4.7.22Mon** | **Additional Conservative Esthetic Procedures** | **Dr.Saima** |
| **6.7.22Wed** | **Introduction to Crown& Bridge, Indications of Crown** | **Dr.Moeen** |
| **7.7.22Thurs** | **Obturation** | **Dr.Anam** |
|  | **10 to 12 July EID HOLIDAYS** |  |
| **13.7.22Wed** | **Obturation** | **Dr.Anam** |
| **14.7.22Thurs** | **General Principles of Crown Preparation** | **Dr.Moeen** |
| **18.7.22Mon** | **CLASS TEST 3** |  |
| **20.7.21Wed** | **General Principles of Crown Preparation** | **Dr.Moeen** |
| **21.7.22 Thurs** | **Procedural Accidents** | **Dr.Anam** |
| **25.7.22Mon** | **Types of Crowns , Porcelain Jacket Crown** | **Dr.Moeen** |
| **27.7.22Wed** | **Endodontic Emergencies& Flare ups** | **Dr.Anam** |
| **28.7.22Thurs** | **Non Surgical Retreatment** | **Dr.Anam** |
| **1.8.22Mon** | **Endodontic Surgery** | **Dr.Anam** |
| **3.8.22Wed** | **Additional Conservative Esthetic Procedures** | **Dr.Saima** |
| **4.8.22Thurs** | **Porcelain fused to Metal Crown** | **Dr.Moeen** |
|  | **7 to 8th August ASHURA** |  |
| **10.8.22Wed** | **Metal Crown** | **Dr.Moeen** |
| **11.8.22Thurs** | **Non Carious Lesions &Their Management** | **Dr.Saima** |
| **15.8.22 Mon** | **CLASS TEST 4** |  |
| **17.8.22Wed** | **Partial Veneer Crown** | **Dr.Moeen** |
| **18.8.22Thurs** | **Endodontic Surgery** | **Dr.Anam** |
| **22.8.22Mon** | **Post & Core** | **Dr.Moeen** |
| **24.8.22Wed** | **Endo Perio Interrelationship** | **Dr.Anam** |
| **25.8.22Thurs** | **Dental Trauma** | **Dr. Anam** |
| **29.8.22Mon** | **Dental Trauma** | **Dr.Anam** |
| **31.8.22Wed** | **Post & Core** | **Dr.Moeen** |
| **1.9.22Thurs** | **Tooth Resorption** | **Dr.Anam** |
| **5.9.22Mon** | **Tooth Fractures** | **Dr.Anam** |
| **7.9.22Wed** | **Introduction, Rationale, Objectives & Future of Paedodontics** | **Dr.Saima** |
| **8.9.22Thurs** | **Impression Material & Techniques** | **Dr.Moeen** |
| **12.9.22Mon** | **Occlusal Record &Temporary crown** | **Dr.Moeen** |
| **14.9.22Wed** | **Management of Child Behavior** | **Dr.Saima** |
| **15.9.22Thurs** | **Management of Pain and Anxiety** | **Dr.Saima** |
| **19.9.22Mon** | **CLASS TEST 5** |  |
| **21.9.22Wed** | **Try in & Cementation** | **Dr.Moeen** |
| **22.9.22Thurs** | **Prenatal Counselling, Diagnosis & Treatment Planning, Medical Conditions Specific to Children** | **Dr.Saima** |
| **26.9.22Mon** | **Dental Caries, Rampant Caries, Nursing Bottle Caries** | **Dr.Saima** |
| **28.9.22Wed** | **Dental Caries, Rampant Caries, Nursing Bottle Caries** | **Dr.Anam** |
| **29.9.22 Thurs** | **Types & Indications of Bridges** | **Dr.Moeen** |
| **3.10.22Mon** | **Abutment Selection** | **Dr.Moeen** |
| **5.10.22Wed** | **Pit & Fissure Sealants** | **Dr.Saima** |
| **6.10.22Thurs** | **Fluoride & its Role into Development, Dietary Management & Dietary Counseling** | **Dr.Saima** |
| **10.10.22Mon** | **Restorative Dentistry for Primary Dentition / Modification of Cavity Preparation in Paedodontics / Restorative Materials in Paedodontics** | **Dr.Saima** |
| **12.10.22Wed** | **Pontic Design & Selection** | **Dr.Moeen** |
| **13.10.22Thurs** | **Pulp Capping, Pulp Therapy for Primary Teeth / Radiology -Pulpotomy -Pulpectomy** | **Dr.Saima** |
| **17.10.22Mon** | **CLASS TEST 6** |  |
| **19.10.22 Wed** | **Stainless Steel Crowns** | **Dr.Saima** |
| **20.10.22Thurs** | **Retainer & Connector Selection** | **Dr.Moeen** |
| **24.10.22Mon** | **Types of Inlays (Metal)** | **Dr.Moeen** |
| **26.10.22 Wed** | **Trauma & Injury to primary teeth** | **Dr.Saima** |
| **27.10.22Thurs** | **Trauma & Injury to primary teeth** | **Dr.Saima** |
| **31.10.22 Mon** | **Endodontic Management of Immature Root Apex -Apexification & Apexogensis** | **Dr.Saima** |
| **2.11.22Wed** | **Types of Inlays (Tooth Colored)** | **Dr.Moeen** |
| **3.11.22Thurs** | **Management of Handicapped Children, Hereditary Disorders & Development Anomalies** | **Dr.Saima** |
| **7.11.22Mon** | **Restorative Revision Lecture** | **Dr.Saima** |
| **9.11.22 Wed** | **Endodontics Revision Lecture** | **Dr Anam** |
| **10.11.22Thurs** | **Resin Bonded Bridges** | **Dr.Moeen** |
| **14.11.22Mon** | **Resin Bonded Bridges** | **Dr.Moeen** |
| **16.11.22Wed** | **Restorative Revision Lecture** | **Dr.Saima** |
| **17.11.22Thurs** | **Endodontic Revision Lecture** | **Dr.Anam** |
| **21.11.22Mon** | **CLASS TEST 7** |  |
| **23.11.22 Wed** | **Post – Operative care & Reason for Failure** | **Dr.Moeen** |
| **24.11.22Thurs** | **Restorative Revision Lecture** | **Dr.Saima** |
| **28.11.22 Mon** | **Restorative Revision Lecture** | **Dr.Saima** |
| **30.11.22 Wed** | **Restorative Revision Lecture** | **Dr.Saima** |
| **1.12.22 Thurs** | **Crown & Bridge Revision Lecture** | **Dr.Moeen** |
| **5.12.2 Mon** | **Crown & Bridge Revision Lecture** | **Dr.Moeen** |
| **7.12.22 Wed** | **Restorative Revision Lecture** | **Dr.Saima** |
| **8.12.22 Thurs** | **Restorative Revision Lecture** | **Dr.Saima** |
| **12.12.22 Mon** | **Restorative Revision Lecture** | **Dr.Saima** |
| **14.12.22 Wed** | **Crown & Bridge Revision Lecture** | **Dr.Moeen** |
| **15.12.22 Thurs** | **Restorative Revision Lecture** | **Dr.Saima** |

**LEARNING OBJECTIVES FOR FINAL YEAR**

**RESTORATIVE**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Learning Objectives** | **Observed** | **Performed** | **Assisted** | **Days** |
|  | History taking & informed consent |  |  |  | 01 |
|  | Clinical examination |  |  |  |
|  | Radiographic interpretation |  |  |  |
|  | Diagnosis and treatment planning for dental carious lesions |  |  |  |
| **Cross infection Protocol** | | | | | |
|  | Hand Hygiene / Hand washing technique |  |  |  | 01 |
|  | Putting on and Removing PPE (Personal Protective Equipment): Masks, Protective Eyewear, Face shields, Protective clothing, Gowns, Gloves |  |  |  |
|  | Transport of instruments to the processing area |  |  |  |
|  | Cleaning/ Washing of instruments |  |  |  |
|  | Packaging of instruments |  |  |  |
|  | Sterilization monitoring (Verification of sterility using physical, chemical, and biological indicators) |  |  |  |
|  | Sterilization of dental handpieces, burs, and other restorative materials |  |  |  |
|  | Needle stick injury prevention and immediate management |  |  |  |
|  | Disinfection of dental units |  |  |  |
| **Instruments and Materials** | | | | | |
|  | Identification of hand instruments (cutting, non-cutting) |  |  |  | 01 |
|  | Identification of powered/rotary cutting equipment |  |  |  |
|  | Hazards with cutting instruments and their prevention |  |  |  |
|  | Identification and manipulation of dental materials (Amalgam, Composite, GIC, Calcium hydroxide, Etchant, Bonding agent) |  |  |  |
|  | Amalgam waste disposal |  |  |  |
| **Rubber Dam Application** | | | | | |
|  | Patient counselling for rubber dam application |  |  |  | 01 |
|  | Anterior segment isolation |  |  |  |
|  | Premolar isolation |  |  |  |
|  | Fractured tooth isolation |  |  |  |
|  | Molar isolation |  |  |  |
|  | Single tooth isolation |  |  |  |
|  | Rubber Dam application |  |  |  |
| **Matrix System** | | | | | |
|  | Placement of tofflemire retainer according to clinical situation |  |  |  | 01 |
|  | Placement of palodent retainer according to clinical situation |  |  |  |
|  | Placement of mylar strip matrix for Anterior Composite Restoration |  |  |  |
| **Pulp Protection** | | | | | |
|  | Application of liner/ base before restoration (according to clinical situation) |  |  |  | 01 |
| **Amalgam Restorations** | | | | |  |
|  | Conservative Class I Cavity Preparation for Amalgam Restoration |  |  |  | 16 |
|  | Extensive Class I Amalgam Restoration |  |  |  |
|  | Class II Cavity Preparation for Amalgam Restoration |  |  |  |
|  | Class V Cavity Preparation for Amalgam Restoration |  |  |  |
| **Composite Restorations** | | | | | |
|  | Bonding protocol before Composite Restoration (Etch & Rinse, Self-Etch) |  |  |  | 16 |
|  | Cavity preparation and restoration for Class I Composite |  |  |  |
|  | Cavity preparation and restoration for Class II Composite |  |  |  |
|  | Cavity preparation and restoration for Class III Composite |  |  |  |
|  | Cavity preparation and restoration for Class IV Composite |  |  |  |
|  | Cavity preparation and restoration for Class V Composite |  |  |  |



**CROWN & BRIDGE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **LEARNING OBJECTIVES** | **PERFORMED** | **NOT PERFORMED** | **DAYS** |
|  | **History taking and treatment planning** | | | |
| 1. | History taking and informed consent |  |  | **1** |
| 2. | Clinical examination |  |  |
| 3. | Radiographic interpretation |  |  |
| 4. | Assess and formulate a treatment plan for Crown/Bridge |  |  |
| 5. | Evaluation and selection of abutments for a bridge |  |  |
| 6. | Communication with the patient according to the clinical scenarios |  |  |
|  | **Clinical procedures for Crown** | | |  |
| 7. | Shade matching |  |  | **3** |
| 8. | Putty index for crown preparation |  |  |
| 9. | Identification of crown cutting burs |  |  |
| 10. | Porcelain jacket crown preparation |  |  |
| 11. | Porcelain fused to metal crown preparation |  |  |
| 12. | Cast metal crown preparation |  |  |
| 13. | Tissue management and impression making |  |  |
|  | **Restoration of endodontically treated tooth** | | |  |
| 14. | Identification and selection of post |  |  | **1** |
| 15. | Preparation for post |  |  |
| 16. | Cementation of post |  |  |
|  | **Lab procedures for metal ceramic crown** | | |  |
| 17. | Wax up |  |  | **1** |
| 18. | Investment |  |  |
| 19. | Casting |  |  |
| 20. | Porcelain layering and baking |  |  |
|  | **Steps in placement of Crown** | | |  |
| 21. | Temporization |  |  | **1** |
| 22. | Identification of temporary crown/bridge |  |  |
| 23. | Try-in and cementation of crown |  |  |
|  | **Bridges** | | |  |
| 24. | Identification of components of a bridge |  |  | **1** |
| 25. | Identification of resin bonded bridge |  |  |
| 26. | Selection of bridge design |  |  |
| 27. | **Clinical Test and Viva** | | | **1** |

**PAEDODONTICS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr.#** | **Learning Objectives** | **Observed** | **Performed** | **Assisted** | **Days** |
| 1. | Clinical Examination |  |  |  | 1 |
| 2. | Diagnosis & treatment planning for dental carious lesions |  |  |  |
| **Instruments & Materials** | | | | |
| 3. | Stainless Crowns Kits parts& use |  |  |  |
| **Pulp Protection** | | | | | |
| 4. | Pulpotomy/ Pulpectomy Technique |  |  |  | 1 |
| 5. | Behavior management |  |  |  |

**CLINICAL DUTIES AND REQUIREMENTS:**

* Each student will spend a total of weeks (weeks in final year) in the Department of Operative dentistry during his / her 3rd and 4th year BDS
* Each student will be required to:
* **Second Year BDS**
* **Restorative Clinical Exercises**

|  |  |  |
| --- | --- | --- |
| **S. No** | **Pre-Clinical Performance** | **No. of Practices** |
| 1 | Amalgam Class I | 08 |
| 2 | Amalgam Class II | 08 |
| 3 | Amalgam Class V | 04 |
| 4 | Supervision Exercises | 03 |
| 5 | Poster Presentation | 01 |

* **Third Year BDS**
* **Restorative Clinical Exercises**

|  |  |  |
| --- | --- | --- |
| **S. No** | **Pre-Clinical Performance** | **No. of Practices** |
| 1 | Amalgam Class I | 04 |
| 2 | Amalgam Class II | 04 |
| 3 | Composite Class I | 02 |
| 4 | Composite Class II | 02 |
| 5 | Observation Exercises | 08 |

**FINAL YEAR BDS**

**CLINICAL QUOTA**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr.No.** | **Subject** | **Exercise** |  |
| 1 | Restorative | Amalgam Restorations | 15 |
| Composite Restorations | 15 |
| 2 | Endodontics | Access Cavity (Molar) | 1 |
| Canal Preparation (Cleaning & Shaping) | 1 |
| Obturation | 1 |
| 3 | Crown & Bridge | Porcelain Jacket Crown Preparation | 1 |
| Porcelain Fused to Metal Crown Preparation | 1 |
| Metal Crown Preparation | 1 |
| Post& Core build up | 1 |
| Temporization (chair side) | 1 |
| 4 | Paedodontics | Behavior Management Session | 1 |
| Pulpotomy/Pulpectomy | 1 |

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| --- | --- | --- | --- | --- |
| **Duration** | **Restorative** | **Endodontics** | **Crown& Bridge** | **Paedodontics** |
| **35 days (5weeks)** | **6 days** | **9 days** | **5 days** |

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| --- | --- | --- | --- |
| **BATCH D**  **(28thMar-5th Jun)** | **BATCH C**  **(6th Jun-14th Aug)** | **BATCH B**  **(15th Aug-23rd Oct)** | **BATCH A**  **(24th Oct-31st Dec)** |
| **Restorative** | | | |
| 28th Mar-6th May | 6th Jun-14th July | 15th Aug-23rd Sep | 24th Oct-25th Nov |
| **Endodontics** | | | |
| 9th May-16th May | 15th July-22nd July | 26th Sep-3rd Oct | 28th Nov-5th Dec |
| **Crown & Bridge** | | | |
| 17th May-27th May | 25th July-4th Aug | 4th Oct-14th Oct | 6th Dec-16th Dec |
| **Paedodontics** | | | |
| 30th May-3rd June | 5th Aug-12th Aug | 17th Oct-21st Oct | 19th Dec-23rd Dec |

Record of this clinical work will be maintained in the Pre-clinical and **Clinical Manual Book**

**PRESENTATIONS TOPICS FOR FINAL YEAR BDS**

**EVERY FRIDAY**

|  |  |
| --- | --- |
| **Sr.no** | **Topic** |
|  | Liner & Bases, Pulp capping (direct & indirect) |
|  | Preventive resin restoration & Fissure sealants |
|  | Finishing &Polishing of amalgam |
|  | Types of bevel & retention of composite |
|  | Types of Ca(oH)2 & mechanism of action(setting reaction) |
|  | Types of GICs & mechanism of action(setting reaction) |
|  | Different Phases of Amalgam & Setting reaction, Delayed expansion of amalgam |
|  | Finishing &Polishing of composites |
|  | Caries risk assessment |
|  | Principles of cavity preparation |
|  | Types of retainers(matrices) |
|  | Class II amalgam cavity design |
|  | Composition of different types of composites |
|  | Micro leakage composites / amalgam |
|  | Enamel adhesion |
|  | Dentine adhesion & classification of dentinal adhesives |
|  | Wet bonding / Dry bonding |
|  | Common problems in composites restoration |
|  | Dentine Hypersenstivity |

**INSTRUCTIONS**

**“ALL STUDENTS MUST FOLLOW THE STANDARD PROTOCOL REGARDING CROSS INFECTION CONTROL IN THE CLINICS”**

* Students should wear lab coats with neat dress.
* Students should follow the instructions from the teaching faculty.
* Students should reportto the lab/clinics as per the scheduled time and should attend only in their respective groups.
* Students should keep their working table clean and do not damage any parts of the table. If any damage occurs, the particular student is responsible for the replacement of the damaged parts.
* Student should always maintain silence in the lab/clinics.
* Student should not leave any of their belonging after their session and if anything is lost, the college and the staff is not responsible.
* Attendance is compulsory. If anybody has shortage of attendance, appropriate action will be taken according to the college rules and regulations.
* Demonstrations will not be repeated for absent student regardless of reason of absence

**POLICY FOR MARKING ATTENDANCE**

1. Present will be mark for those who will come sharp on time
2. Arrival after 10 minutes will be considered absent
3. Arrival within 10 minutes will be consider late

**EVALUATION**

* **Internal Assessment**
* Will be based upon written test, clinical tests, presentations, and hands on exercises & assignments and no of credits**.**
* **Written Tests** will be conducted either at the end or in the mid of each course. Tests will consist of multiple choice questions (MCQs) and short essay questions (SEQs). Summative and formative assessment will be done. Students should discuss their papers with the course director after the display of the result. Also opportunity will be provided in the class room for full strength.
* **Clinical Test** will be held for each student during the 5th week of duty in the Operative Department during both 3rd and 4th year BDS duties. This clinical test will be repeated at the last week of the duty. Every clinical test will be followed by formative / feedback assessment session. Every student will perform one filling and will appear in chair side viva. Grading will be based on viva / oral examination, chair-side manners, cross infection control (aseptic technique), operator and patient positioning and clinical technique / proficiency, History, diagnosis and treatment planning

Results with feedback will be posted immediately after the clinical test.

**Recommended Books:**

1. Sturdevant’s Art and Science of Operative Dentistry:vTheodore M. Roberson, Herald O. Heymann, Edward J. Swift. (latest edition)
2. Summitt’s Fundamentals of Operative Dentistry- A Contemporary Approach (latest edition)
3. Endodontics: Principles and practice by Torabinjad. Richard E Walton, Mahmoud Torabinjad. (latest edition)
4. T.R Pitt Ford, FJ. Harty: Hartysendodontics in clinical practice. (latest edition)
5. Contemporary fixed prosthodontics by Stephan R. Rosenthal, Latest edition.
6. Schilingburg et al. Fundamentals of fixed prosthodontics, Latest edition.
7. Inlays, Crowns & Bridges by George Kantorowicz, Latest edition.
8. Smith BGN. Planning and making crowns and bridges, latest edition.
9. McDonald and Avery’s Dentistry for the Child and Adolescent
10. Pediatric Dentistry-Infancy to Adolescent by Pinkham, Casamassimo
11. Handbook of Pediatric Dentistry by Angus C Cameron, Richard P Widmer
12. Paediatric Dentistry by Richard R. Welbury

**TEACHING HOUR DISTRIBUTION**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **THEORY** | **%WEIGHTAGE**  **SEQ**  **15** | **%WEIGHTAGE**  **MCQ’S**  **45** | **CUMULATIVE**  **WEIGHTAGE**  **UHS (TOS)** | **LECTURE DISTRIBUTION ACCORDING TO UHS**  TOTAL LECTURES (108) IN 09 MONTHS | **CHANGES MADE AFTER FACULTY DELIBERATION** |
| Restorative | 08=53.3 | 18=40 | 47% | 51 | 41 |
| Crown & Bridge | 03=20 | 11=24.4 | 22.5% | 24 | 24 |
| Endodontics | 02=13.3 | 12=26.6 | 20% | 22 | 26 |
| Paedodontics | 02=13.3 | 04=08.8 | 10.5% | 11 | 19 |
| Total | 15=100% | 45=100% | 100% | 108 | 110 |

\*Lecture taken by the faculty 110 year 2022-23

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **THEORY** | **WEIGHTAGE**  **UHS (TOS)** | **PRACTICAL DISTRIBUTION** | **PRACTICAL DAYS DISTRIBUTION**  **(AS PER UHS TOS)** | **PRACTICAL DAYS ALLOCATED**  **(AFTER FACULTY DELIBERATION)** |
| **Restorative** | 47% | 118 hours | 5.1 weeks = 26 working days | 26+5+3=38days |
| **Crown & Bridge** | 22.5% | 56 hours | 2.4 weeks= 13 working days | 13-4=9days |
| **Endodontics** | 22% | 50 hours | 2.17= 11 working days | 11-5=6days |
| **Paedodontics** | 10.5% | 26 hours | 1.13=05 working days | 02 |
| **Total** | **100%** | **250 hours** | **249** | **55** |