



Dental Materials Sciences



GUIDE BOOK

2022-2023

BY

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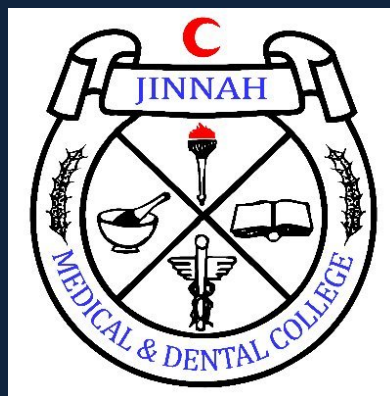


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VISION

To set local and global standards for quality patient outcomes – creating a culture of excellence to promote a transformative experience for the 21st century clinicians, educators and researchers to benefit all humanity.

MISSION

We are committed to develop well-rounded academicians, thinkers, clinicians and researchers by strengthening a global view, broadening intellectual foundation and teaching effective communication. It is our aspiration to cultivate creative and critical thinking skills for problem solving, sensitive to cultural and ethical values and responsibilities. Our graduates will be role models and leaders for society.

VALUES

- Equity
- Quality
- Compassionate Behavior
- Social Accountability
- Social Justice
- Humanistic Approach
- Leadership
- Innovation
- Integrity
- Collaboration

DEPARTMENT OF DENTAL MATERIALS SCIENCES

INTRODUCTION

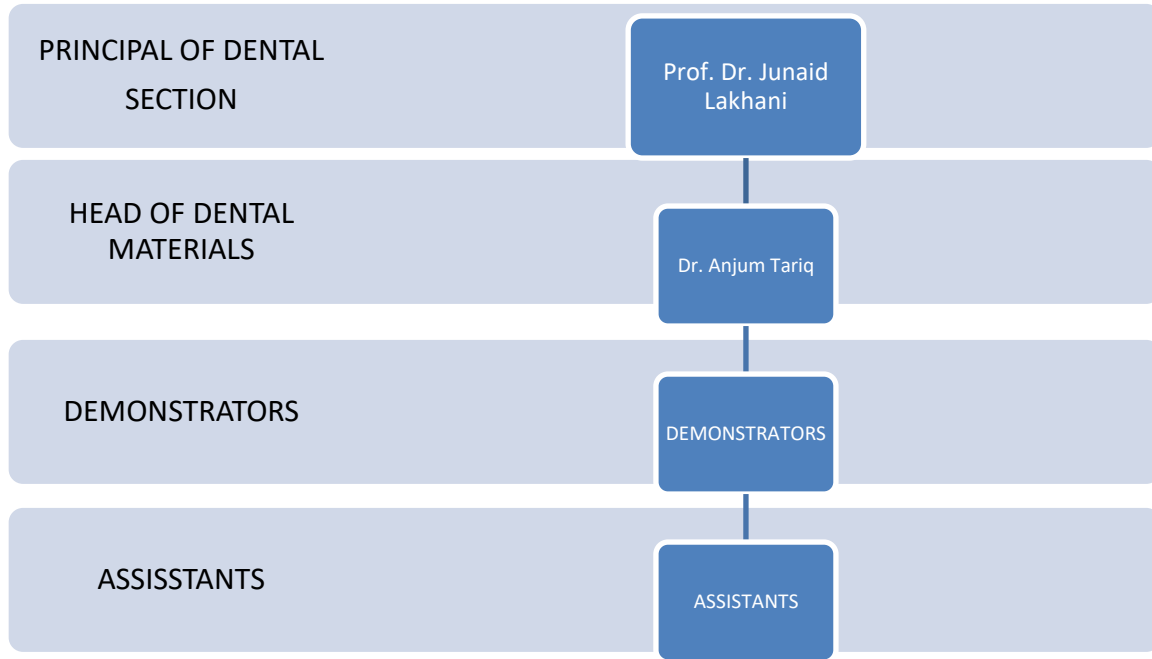
The science of dental materials involves the study of the composition and properties of materials and how they interact with the environment in which they are placed. Laboratory tests to evaluate materials and predict what may happen in the mouth over several months or years. Many factors must be taken into account when considering which properties are relevant to the successful performance of a material used in dentistry. The situation in which the material is to be used and the recommended technique for its manipulation define the properties which characterize the material.

Dental materials science is advancing day by day with the research and development of new materials and technology. Though many materials have been in use, new materials are being developed giving more importance to long-lasting service and esthetics. In addition, attention towards the biological compatibility of the materials locally or systematically is being extensively investigated. The performance of dental materials in the oral environment is one of the factors influencing the quality of dental treatment. Therefore, knowledge of chemical makeup, properties, and handling of the materials is a must for the dental practitioner to obtain optimum results.

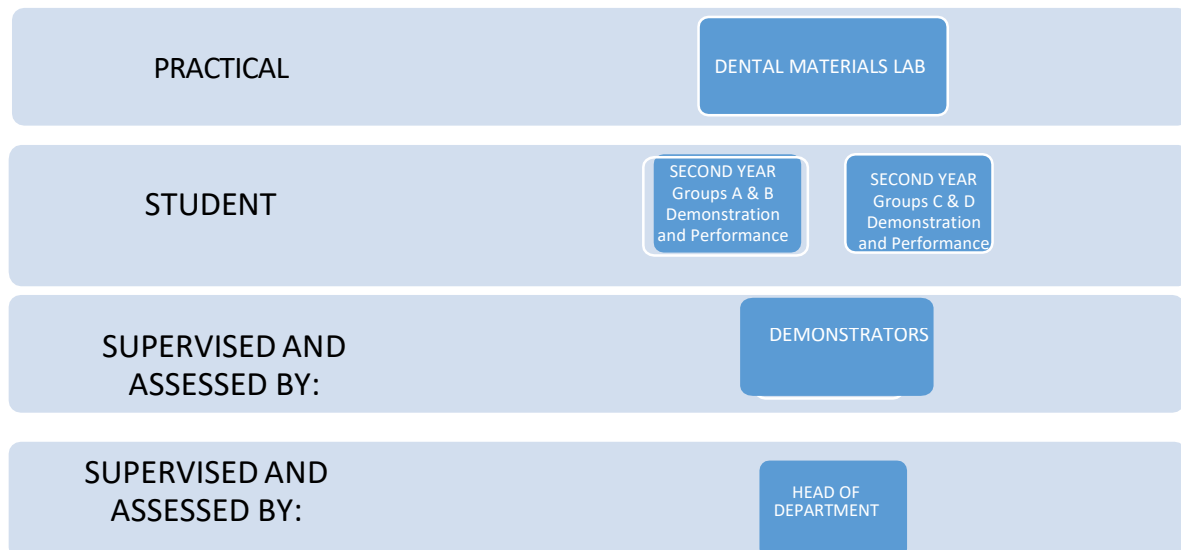
The dentist spends much of his professional career handling materials, success or failure of many forms of treatment depends upon the correct selection of materials possessing adequate properties, combined with careful manipulation. The selection of materials for any given application can thus be undertaken with confidence and sound judgment.

The subject of the science of dental materials at the undergraduate level enables the students to recognize the clinical, technical, and scientific rationale for materials in clinical dental practice. The course curriculum is designed to introduce dental materials science to students and facilitate their study of mechanical, physical, and chemical properties related to the selection of these products by the dentist to identify characteristics of materials that affect their biological safety. The practical component of the course involves a hands-on experience of the materials and their manipulation in the laboratory

DEPARTMENT HIERARCHY:



DEPARTMENT TO STUDENT COMMUNICATION:



LEARNING OUTCOMES:

FOR A SECOND YEAR STUDENT:

By the end of lectures of Dental Material Sciences, the student should be able to:

1. Explain the science of dental materials.
2. Describe the selection criteria of dental materials.
3. Classify dental materials. (Based on basic classification of dental materials i.e. metals, ceramics, polymers and Composites).
4. Describe the properties used to characterize dental materials. (Mechanical, physical, thermal, electrical, chemical, rheological and optical properties of dental materials).
5. Classify various gypsum products. (Classification based on their production and uses).
6. Explain chemical and technical aspects, desirable properties and behaviors of gypsum products. (A replicating material- impression and casting).
7. Classify impression materials. (Classifications based on their use, behavior under pressure and setting characteristics).
8. Relate the effects of variable mixing ratio, mixing techniques and environmental conditions to the accuracy of impression.
9. Select the most appropriate impression material for patients presenting with different anatomical variations.
10. Classify dental waxes. (Classification based on their origin, and uses)
11. Identify waxes used in dentistry for different purposes, and how to manipulate them for the intended procedure.
12. Relate the influence of variable environmental factors to the properties of dental waxes.
13. Select investment materials according to the type of casting. (Nobel metal alloys, Base metal alloys and dental porcelain).
14. Describe the structure of matter and types of bonding exhibited among different states of matter.
15. Explain the principles of adhesion to achieve bonding between tooth structure and adhesive restorative material.
16. Relate the principles of adhesion to the involved tooth surface, and interaction of dental materials in the biological environment.

17. Describe the different types of cements used in dentistry for different purposes.
18. Explain the composition, properties, powder liquid ratio and mixing techniques and applications of dental cements.
19. Classify restorative composites according to their historical background.
20. Explain the properties, indications, drawbacks, and clinical handling of dental composites.
21. Classify dental amalgam. (Classification based on their composition, shape and size of the particles).
22. Describe the composition, properties, handling characteristics of dental amalgam, and factors responsible for amalgam failure.
23. Describe the synthetic polymers and denture base polymers.
24. Explain the processing steps of complete denture.
25. Outline denture relining and rebasing materials, and their procedural steps.
26. Explain the classification of dental porcelain. (Classification based on their fusion temperature, composition, properties, uses, and manufacturing techniques).
27. Describe the basic concepts related to the processing and solidification of metal and alloys.
28. Classify different types of metals and alloys used in dentistry (Classification based on their nobility, composition, and uses).
29. Explain the metal casting procedures and casting defects.
30. Describe dental implants, their indications, and placement procedures.

LABORATORY PRACTICALS

By the end of practical of Dental Material Sciences, the student should be able to

1. Identify instruments and equipment required for handling and manipulation of different dental materials in laboratory
2. Identify different types of gypsum products
3. Demonstrate the correct mixing technique for gypsum products
4. Make plaster slab and plaster block
5. Identify different types of impression materials
6. Take alginate impression
7. Identify different types of dental waxes
8. Demonstrate the manipulation and application of different waxes
9. Demonstrate the correct dispensing, manipulation and application of self-cure and heat-cure dental acrylic resin.
10. Fabricate removal partial and complete denture
11. Demonstrate the correct dispensing, trituration and application of dental amalgam
12. Demonstrate the correct dispensing, mixing and application of different cements
13. Demonstrate the steps of light cure composite resin restorations
14. Make different alphabets with stainless steel wire
15. Identify different orthodontic wire used in dentistry
16. Fabricate Adams clasps, Labial bow, Z-spring and T-spring
17. Identify different endodontic materials used in dentistry
18. Demonstrate the surgical suturing materials and techniques
19. Display/ demonstrate the following:
 - Effective practical skills
 - Record keeping in log books
 - Team wok
 - Respect for senior and junior colleges, peers, dental assistants and other staff members
 - Compliance with sterilization and cross infection control protocols.
 - Compliance with the rules and regulation of the department and institution

STRATEGIES FOR TEACHING AND LEARNING:

1. Interactive Lectures (teaching large group):

The interactive lectures strategy is adapted. It comprises lecture having duration of 50 minutes, three times a week. To keep a check of assessment of student learning through lectures following techniques are utilized:

- a. Quizzes.
- b. Interactive sessions.
- c. Student engagement to stimulate critical thinking.
- d. Activities for better understanding of topics.
- e. Assignments.
- f. Presentations.

2. Practical learning:

Practical learning takes place in the practical lab of department of dental materials. In these timings second year students are engaged through:

- a. Demonstration
- b. Supervised Small group practical
- c. Hands on practical
- d. Construction of dentures
- e. Manipulation of dental materials

3. Self-directed Learning:

To complement the lectures, students are provided with videos, relatable book chapters and materials for better understanding. Along with these assignments, presentations and group activities are conducted.

4. E-Learning:

In the times of pandemic COVID-19, distance learning was incorporated in the strategies of teaching and learning.

In these challenging times an easy access has been provided to the students through E-portal. Each student has the access to the portal through their individual IDs, on which they can go through the recorded lectures and material whenever they want.

ASSESSMENT TOOLS TO EVALUATE STUDENT LEARNING:

1. In-Class Assessment:

- a. Attendance.
- b. Quizzes.
- c. Presentations.
- d. Assignments.

2. Practical Assessment:

A test is conducted in mid and end of the laboratory sessions to assess the learning of students. It is to ensure that the students develop the required proficiencies under a supervised environment.

3. Summative Assessment:

1. Mid Term examinations:

These are conducted in the mid of the academic year. It comprises the following components:

Component	Marks
BCQs	100
OSPE	50
VIVA	50
TOTAL	200

2. Pre-Professional examinations:

These are conducted at the end of the academic year before the final professional examination. It comprises the following components:

Component	Marks
BCQs	100
OSPE	50
VIVA	50
TOTAL	200

3. Professional Examinations:

At the end of the academic year, JSMU conducts the professional examination that will award the students with the Bachelors in Dental Surgery (BDS) degree.

INTERNAL EVALUATION/ CONTINUOUS ASSESMENT POLICY:

Internal Evaluation Breakup

Component	Marks distribution (%)
Assignment/Class Test/Practical Test	25
Mid-Term	35
Pre-Professional	35
Extra Efforts/ Log book	5
Total	100%

Assignments/ Test / Midterm / Pre professional

Present and Fail	25%
Pass	Actual Percentage
Absent	Zero

Professional Annual Examination:

Professional annual examinations are conducted by the University (JSMU) and comprise theory examinations and OSRE/OSCE.

Eligibility criteria for sitting in the Professional Annual Examination is as follows:

1. Minimum of **40% aggregate** marks in all the internal examinations (Mid-term, Pre-prof, Assignments and Tests)

2. Students with less than **75% overall class attendance** will not be allowed to sit in the Annual Professional examinations

3. Clinical attendance will be maintained separately. Attendance in any pre-clinical rotation which falls below **75%** must be made up by the students.

4. Students must obtain **passing marks in the end of rotation tests**. Failing to do so, students will have to sit for a re-take ward test (Only one re-take is allowed)

To be considered successful in annual professional examination the students must pass individual components of the professional examination.

This is to say that the students must pass theory and OSPE/OSCE examinations independent of each other. Failing one component will result in failing that component of the subject only.

The student will then have to appear for supplementary examination in that component of the subject.

CURRICULUM OF DENTAL MATERIALS

COURSE CONTENT TAUGHT IN SECOND YEAR

S.NO.	TOPICS	LEARNING OBJECTIVES By the end of second year BDS, the student should be able to:	MODE OF TEACHING	ASSESSMENT TOOLS The students will be assessed during class tests, mid-rotation and end-of rotation tests; mid-term and final examination through:
1.	Introduction, Selection & Evaluation of Dental Materials	<ol style="list-style-type: none"> 1. Define Dental Materials Science. 2. Identify the different materials used in dentistry. 3. Classify Dental materials. 4. Report the criteria for dental material selection and evaluation in relation to the clinical problem to be addressed. 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Lab 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. Presentations

BIOCOMPATIBILITY, BIOMECHANICS AND BIOMATERIAL TESTING

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Biocompatibility & Biological Evaluation of Materials	<ol style="list-style-type: none"> 1. Define: <ul style="list-style-type: none"> • Biocompatibility • Post-operative sensitivity • Hypersensitivity 2. Discuss: <ul style="list-style-type: none"> • Toxicity-corrosion • Influence of dental materials on biological systems • Performance of dental materials with regard to in vitro and in vivo tests and clinical trials. 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. OSPE 4. Presentations 5. Assignments

2.	Biomaterials	<ol style="list-style-type: none"> 1. Relate interaction of dental biomaterials (DBMs) with the biological system. 2. Discuss: <ul style="list-style-type: none"> • Use of DBMs in the body • Scaffolds in materials • Tooth and tissue engineering 3. Identify different biomaterials in use 		
3.	Biomechanics	<ol style="list-style-type: none"> 1. Discuss biomechanics of: <ul style="list-style-type: none"> • Dental amalgam • Metals • Ceramic • Resin based materials 		
4.	Biomaterial testing	<ol style="list-style-type: none"> 1. Discuss: <ul style="list-style-type: none"> • In vivo models • In vitro models • Three levels of testing/usage of dental biomaterials 2. List the names of biomaterial quality assurance and monitoring agencies. 3. Discuss the importance of clinical tests/randomized clinical trials (RCTs) as the gold standard in biomaterial testing. 		

PROPERTIES USED TO CHARACTERISE DENTAL MATERIALS

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Physical properties of materials	<ol style="list-style-type: none"> 1. Describe the ideal properties of dental materials. 2. Define: <ul style="list-style-type: none"> • Hue • Chroma • Value • Metamerism • Translucency • Transparency • Opalescence • Modulus of elasticity 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Lab demonstration 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. Presentations 4. OSPE 5. Assignments
2.	Mechanical properties of materials			
3.	Thermal Properties of materials			
4.	Rheological Properties of Materials			

5.	Biological Properties of Materials	<ul style="list-style-type: none"> • Elastic/plastic strain • Resilience • Toughness 		
6.	Chemical properties of Materials	<ul style="list-style-type: none"> • Ductility • Malleability • Brittleness • Hardness • Elasticity/viscoelasticity • Creep • Viscoelasticity • Percolation • Solubility • Erosion (tooth wear) • Corrosion • Tarnish 		
		<p>3. Discuss:</p> <ul style="list-style-type: none"> • Physical characteristics of dental materials • Wettability and its significance • Stress and its types • Stress and strain relationships of different dental materials • Tooth wear and its types • Reaction of material under oral conditions • Fracture of restorative materials • Thermal properties of dental materials • Risks/benefit analysis • Chemical stability of materials <p>4. Illustrate stress and strain relationships of different dental materials</p> <p>5. Differentiate between/among the following:</p> <ul style="list-style-type: none"> • Absorption, adsorption & sorption • Adhesion & cohesion • Mechanical & chemical adhesion • Radiopacity & radiolucency 		

	<ul style="list-style-type: none"> • Thermal conductivity & thermal diffusivity • Creep & flow • Chemical & electrochemical corrosion <p>6. Analyze factors affecting color, appearance and selection of materials</p> <p>7. Justify the choice of materials according to their mechanical properties</p> <p>8. Relate flow characteristics of dental materials with their behavior.</p> <p>9. Contrast the different features of fluid behavior.</p> <p>10. Discuss the various states of materials during their mixing, manipulation and oral conditions.</p>		
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IMPRESSION MATERIALS; CLASSIFICATION AND REQUIREMENTS

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Introduction to Impression materials	1. Classify impression materials 2. Describe ideal properties of impression materials. 3. Discuss: <ul style="list-style-type: none"> • Impression making • Impression materials as duplicating materials • General requirements, manipulative variables and clinical considerations of impression materials • Tissue management and cross infection control • Application of impression materials • Composition, properties, indications and 	1. Lectures 2. Tutorials 3. Lab Practical	1. BCQs 2. Viva 3. Presentations 4. OSPE 5. Assignments
2.	Non-elastic impression materials			
3.	Elastic impression materials			

		<p>contraindications of elastic and non-elastic impression materials.</p> <ol style="list-style-type: none"> 4. Identify different types of impression materials used in dentistry. 5. Justify selection of impression materials 6. Mix alginate impression powder and water in the recommended ratio 7. Record an alginate impression on a phantom head 8. Write their composition and selection based on the clinical problem to be addressed. 		
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GYPSUM PRODUCTS FOR DENTAL CASTS

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	General introduction and Classification of gypsum products	<ol style="list-style-type: none"> 1. Write down: <ul style="list-style-type: none"> • Chemical formula of dental gypsum • Composition and setting reaction of dental plaster and dental stone 2. Classify gypsum according to ISO standard 3. Describe the requirements of dental cast materials 4. Discuss the setting characteristics of dental plaster and the set material 5. Define die and cast 6. List the following: <ul style="list-style-type: none"> • Advantages and disadvantages of gypsum • Different types of die materials 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Lab Practical 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. Presentations 4. OSPE 5. Assignments
2.	Manipulative variables and setting characteristics	<ol style="list-style-type: none"> 1. Manipulate materials using the correct technique 		

		<ol style="list-style-type: none"> 2. Mix soft plaster using the recommended technique and water/powder ratio 3. Build a plaster slab following the allocated dimensional guidelines. 4. Justify any visualized change in slab dimensions during and after completion of setting reaction. 5. Demonstrate the technique of model pouring. 6. Fabricate dental caste/model 7. Trim study models 8. Perform finishing of study models 		
3.	Manufacturing processes	<ol style="list-style-type: none"> 1. Discuss dry and wet calcination for dental plaster and dental stone. 		

WAXES USED IN DENTISTRY

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Ideal requirements and classification of dental waxes	<ol style="list-style-type: none"> 1. Discuss application of different dental waxes in dentistry 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Lab 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 4. Presentations
2.	Properties and applications of dental waxes	<ol style="list-style-type: none"> 2. Describe the components of dental waxes 3. Discuss: <ul style="list-style-type: none"> • Ideal requirements for wax pattern materials • Properties of dental waxes • Types of waxes • Steps of partial dental construction 4. Classify dental waxes according to their use and origin 5. Identify the different classes of Kennedy's classification on study models 	<ol style="list-style-type: none"> 3. Lab Practical 	<ol style="list-style-type: none"> 5. OSPE 6. Assignments

	6. Analyze partial denture design on study models 7. Justify the use of waxes for partial denture pattern 8. Demonstrate the steps of wax up on given model		
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POLYMERS AND SEPARATING MEDIA USED IN DENTISTRY

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Synthetic polymers	1. Discuss stages of polymerization 2. Describe structure and properties of synthetic polymers. 3. Classify synthetic and prosthetic laboratory resins. 4. Describe the types, compositions, characteristics, clinical applications, manipulation the synthetic and prosthetic laboratory resins.	1. Lectures 2. Tutorials 3. Lab Practical	1. BCQs 2. Viva 3. Presentations 5. OSPE 4. Assignments
2.	Denture base polymers	1. Discuss: <ul style="list-style-type: none"> • Requirement of denture base materials. • Properties of acrylic resin as a denture base material • Composition, manipulation and processing of denture base polymers. • Alternative denture base material • Temporization (chair side and laboratory) in light of appropriate PMMA material based selection and setting chemistry. 2. Define:		

		<ul style="list-style-type: none"> • Polymethylmethacrylate • Synthetic resins • Acrylics • Polymers • Monomers • Polymerization • Self-cured, light-cured, heat-cured <ol style="list-style-type: none"> 3. Mix monomers according to standard ratios. 4. Identify the physical stages of PMMA polymerization/acrylic denture base polymerization (cold cure). 5. Fabricate an acrylic partial denture. 		
3.	Denture lining materials	<ol style="list-style-type: none"> 1. Discuss: <ul style="list-style-type: none"> • Hard reline materials; • Tissue conditioners; • Temporary soft lining materials; • Permanent relining materials. 		
4.	Separating media	<ol style="list-style-type: none"> 1. List the different types of separating media used in dentistry 2. Discuss the clinical and laboratory indications and applications of separating media. 		

DENTAL CEMENTS AND THEIR APPLICATIONS

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Introduction and classification	<ol style="list-style-type: none"> 1. Classify dental cements 2. Differentiate between temporary and final cements. 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Lab 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. OSPE
2.	Manipulation and setting characteristics	<ol style="list-style-type: none"> 1. Mix: <ul style="list-style-type: none"> • Zinc phosphate cement as a luting agent and base 	<ol style="list-style-type: none"> 3. Lab <p>Practical</p>	<ol style="list-style-type: none"> 4. Presentations 5. Assignments

		<ul style="list-style-type: none"> • Glass ionomer cement as a luting agent. • Calcium hydroxide as a cavity lining agent. 		
3.	Application of dental cements	<ol style="list-style-type: none"> 1. Compare the types of dental cements with regard to their use as intra pulpal medicaments, bases, lining, luting and restorative materials. 2. Discuss the requirements of dental cements for cavity lining, luting, endodontic and orthodontic purposes. 		

METALS AND ALLOYS

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Introduction; Structure and properties	<ol style="list-style-type: none"> 1. Discuss: <ul style="list-style-type: none"> • Micro leakage • Creep • Galvanism • Tarnish • Corrosion • Significance of cubic crystal structure and eutectic alloys • Properties of alloys • Crystallization process in metals • Coring • Homogenization • Solid state reactions occurring in alloys 2. List different methods of metal shaping in dentistry. 3. Define annealing. 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Lab Practical 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. OSPE 4. Presentations 5. Assignments
2.	Gold and alloys of noble metals	<ol style="list-style-type: none"> 1. Discuss the following: 2. Types and properties of pure gold fillings and casting gold alloys 		

		<ol style="list-style-type: none"> 3. Heat treatments <ol style="list-style-type: none"> 1. Compare the soldering and brazing materials with regard to their properties 2. Describe composition of pure gold fillings and casing alloys 4. Classify gold and alloys of noble metals. 		
3.	Base Metal casting alloys	<ol style="list-style-type: none"> 1. Compare the different types of base metal casting alloys with regard to their properties and clinical indications. 		
4.	Steel and wrought alloys	<ol style="list-style-type: none"> 1. Identify the different types of wrought alloys 2. Discuss: <ul style="list-style-type: none"> • Cold working • Annealing • Welding • Soldering 3. Correlate the properties of steel and wrought alloys with their clinical applications 4. Construct the following <ul style="list-style-type: none"> • Alphabets A, B, G, S using 0.7 mm SS wire on given outline • Clasp for partial denture according to the standard protocol. 		

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INVESTMENT MATERIALS AND CASTING

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Investment materials	<ol style="list-style-type: none"> 1. Differentiate between different types of investment materials. 2. Discuss the composition and physiochemical properties requires to manipulate investment materials. 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Lab Practical 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. OSPE 4. Presentations 5. Assignments

2.	Casting	<ol style="list-style-type: none"> 1. Illustrate the following: <ul style="list-style-type: none"> • Formation of investment mould • Casting process/lost wax technique 2. Discuss casting process/lost wax technique 3. Correlate faults in casting with incorrect selection of materials or faulty technique. 		

CERAMICS AND PORCELAIN FUSED TO METAL

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Composition and properties	<ol style="list-style-type: none"> 1. Classify the major types of ceramics 2. Compare the major types of ceramics with regard to composition, physical and optical properties 3. Relate the composition and properties of ceramics to their manufacturing clinical applications and performance. 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. OSPE 4. Presentations 5. Assignments
2.	Preparation of porcelain and types of ceramic	<ol style="list-style-type: none"> 1. Discuss compaction and firing 2. List types of ceramic restorations 3. Describe the principles of preparation of ceramics restorations. 		
3.	CAD CAM restorations	<ol style="list-style-type: none"> 1. Discuss the fundamental concept behind computer aided prosthesis design 		

DENTAL AMALGAM

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Introduction	<ol style="list-style-type: none"> 1. Discuss the requirements and historical perspective of direct filling/restorative materials 2. Describe the primary purpose of each component of amalgam alloy 3. Relate the importance of the role of mercury/alloy ratio and its influence/effect on setting reaction and restorative procedures 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Lab Practical 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. OSPE 4. Presentations 5. Assignments
2.	Setting characteristics and properties	<ol style="list-style-type: none"> 1. Discuss the setting chemistry associated with amalgam production 2. Discuss properties of dental amalgam 		
3.	Clinical handling and manipulative variables	<ol style="list-style-type: none"> 1. Discuss: <ul style="list-style-type: none"> • Ideology of Black's cavity design • Cavity design and matrices with regard to properties of material; 2. Justify Black's cavity design as an unchallenged baseline upon which information has been added over years 3. Correlate the manipulative parameters of amalgam with the properties of the final restoration 		
4.	Environmental consideration-Dental amalgam	<ol style="list-style-type: none"> 1. List the hazards of incorrect handling of mercury. 2. Discuss the importance of mercury hygiene, mercury/amalgam scrap handling and disposal at chair side 		

DENTAL COMPOSITE RESIN BASED RESTORATIVE MATERIALS

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Introduction	<ol style="list-style-type: none"> 1. Describe components and composition of dental composites 2. Discuss the use of resin based dental composite materials for restorative procedures. 3. Describe historical pretext of dental composites 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Lab Practical 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. OSPE 4. Presentations 5. Assignments
2.	Properties and setting characteristics	<ol style="list-style-type: none"> 1. Discuss general properties of composite 		
3.	Clinical handling and manipulative variables	<ol style="list-style-type: none"> 1. Correlate filler particle size, setting reaction and method of manufacture of dental composite resin bases restorative materials with properties and behavior of the material in situ. 2. Discuss the use of composites in vivo. 3. Describe new resin based restorative materials variants available in the market 		

ADHESION

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	introduction	<ol style="list-style-type: none"> 1. Illustrate the general mechanistic aspects and approaches to adhesion. 2. Describe: <ul style="list-style-type: none"> • Adhesion • Acid etching • Conditioning • Priming 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Lab Practical 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. OSPE 4. Presentations 5. Assignments

2.	Bonding systems and smear layer	<ol style="list-style-type: none"> 1. Describe the following: <ul style="list-style-type: none"> • Enamel & dentine bonding agents • Bonding systems 2. Define smear layer 3. List constituents of smear layer 4. Discuss the importance of smear layer as a determinant of the clinical success of dental composites 		
3.	Bonding at tooth-restoration interface	<ol style="list-style-type: none"> 1. Describe hybridization in relation to dental composites 2. Discuss the dental composite adhesion to tooth structure based on the principles of micromechanical attachment. 		

GLASS IONOMER RESTORATIVE MATERIALS

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Introduction	<ol style="list-style-type: none"> 1. Discuss the historical importance of glass ionomer cements (GIC) as restorative cements 2. Correlate the constituents of GIC to its properties. 3. Describe the composition and properties of GIC. 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Lab Practical 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. OSPE 4. Presentations 5. Assignments
2.	Setting characteristics and manipulative variables	<ol style="list-style-type: none"> 1. Describe the : <ul style="list-style-type: none"> • Setting reaction of GIC • Fluoride release and ion exchange • Interaction between GIC and the external environment and tooth interface • Dimensional stability 2. Relate the properties of set GIC to its clinical manipulation and performance 		

3.	Modified GIC restorative materials	<ol style="list-style-type: none"> 1. Justify the development of resin-modified glass ionomers 2. Discuss the significance of modified GIC constituents, the influence on properties and the impact on the materials clinical performance. 3. Discuss the properties, performance and clinical indications of cermets. 		
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ENDODONTIC MATERIALS

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Introduction	<ol style="list-style-type: none"> 1. Describe root canal treatment. 2. List the various endodontic materials (i.e. irrigants, lubricants, intra-canal medicaments, obturating materials). 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. OSPE 4. Presentations 5. Assignments
2.	Irrigants & lubricants	<ol style="list-style-type: none"> 1. Discuss intra-canal medicaments and filling materials; CaOH₂ cements, GP. 2. ISO standardized color coding Reamers. Files Broaches Spreaders Paper points GP points 3. Discuss clinical handling characteristics for optimal endodontic outcomes. 4. Manual vs rotary instrumentation 		

ARTIFICIAL TEETH

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Properties and clinical applications	<ol style="list-style-type: none"> 1. Describe the techniques for manufacturing artificial teeth 2. Differentiate between acrylic & porcelain teeth. 3. List the requirements of artificial teeth 4. Identify the types of artificial teeth. 5. Identify the type of wax on the teeth strip. 6. Select the appropriate teeth for the given model for teeth setup 7. Demonstrate the technique for teeth setup. 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. OSPE 4. Presentations 5. Assignments

FINISHING AND POLISHING MATERIALS

S.NO.	TOPICS	LEARNING OBJECTIVES	MODE OF TEACHING	ASSESSMENT TOOLS
1.	Introduction and general concepts	<ol style="list-style-type: none"> 1. Describe finishing and polishing of dental prostheses and restorative materials 2. Identify equipment used in finishing and polishing of dental restorations. 	<ol style="list-style-type: none"> 1. Lectures 2. Tutorials 3. Lab 	<ol style="list-style-type: none"> 1. BCQs 2. Viva 3. OSPE 4. Presentations 5. Assignments

PRACTICAL SCHEDULE
DEPARTMENT OF DENTAL MATERIALS

<u>DATE</u>	<u>TOPIC</u>	<u>NAME OF LECTURER</u>
Year 2022-23	DENTAL MATERIALS LAB	
	Specification for mixing of gypsum with water (Group A)	D1
	Specification for mixing of gypsum with water (Group B)	D2
	Mixing guidelines of gypsum with water (Group A)	D1
	Mixing guidelines of gypsum with water (Group B)	D2
	Plaster Slab/Plaster Block (Group A)	D1
	Plaster Slab/Plaster Block (Group B)	D2
	Trimming and Finishing Study Models (Group A)	D1
	Trimming and Finishing Study Models (Group B)	D2
	Armamentarium used for trimming and finishing models (Group A)	D1
	Armamentarium used for trimming and finishing models (Group B)	D2
	Wire Bending: Alphabet 'A'(Group A)	D1
	Wire Bending: Alphabet 'A'(Group B)	D2
	Alphabet 'B' (Group A)	D1
	Alphabet 'B' (Group B)	D2
	Alphabet 'G' (Group A)	D1
	Alphabet 'G' (Group B)	D2
	Alphabet 'S' (Group A)	D1
	Alphabet 'S' (Group B)	D2
	ROTATION IN ORTHDONTICS DEPARTMENT	
	Fabrication of Adam's Clasp (Group A)	D1

	Fabrication of Adam's Clasp (Group B)	D2
	Steps of Adam's Clasp (Group A)	D1
	Steps of Adam's Clasp (Group B)	D2
	Adam's Clasp (Group A)	D1
	Adam's Clasp (Group B)	D2
	Fabrication of Labial Bow (Group A)	D1
	Fabrication of Labial Bow (Group B)	D2
	Steps of Labial Bow (Group A)	D1
	Steps of Labial Bow (Group B)	D2
	Labial Bow (Group A)	D1
	Labial Bow (Group B)	D2
	Fabrication of T-spring (Group A)	D1
	Fabrication of T-spring (Group B)	D2
	Fabrication of Z-spring (Group A)	D1
	Fabrication of Z-spring (Group B)	D2
	DENTAL MATERIALS LAB	
	Clasp Making (Group A)	D1
	Clasp Making (Group B)	D2
	Wax up and Slab Making (Group A)	D1
	Wax up and Slab Making (Group B)	D2
	Wax up (Group A)	D1
	Wax up (Group B)	D2
	Articulation (Group A)	D1
	Articulation (Group B)	D2
	Arrangements of teeth (Group A)	D1
	Arrangements of teeth (Group B)	D2
	Specification for mixing of alginate powder with water (Group A)	D1
	Specification for mixing of alginate powder with water (Group B)	D2
	Mixing ratio of alginate powder and water (Group A)	D1
	Mixing ratio of alginate powder and water (Group B)	D2

	Alginate Impression (Group A)	D1
	Alginate Impression (Group B)	D2
	Elastomeric Impression (Group A)	D1
	Elastomeric Impression (Group B)	D2
	ROTATION IN ORAL SURGERY DEPARTMENT	
	Suture Materials and Techniques in Dentistry (Group A)	D1
	Suture Materials and Techniques in Dentistry (Group B)	D2
	Surgical Needles (Group A)	D1
	Surgical Needles (Group B)	D2
	Suture Materials (Group A)	D1
	Suture Materials (Group B)	D2
	Suturing Techniques used in dentistry (Group A)	D1
	Suturing Techniques used in dentistry (Group B)	D2
	Common Suturing Techniques (Group A)	D1
	Common Suturing Techniques (Group B)	D2
	ROTATION IN PHANTOM LAB BY DENTAL MATERIALS	
	Instruments introduction and demonstration (Group A)	D1
	Instruments introduction and demonstration (Group B)	D2
	Material introduction and demonstration (Group A)	D1
	Material introduction and demonstration (Group B)	D2
	Demonstration of Mixing zinc phosphate cement for luting luting and base (Group A)	D1

	Demonstration of Mixing zinc phosphate cement for luting luting and base (Group B)	D2
	Mixing zinc phosphate cement for luting luting and base (Group A)	D1
	Mixing zinc phosphate cement for luting luting and base (Group B)	D2
	Demonstration of mixing Glass ionomer cement luting consistency (Group A)	D1
	Demonstration of mixing Glass ionomer cement luting consistency (Group B)	D2
	Mixing Glass ionomer cement luting consistency (Group A)	D1
	Mixing Glass ionomer cement luting consistency (Group B)	D2
	Demonstration of mixing Zinc oxide eugenol as a Base or Temporary restorative material (Group A)	D1
	Demonstration of mixing Zinc oxide eugenol as a Base or Temporary restorative material (Group B)	D2
	Mixing Zinc oxide eugenol as a Base or Temporary restorative material (Group A)	D1
	Mixing Zinc oxide eugenol as a Base or Temporary restorative material (Group B)	D2
	Demonstration of Mixing Calcium Hydroxide for cavity lining (Group A)	D1
	Demonstration of Mixing Calcium Hydroxide for cavity lining (Group B)	D2
	Mixing Calcium Hydroxide for cavity lining (Group A)	D1
	Mixing Calcium Hydroxide for cavity lining (Group B)	D2
	Mixing of powder and liquid (Group A)	D1
	Mixing of powder and liquid (Group B)	D2
	Manipulation and various consistencies of Dental cements (Group A)	D1
	Manipulation and various consistencies of Dental cements (Group B)	D2

	Precautions for Manipulation of Dental Cements(Group A)	D1
	Precautions for Manipulation of Dental Cements (Group B)	D2
	Revision (Group A)	D1
	Revision (Group B)	D2
	Test / performance (Group A)	D1
	Test / performance (Group B)	D2
	Introduction to Manipulation of Permanent restorative Materials (Group A)	D1
	Introduction to Manipulation of Permanent restorative Materials (Group B)	D2
	Demonstration on Steps of manipulation for Dental Amalgam filling (Group A)	D1
	Demonstration on Steps of manipulation for Dental Amalgam filling (Group B)	D2
	Steps of manipulation for Dental Amalgam filling (Group A)	D1
	Steps of manipulation for Dental Amalgam filling (Group B)	D2
	Demonstration of Amalgam finishing and polishing (Group A)	D1
	Demonstration of Amalgam finishing and polishing (Group B)	D2
	Amalgam finishing and polishing (Group A)	D1
	Amalgam finishing and polishing	D2
	Introduction to Dental Composite Filling (Group A)	D1
	Introduction to Dental Composite Filling (Group B)	D2
	Demonstration on steps of Dental Composite Filling (Group A)	D1
	Demonstration on steps of Dental Composite Filling (Group B)	D2
	Steps of Dental Composite Filling (Group A)	D1

	Steps of Dental Composite Filling (Group B)	D2
	Demonstration on Dental Composite Finishing and Polishing (Group A)	D1
	Demonstration on Dental Composite Finishing and Polishing (Group B)	D2
	Dental Composite Finishing and Polishing (Group A)	D1
	Dental Composite Finishing and Polishing (Group B)	D2
	Revision (Group A)	D1
	Revision (Group B)	D2
	Presentations (Group A)	D1
	Presentations (Group B)	D2
	Tests (Group A)	D1
	Test (Group B)	D2
	Performance and evaluation (Group A)	D1
	Performance and evaluation (Group B)	D2
	Complete revision (Group A)	D1
	Complete revision (Group B)	D2
	Complete revision (Group A)	D1
	Complete revision (Group B)	D2

Nine-week plan of practical rotation in detail (duration and timings)

Orientation Session:

- Introduction to department
- Introduction to demonstrators/lecturers
- Effective communication
- Code of conduct
 - Lab timings (Punctuality)
 - Dress code
 - Lab coat
 - Tied-up hair
 - Covered shoes etc.
- Hand wash technique
- Briefing about:
 - laboratory discipline
 - instruments,
 - models
 - log book
- Quota requirements

Second Year Practical

WEEK No. 1

Group A: Monday (1.00 PM-1.50 PM)

Group B: Tuesday (1.00 PM-1.50 PM)

Group A: Wednesday (2:00 PM- 3:30 PM)

Group B: Thursday (2:00 PM- 3:30 PM)

DAY 1 and DAY 2:

1:00 PM to 1:10 PM (Orientation)

1:10 PM to 1:25 PM (Introduction to instruments and materials)

1:25 PM to 1:50 PM (Demonstration on mixing glass ionomer cement)

Students Groups	Demonstrators	1:00 PM to 1:10 PM	1:10 PM to 1:25 PM	1:25 PM to 1:50 PM
A	D-1	Orientation	Introduction to instruments & materials	Demonstration on mixing glass ionomer cement
B	D-2	Orientation	Introduction to instruments & materials	Demonstration on mixing glass ionomer cement

DAY 3 and DAY 4:

2:00 PM to 2:30 PM (Orientation)

2:30 PM to 3:00 PM (Introduction to instruments and materials)

3:00 PM to 03:30 PM (Demonstration on mixing gypsum and plaster slab making)

Students Group	Demonstrators	2:00 PM to 2:30 PM	2:30 PM to 3:00 PM	3:00 PM to 3:30 PM
A	D-1	Orientation	Introduction to instruments & materials	Demonstration on mixing gypsum and plaster slab making
B	D-2	Orientation	Introduction to instruments & materials	Demonstration on mixing gypsum and plaster slab making

WEEK No. 2**Group A: Monday (1.00 PM-1.50 PM)****Group B: Tuesday (1.00 PM-1.50 PM)****Group A & B: Wednesday (2:00 PM- 3:30 PM)****Group C & D: Thursday (2:00 PM- 3:30 PM)****DAY 1 and DAY 2:**

1:00 PM to 1:20 PM (Introduction to instruments and materials)

1:20 PM to 1:50 PM (Demonstration on mixing zinc phosphate cement)

Students Group	Demonstrators	1:00 PM to 1:20 PM	1:20 PM to 1:50 PM
A	D-1	Introduction to instruments & materials	Demonstration on mixing zinc phosphate cement
B	D-2	Introduction to instruments & materials	Demonstration on mixing zinc phosphate cement

DAY 3 and DAY 4:

2:00 PM to 2:30 PM (Demonstration of Plaster slab making)

2:30 PM to 3:00 PM (Plaster slab making)

3:00 PM to 03:30 PM (Demonstration of Plaster block making)

Students Group	Demonstrators	2:00 PM to 2:30 PM	2:30 PM to 3:00 PM	3:00 PM to 3:30 PM
A	D-1	Demonstration of plaster slab making	Plaster slab making	Demonstration of plaster block making
B	D-2	Demonstration of plaster slab making	Plaster slab making	Demonstration of plaster block making

WEEK No. 3**Group A: Monday (1.00 PM-1.50 PM)****Group B: Tuesday (1.00 PM-1.50 PM)****Group A: Wednesday (2:00 PM- 3:30 PM)****Group B: Thursday (2:00 PM- 3:30 PM)****DAY 1 and DAY 2:**

1:00 PM to 1:20 PM (Introduction to instruments and materials)

1:20 PM to 1:50 PM (Demonstration on mixing of zinc oxide eugenol cement)

Students Groups	Demonstrators	1:00 PM to 1:20 PM	1:20 PM to 1:50 PM
A	D-1	Introduction to instruments & materials	Demonstration on mixing of zinc oxide eugenol cement
B	D-2	Introduction to instruments & materials	Demonstration on mixing zinc oxide eugenol cement

DAY 3 and DAY 4:

2:00 PM to 2:30 PM (Plaster block making)

2:30 PM to 3:00 PM (Plaster block making)

3:00 PM to 03:30 PM (Trimming and finishing study models)

Students Group	Demonstrators	2:00 PM to 2:30 PM	2:30 PM to 3:00 PM	3:00 PM to 3:30 PM
A	D-1	Plaster block making	Plaster block making	Trimming and finishing study models
B	D-2	Plaster block making	Plaster block making	Trimming and finishing study models

WEEK No. 4

Group A: Monday (1.00 PM-1.50 PM)

Group B: Tuesday (1.00 PM-1.50 PM)

Group A: Wednesday (2:00 PM- 3:30 PM)

Group B: Thursday (2:00 PM- 3:30 PM)

DAY 1 and DAY 2:

1:00 PM to 1:20 PM (Introduction to instruments and materials)

1:20 PM to 1:50 PM (Demonstration on mixing of calcium hydroxide cement)

Students Group	Demonstrators	1:00 PM to 1:20 PM	1:20 PM to 1:50 PM
A	D-1	Introduction to instruments & materials	Demonstration on mixing of calcium hydroxide cement
B	D-2	Introduction to instruments & materials	Demonstration on mixing of calcium hydroxide cement

DAY 3 and DAY 4:

2:00 PM to 2:30 PM (Armamentarium used for trimming and finishing models)

2:30 PM to 3:00 PM (Armamentarium used for trimming and finishing models)

3:00 PM to 03:30 PM (Armamentarium used for trimming and finishing models)

Students Group	Demonstrators	2:00 PM to 2:30 PM	2:30 PM to 3:00 PM	3:00 PM to 3:30 PM
A	D-1	Armamentarium used for trimming and finishing models	Armamentarium used for trimming and finishing models	Armamentarium used for trimming and finishing models
B	D-2	Armamentarium used for trimming and finishing models	Armamentarium used for trimming and finishing models	Armamentarium used for trimming and finishing models

WEEK No. 5**Group A: Monday (1.00 PM-1.50 PM)****Group B: Tuesday (1.00 PM-1.50 PM)****Group A: Wednesday (2:00 PM- 3:30 PM)****Group B: Thursday (2:00 PM- 3:30 PM)****DAY 1 and DAY 2:**

1:00 PM to 1:20 PM (Introduction to powder and liquid ratio of dental cements)

1:20 PM to 1:50 PM (Manipulation and various consistencies of dental cements)

Students Group	Demonstrators	1:00 PM to 1:20 PM	1:20 PM to 1:50 PM
A	D-1	Introduction to powder and liquid ratio of dental cements	Manipulation and various consistencies of dental cements
B	D-2	Introduction to powder and liquid ratio of dental cements	Manipulation and various consistencies of dental cements

DAY 3 and DAY 4:

2:00 PM to 2:30 PM (Introduction to wire bending)

2:30 PM to 3:00 PM (Demonstration of wire bending alphabet A)

3:00 PM to 03:30 PM (Wire bending alphabet A)

Students Group	Demonstrators	2:00 PM to 2:30 PM	2:30 PM to 3:00 PM	3:00 PM to 3:30 PM
A	D-1	Introduction to wire bending	Demonstration of wire bending alphabet A	Wire bending alphabet A
B	D-2	Introduction to wire bending	Demonstration of wire bending alphabet A	Wire bending alphabet A

WEEK No. 6

Group A: Monday (1.00 PM-1.50 PM)

Group B: Tuesday (1.00 PM-1.50 PM)

Group A: Wednesday (2:00 PM- 3:30 PM)

Group B: Thursday (2:00 PM- 3:30 PM)

DAY 1 and DAY 2:

1:00 PM to 1:20 PM (Introduction to instruments and materials)

1:20 PM to 1:50 PM (Demonstration on steps of manipulation for dental amalgam filling)

Students Group	Demonstrators	1:00 PM to 1:20 PM	1:20 PM to 1:50 PM
A	D-1	Introduction to instruments & materials	Demonstration on steps of manipulation for dental amalgam filling
B	D-2	Introduction to instruments & materials	Demonstration on steps of manipulation for dental amalgam filling

DAY 3 and DAY 4:

2:00 PM to 2:30 PM (Demonstration of wire bending alphabet B)

2:30 PM to 3:00 PM (Wire bending alphabet B)

3:00 PM to 03:30 PM (Wire bending alphabet B)

Students Group	Demonstrators	2:00 PM to 2:30 PM	2:30 PM to 3:00 PM	3:00 PM to 3:30 PM
A	D-1	Demonstration of wire bending alphabet B	Wire bending alphabet B	Wire bending alphabet B
B	D-2	Demonstration of wire bending alphabet B	Wire bending alphabet B	Wire bending alphabet B

WEEK No. 7

Group A: Monday (1.00 PM-1.50 PM)

Group B: Tuesday (1.00 PM-1.50 PM)

Group A: Wednesday (2:00 PM- 3:30 PM)

Group B: Thursday (2:00 PM- 3:30 PM)

DAY 1 and DAY 2:

1:00 PM to 1:20 PM (Ratio/ proportioning and mixing of dental amalgam)

1:20 PM to 1:50 PM (Manipulation of dental amalgam)

Students Group	Demonstrators	1:00 PM to 1:20 PM	1:20 PM to 1:50 PM
A	D-1	Ratio/ proportioning and mixing of dental amalgam	Manipulation of dental amalgam
B	D-2	Ratio/proportioning and mixing of dental amalgam	Manipulation of dental amalgam

DAY 3 and DAY 4 :

2:00 PM to 2:30 PM (Demonstration of wire bending alphabet G)

2:30 PM to 3:00 PM (Wire bending alphabet G)

3:00 PM to 03:30 PM (Wire bending alphabet G)

Students Group	Demonstrators	2:00 PM to 2:30 PM	2:30 PM to 3:00 PM	3:00 PM to 3:30 PM
A	D-1	Demonstration of wire bending alphabet G	Wire bending alphabet G	Wire bending alphabet B
B	D-2	Demonstration of wire bending alphabet G	Wire bending alphabet G	Wire bending alphabet G

WEEK No. 8

Group A: Monday (1.00 PM-1.50 PM)

Group B: Tuesday (1.00 PM-1.50 PM)

Group A: Wednesday (2:00 PM- 3:30 PM)

Group B: Thursday (2:00 PM- 3:30 PM)

DAY 1 and DAY 2:

1:00 PM to 1:20 PM (Revision of manipulative steps of amalgam filling)

1:20 PM to 1:50 PM (Finishing and polishing of dental amalgam)

Students Group	Demonstrators	1:00 PM to 1:20 PM	1:20 PM to 1:50 PM
A	D-1	Revision of manipulative steps of amalgam filling	Finishing and polishing of dental amalgam
B	D-2	Revision of manipulative steps of amalgam filling	Finishing and polishing of dental amalgam

DAY 3 and Day 4:

2:00 PM to 2:30 PM (Demonstration of wire bending alphabet S)

2:30 PM to 3:00 PM (Wire bending alphabet S)

3:00 PM to 03:30 PM (Wire bending alphabet S)

Students Group	Demonstrators	2:00 PM to 2:30 PM	2:30 PM to 3:00 PM	3:00 PM to 3:30 PM
A	D-1	Demonstration of wire bending alphabet S	Wire bending alphabet S	Wire bending alphabet S
B	D-2	Demonstration of wire bending alphabet S	Wire bending alphabet S	Wire bending alphabet S

WEEK No. 9

Group A: Monday (1.00 PM-1.50 PM)

Group B: Tuesday (1.00 PM-1.50 PM)

Group A: Wednesday (2:00 PM- 3:30 PM)

Group B: Thursday (2:00 PM- 3:30 PM)

DAY 1 and DAY 2:

1:00 PM to 1:20 PM (Introduction to instruments and materials)

1:20 PM to 1:50 PM (Demonstration on steps of manipulation for dental composite filling)

Students Group	Demonstrators	1:00 PM to 1:20 PM	1:20 PM to 1:50 PM
A	D-1	Introduction to instruments and materials	Demonstration on steps of manipulation for dental composite filling
B	D-2	Introduction to instruments and materials	Demonstration on steps of manipulation for dental composite filling

DAY 3 and DAY 4:

2:00 PM to 2:30 PM (Demonstration of clasp making for RPD)

2:30 PM to 3:00 PM (Exercise clasp making for RPD)

3:00 PM to 03:30 PM (Clasp making for RPD)

Students group	Demonstrators	2:00 PM to 2:30 PM	2:30 PM to 3:00 PM	3:00 PM to 3:30 PM
A	D-1	Demonstration of clasp making for RPD	Exercise clasp making for RPD	Clasp making for RPD
B	D-2	Demonstration of clasp making for RPD	Exercise clasp making for RPD	Clasp making for RPD

DEPARTMENTAL RESOURCE BOOKS

S.NO	NAME	AUTHOR	EDITION
1.	Applied Dental Materials	John. F McCabe Angus WG Walla	14 th Edition
2.	Philips Science of Dental Materials	Kenneth J. Anusavice	13 th Edition

DRESS CODE POLICY FOR THE STUDENTS

The dress code policy has been developed to maintain and promote high standards of personal appearance, hygiene, professionalism, and safety in the work place. The professional image of JMDC will be upheld by all the students through their dress and attire, which should be constant with the national cultural sensitivities. It is important to ensure that the institute's image is projected favorably. Dress and appearance should not be offensive to fellow students, faculty members, visitors, patients, attendants or co-workers.

It is the responsibility of all students to adhere to the institution policy (as well as clinical department's policy) and comply with the following defined rules of conduct.

- All students are required to be clean, well-groomed and dressed appropriately for the college and job at all times. Female students are required to dress in well-tailored and subtly coloured clothing which portrays an image of modesty, respectability, decorum and efficiency.
- Male students are required to portray a professional image in shalwar kameez or dress shirt and trousers.
- All students must wear (MANDATORY) clean, white, and neat lab-coats while in the lab.
- Long hair must be neatly tied at the back into a braid or bun.
- All students must be and clean whenever they are report to work. As an example, male students should keep their shirts neatly buttoned and tucked into pants.
- Students should avoid extremes in hairstyles, cosmetics, and jewelry.
- Casual sportswear such as blue jeans, shorts, sweat suits, warm-up suits, T-shirts (with or without logo designs), and sundress are NOT allowed.
- Foot wear should be clean, safe and appropriate.
- No artificial nails, overlays, long nails or chipped nail polish in clinical area.