



**ALTAMASH INSTITUTE OF DENTAL MEDICINE
(JINNAH SINDH MEDICAL UNIVERSITY)**

**BDS Second Year
Junior Operatives
Study Guide**

Introduction

This course is designed to impart basic theoretical knowledge and initial practical skills to the students that will subsequently be required in the clinical specialty of Operative Dentistry and Endodontics. The theoretical component of the course will be disseminated through lectures, while the basic clinical procedures will be taught through demonstration and hands-on practice on phantom heads in the dental skills lab. The rationale of this course is to introduce the students to the basic theoretical and procedural skills in a simulated environment, which would provide the basis and be supplemented in subsequent years with gradual implementation of the skills learned in this course to actual clinical situations.

Outcome:

By the end of this course, students should be able perform basic procedural skills pertinent to operative dentistry in a simulated environment

Teaching and learning:

1. Interactive lectures (IL)
2. Phantom head Demonstrations (PD)
3. Tutorials
 - a. Case Based Discussion (CBD)
 - b. Small Group Discussion (SGD)

Assessment tools:

1. Multiple Choice Questions: (MCQs)
 - One Correct Type
 - One Best Type
2. Observed Structured Practical Examination (OSPE)

s.n o.	Topic	Course Objectives: By the end of the course, 2 nd year students will be able to:	Teaching method	Assessment Tool
1	Introduction To Operative Dentistry And Biologic Considerations	• Define Operative Dentistry. • Discuss chemical composition, structure and properties of enamel, dentin, pulp, cementum and gingiva. • Discuss morphologic and histologic structure of	IL	MCQ



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		tooth tissues with their clinical impact on restorations. Discuss the importance of dentogingival complex and biologic width when planning restorations		
2	Dental Caries – Etiology, Clinical Features And Preventions	- Define different types of caries based on location, spread, extent, rate etc. - Classify dental caries based on site, size, location etc. - Explain the factors responsible for caries development. - Identify clinical features of different types of caries on clinical pictures. - Describe the various methods of caries control.	IL CBD	MCQ SAQs
3	Isolation	- Describe the advantages of isolation in operative dentistry. - Describe the different methods of isolation. - Identify all the armamentarium required for rubber dam isolation.	IL PD	SAQs
4	Cross Infection Control	- Define cross infection. - Explain the exposure risks in dentistry, including COVID-19 - Discuss different methods of cross infection control in dental office. - List universal/ standard precautions for cross infection control - Describe blood borne infections - Describe methods of hand hygiene - Discuss vaccination/ immunization of dental health care professionals - Discuss elements of personal protective equipment (PPE) - Describe how to prevent needle stick injury - Explain needle stick injury management - Discuss dental waste disposal - Discuss management of dental sharps	IL SGD	MCQ SAQ
5	Sterilization And Disinfection	- Differentiate among Sterilization, Disinfection and Asepsis. - Explain the importance of sterilization and	IL	MCQ



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		disinfection. • Discuss elements of a sterilization plan. • Describe various methods used for sterilization and methods to monitor effectiveness of sterilization. • List chemicals that are used for disinfection. • Describe techniques for sterilization and disinfection of endodontic instruments. • List critical, semi critical and non-critical items • Discuss disinfection of dental unit waterlines	SGD	SAQ
6	Instruments	• Describe the terminologies used to describe hand instruments. • Classify hand instruments.	SGD	MCQ
7	Matrix Band	• Identify the different types of matrix bands, retainers, and wedges (Tofflemire, sectional) • Describe the importance of using matrix bands and wedges during restoration placement.	SGD PD	SAQ
8	Cavity Preparation	• Identify the objectives of tooth preparation. • Differentiate tooth preparation features for amalgam and composite restorations. • Describe various tooth preparation terminologies, walls, angles and margins. • Classify various tooth preparations. • Describe the initial and final stages of tooth preparation. • Describe the materials that can be used as liners and bases for different clinical scenarios • Describe the clinical scenarios where liners and bases should be applied.	IL SGD CBD	SAQ
9	Amalgam (Placement, Carving, Finishing, Disposal)	Identify the indications of amalgam restoration.	IL	MCQ SAQ
10	Composite (Placement, Finishing, Polishing)	Identify the indications of composite restorations.	IL	MCQ SAQ
11	Pits And Fissure Sealants	Discuss the indications, types and method of placement of pit and fissure sealants.	IL PD	MCQ SAQ



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	Procedural Skills		Teaching method	Assessment Tool
1	Dental Unit	- Identify all parts of a dental unit. - Describe the use of different parts of the dental unit. - Demonstrate correct operation of different parts of dental unit. - Perform accurate placement of different attachments (high speed, slow speed handpieces) to the dental unit	SGD	MCQ OSPE
2	Isolation	- Perform rubber dam isolation on phantom head for both anterior and posterior teeth demonstrating all steps accurately. - Perform rubber dam isolation on phantom head using different techniques accurately (dam over clamp, clamp over dam, dam and clamp simultaneously)	PD	OSPE
3	Patient And Operator Positioning	- Describe the importance of correct patient and operator positioning during operative procedures. - Demonstrate the correct patient and operator position on phantom heads for working on different quadrants/teeth.	SGD PD	MCQ OSPE
4	Instruments In Operative Dentistry	- Demonstrate the accurate techniques of grasping hand instruments. - Identify the different types of dental burs based on their shape. - Identify the parts of high speed and slow speed handpieces. - List the precautions to be undertaken while using rotary instruments. - Demonstrate the accurate handling of high speed and slow speed handpieces on plastic teeth.	SGD PD	MCQ SAQ
5	Matrix Bands	Demonstrate the correct technique of contouring, placement and removal of commonly used matrix systems (Toefflemire, sectional matrices) and wedges on phantom head for anterior and posterior teeth.	PD	OSPE



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6	Cavity Preparation	Demonstrate accurately the principles of tooth preparation for anterior and posterior cavities on phantom/ extracted teeth	PD	OSPE
7	Liners And Bases	Demonstrate correct technique for placement of different liners (Calcium hydroxide, GIC), and bases in cavities prepared on phantom/ extracted teeth.	PD	OSPE
8	Amalgam	• Demonstrate trituration, placement, carving, finishing, and polishing of amalgam restoration on phantom/ extracted teeth. • Demonstrate handling and disposal of mercury waste	PD	OSPE
9	Composite	Demonstrate the correct placement, curing, finishing and polishing of composite restoration on phantom/ extracted teeth.	PD	OSPE
10	Glass Ionomer Cement (Placement And Finishing)	Demonstrate correct technique for mixing, placement and finishing of GIC and RMGIC restoration (class V) on phantom/ extracted teeth	PD	OSPE

Reading Sources:

Text Book: Applied Dental Materials by John F McCabe. 10th edition.

Art and science of dental materials by Sturdevant. 10th edition

Fundamentals of Operative dentistry. Summit. 9th edition.

Phantom Head Lab: used for realistically simulating all types of dental treatment as well as ergonomic working or first aid procedures but without a real patient having to be present.

Internet resources: With easy excess to digital library students will use internet resources with added time flexibility to enrich and update their knowledge and its application.

Library: It provides wealth of resources, space to study alone or in a group. It also provide world of books to discover and borrow.



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Assessment Criteria:

Knowledge:

- MCQs (Multiple Choice Questions) are used to assess objectives covered in each module.
- A MCQ has a statement or clinical scenario followed by four options (likely answer).
- Students after reading the statement/scenario select ONE, the most appropriate response from the given list of options.
- Correct answer carries one mark, and incorrect 'zero mark'. There is no negative marking.
- Students mark their responses on an answer sheet provided by examination department.

Skills:

- OSPE: Objective Structured Practical Examination:
- Each student will be assessed on the same content and have same time to complete the task.
- Comprise of 12-25 stations.
- Each station may assess a practical tasks include practical skills and application of knowledge
- Stations are observed, interactive, application of knowledge based and rest.
- In Observed and Interactive Stations these will be assessed by internal or external examiners through structured viva or a task.
- Application of knowledge Stations: it will be static stations in which there will be pictures, clinical scenarios with related questions for students to answer on the provided answer copy.
- Rests: It is a station where there is no task given and in this time student can organize his/her thoughts.

AIDM Internal Assessment Policy

Students will be assessed to determine achievement of learning objectives with the subject of Dental Materials through the following:

- Midterm Examination will be scheduled on completion of half of the course
- Mock Examination will be scheduled on completion of whole course
- The method of examination comprises theory exam which includes MCQs, and practical examination by OSPE (Objective Structured Practical Examination).
- Student's behaviors and attitudes will be observed during all academic activities.



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Annual Examination:

Content of this course will be assessed in final professional examination through OSCEs and MCQs.

Course Evaluation:

- Pass/fail ratio of continuous assessments will be evaluated.
- 75% attendance is mandatory to be eligible for annual professional examination
- Feedback will be taken
 - Regarding course from students and faculty
 - Student feedback regarding faculty
 - Faculty feedback of students

Course Faculty:

- Dr Rafia Ruaaz (Assistant Professor)
- Dr Lareb Khattak (Demonstrator)
- Dr Shareel Khan (Demonstrator)

For queries:

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