



## PRE CLINICAL SKILL LAB

### PRE-CLINICAL PROSTHODONTICS

- We have well equipped dry and wet laboratory includes various equipment like
- Seating capacity-65
- Bunsen burner-65
- Acrylizers 2
- Dental Lathe (5)
- Dewaxing unites- 2
- Model Trimmers -3
- Water heater -1
- Dry lab tables- 2
- Study Models- 100

### PRE-CLINICAL ENDODONTICS

- Seating capacity-65
- Phantom head- 65
- Jaw set-65
- Amalgamator-1


### PRE CLINICAL PEDODONTICS

- Seating capacity- 3
- Plaster Dispenser - 4
- Vibrator – 6
- Model Trimmer – 4
- Lab Micromotor – 13
- Acrylizer – 1
- Welder with soldering attachment – 1
- Dental Lath – 1
- Steam Cleaner – 1
- Pressure Moulding Machine – 1
- Spot Welder – 2
- Hydro Solder – 1
- Typhodont – 9
- Phantom Table with Phantom heads with attachment light aerotor and micromotor – 3

### PRE-CLINICAL ORTHODONTICS

- Seating capacity-125 (In hall 4)

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DEAN  
Govt. Dental College & Hospital  
Ahmedabad



# Government Dental College and Hospital Ahmedabad

No. DCH/ 14/2015  
Office of Dean  
Govt. Dental College & Hospital,  
Ahmedabad  
Date: 03/08/2015

## CIRCULAR

Attached herewith is the preclinical policy and Standard Operating Procedure for the dept of Conservative Dentistry and Endodontics of Government Dental college and Hospital, Ahmedabad, as formulated and approved by the college council.

All are requested to make note of the same and implement the policy.

**Dean**  
Govt. Dental College & Hospital,  
Ahmedabad

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All Departments



**GOVERNMENT DENTAL COLLEGE AND  
HOSPITAL, AHMEDABAD.**

**POLICIES AND STANDARD OPERATING PROCEDURE**

**DEPARTMENT OF CONSERVATIVE AND ENDODONTICS**

CIVIL HOSPITAL CAMPUS, ASARWA, AHMEDABAD, GUJARAT, INDIA-380016

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## **POLICY FOR PRECLINICAL EXERCISE**

- 1) Introduction to the preclinical facilities and armamentarium.
- 2) Identification and study of hand cutting instruments chisels, gingival margin trimmers, excavators and hatchet and phantom head unit
- 3) Identification and use of rotary cutting instruments in contra angle handpieces burs.
- 4) Demonstration of plaster model exercises
  - a) Class 1
  - b) Class 1 with extension
  - c) Class 2
  - d) Class 2 with MOD
  - e) Class 5
- 5) Demonstration of extracted teeth exercises which includes cavity preparation, base application, matrix and wedge placement, restoration with amalgam
  - a) Class 1
  - b) Class 1 with extension
  - c) Class 2
  - d) Class 5
- 6) Demonstration of working positions and rubber dam application.
- 7) Demonstrations on typhodont tooth exercises on mandibular and maxillary teeth which includes tooth preparation, base and varnish application, matrix and wedge placement followed by amalgam restoration
  - a) Class 1
  - b) Class 1 with extension
  - c) Class 2
  - d) Class 2 with MOD
  - e) Class 3 and Class 5 for GIC
  - f) Class 5 for amalgam
- 8) Finishing and polishing of restorations



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- 9) Practicing mercury hygiene.
  - 10) Demonstration of silver amalgam manipulation by mechanical and manual methods.
  - 11) Identification and manipulation varnish, bases like zinc phosphate, poly carboxylate, glass ionomer, zinc oxide eugenol cements
  - 12) Identification and manipulation of various matrices, tooth separators and materials like composites and modified glass ionomer cements.
  - 13) Demonstration of Cast restoration
    - a) Preparation of class 2 inlay cavity
    - b) Fabrication of wax pattern
    - c) Sprue for inner attachment investing
    - d) Investing of wax pattern
    - e) Finishing and cementing of class 2 inlay on extracted teeth
  - 14) Demonstration of Class 3 and Class 5 cavity preparation on extracted teeth for composites
  - 15) Polishing and Finishing of the restorations of composites
  - 16) Endodontics (Root Canal Treatment)
    - a) Identification of basic endodontic instruments
    - b) Coronal access cavity preparation on extracted upper central incisors
    - c) Determination of working length
    - d) Biomechanical preparation of root canal space of central incisor
    - e) Obturation of root canal space
    - f) Closure of access cavity
- Discussion and visualization of the pre-clinical model work through audio-visual aids prior to physical demonstration of any exercise or material manipulation keeps the students motivated.
  - The students are evaluated through, internal assessment, term end assessment and preliminary exam before university exam through practical and viva voce
  - Students are encouraged to participate in pre-conference workshop to enhance their pre-clinical skills



## **DEPARTMENT ORIENTATION PROGRAM**

### **STEPS TAKEN AT INITIAL VISIT**

- Report to department with appointment letter
- Meet the HOD of the department
- Registration of name in the daily attendance register
- Shown Pre- clinical area
- Allotment of teachers and working place
- Shown the lab area( dental plaster room)
- Told the quota to be completed till the end of academic year

### **PROTOCOLS**

#### **1: PROTOCOL FOR WORKING IN THE PRE-CLINICAL AREA**

- Instruments to be brought by students as per the departmental list

#### **2: DISPOSAL OF BIOMEDICAL WASTE**

- Done as per biomedical waste rules and regulations.

#### **3. DOCUMENTATION OF ALL WORK DONE AND SIGNATURE**

- Submission of work done along with work record booklet, countersigned by H.O.D.

#### **Policy for preclinical lab safety**

- Due to safety reasons gloves are not used during lab procedure.
- Surface covers must be used regularly so that there is minimal contamination or dirtying of the bench tops
- Lab work surfaces should be cleaned and disinfected as the end of each day
- Personal protective equipment used in the lab are as follows:
  - Mask to reduce splash, splatters
  - Protective eye wear to protect eyes from particulate matter



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- Fire extinguishers should be installed and the staff should be trained in its proper use.

**Work practice controls**

- Prohibited eating, drinking, use of mobiles, smoking application of cosmetics or lip balm and handling of contact lenses.
- All food and beverages should be stored separately.
- Proper hand washing
- Proper handling of sharps
- Proper containment of regulated waste.

**POLICY FOR USAGE OF EXTRACTED TEETH**

EXTRACTED TEETH ARE COLLECTED FOR PRECLINICAL EDUCATIONAL TRAINING.

- 1) FOR USE OF EXTRACTED TEETH MASK AND GLOVES ARE MANDATORY.
- 2) TEETH ARE CLEANED OF VISIBLE BLOOD OR DEBRIS AND MAINTAINED IN HYDRATED STATE IN CLOSE CONTAINER DURING TRANSPORT.
- 3) CONTAINER SHOULD BE LABELLED WITH BIOHAZARD SYMBOL.
- 4) TEETH SHOULD BE STORED IN STORAGE SOLUTION I.E. WATER OR SALINE. CHEMICAL GERMICIDE CAN ALSO BE USED.
- 5) BEFORE USAGE TEETH SHOULD BE AUTOCLAVED FOR 40 MINUTES.
- 6) EXTRACTED TEETH WITH AMALGAM RESTORATION SHOULD NOT BE AUTOCLAVED BECAUSE OF HAZARDS OF MERCURY VAPOURIZATION AND EXPOSURE.
- 7) EXTRACTED TEETH WITH AMALGAM RESTORATION SHOULD BE IMMERSSED IN 10% FORMALIN FOR 2 WEEKS. IT SHOULD BE PLACED IN APPROPRIATELY LABELLED CONTAINER AND DISPOSED OFF BY RESEARCH SAFE

**Biomedical waste management**

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## GOVERNMENT DENTAL COLLEGE AND HOSPITAL, AHMEDABAD.



### Objectives of the Pre-clinical laboratory

1. Effective training and education of the students so that they are ready to work in dental clinics.

### Responsibility of the Pre-clinical laboratory

1. Ensure proper handling and decontamination of supplies and materials.
2. Ensure safety of students from hazards.


### Role and function of the Pre-clinical laboratory

1. Restorative procedure through various preclinical exercises are taught  
To simulate the future clinical scenario
2. Prevention of cross contamination

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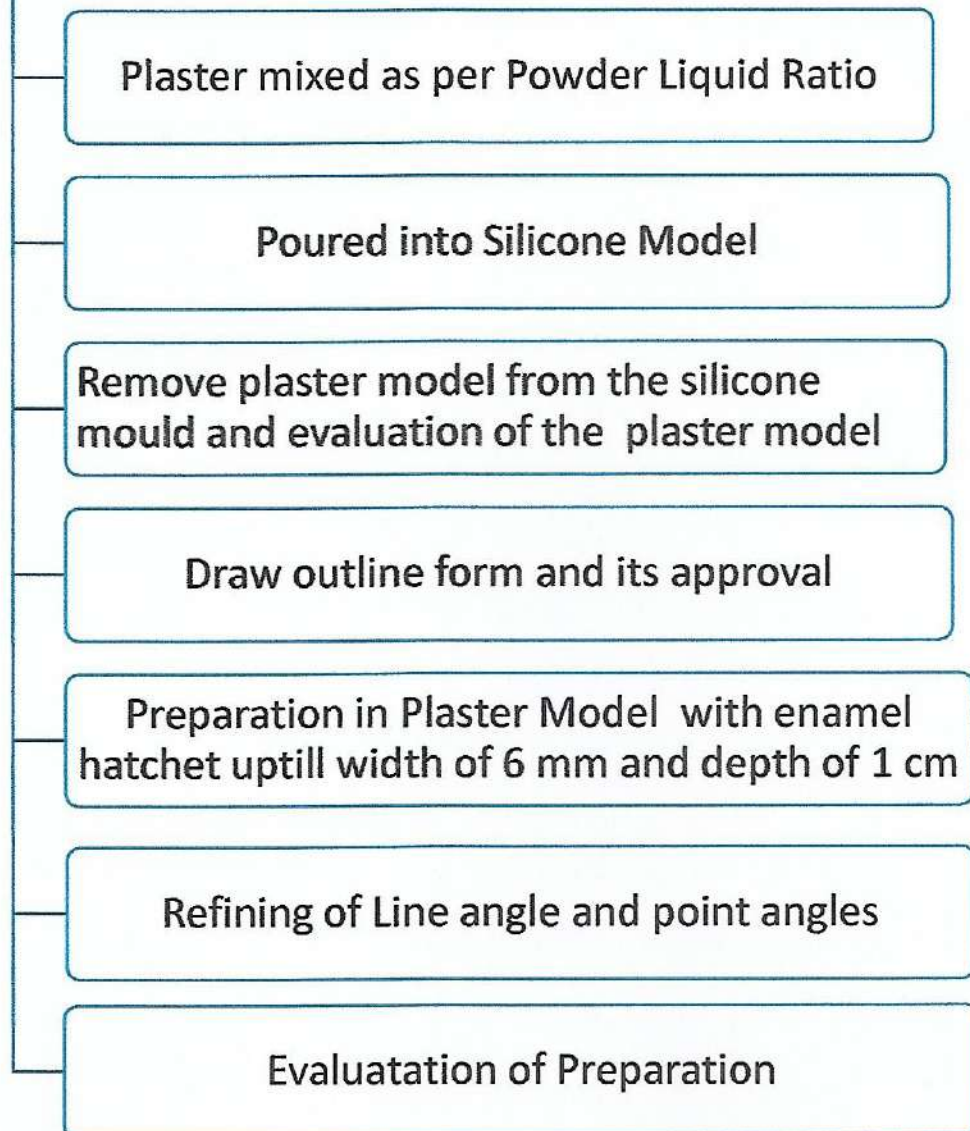
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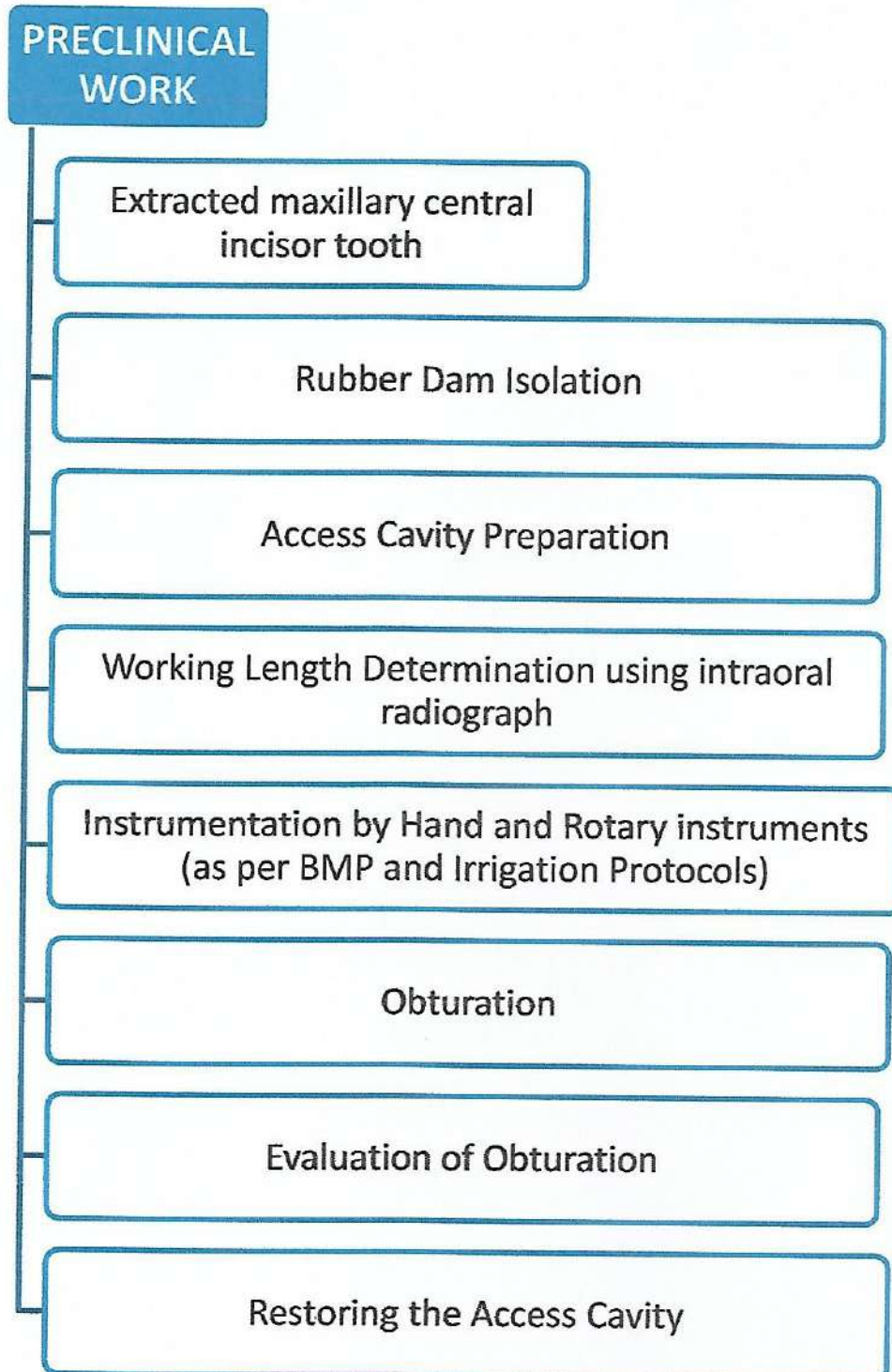
## Standard Operating Procedure For Class 1 and Class 2 preparation on Plaster model

### MODEL WORK





## Standard Operating Procedure For Root Canal Treatment



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## Standard Operating Procedure For Cast Inlay (Preclinical 2<sup>nd</sup> BDS)

### CLINICAL WORK

Isolation of the tooth under Rubber Dam  
(Extracted Molar Tooth)

Tooth Preparation

Evaluation of tooth preparation

Modifications carried out as per required

Direct wax pattern fabrication

Sprue attachment

Impression making and die preparation

Casting of wax pattern

Finishing and Polishing

Try-in on prepared Tooth

Final Cementation in Prepared Tooth



## Standard Operating Procedure For Cast Inlay (Preclinical 2<sup>nd</sup> BDS)

### CLINICAL WORK

Isolation of the tooth under Rubber Dam  
(Extracted Molar Tooth)

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Evaluation of tooth preparation

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Direct wax pattern fabrication

Sprue attachment

Impression making and die preparation

Casting of wax pattern

Finishing and Polishing

Try-in on prepared Tooth

Final Cementation in Prepared Tooth



## **STANDARD OPERATING PROCEDURE FOR MERCURY SPILL MANAGEMENT**

Mercury spill is dangerous. It is powerful neurotoxin, so it should be managed properly. Small particles of mercury are poisonous.

### **MERCURY SPILL KIT**

- Chalk for cordon
- Gloves
- Face mask
- Disposable apron
- Goggles
- Card board strips
- 10ml syringe
- Torch
- Plastic container
- Zip lock bag
- Biohazard Sticker
- Marker


### **MERCURY SPILL MANAGEMENT**

- Remove other things at the mercury spill site and switch off fan.
- Wear PPE. (mask, cap, gloves, goggles)
- Remove ornaments.
- Collect broken glass in paper towel (tissue paper) and put it in zip lock bag. Label it "contaminated with mercury" handle it with care.
- It can be cleaned easily if mercury spill at floor or wooden.
- Collect small particles of mercury with card board. If particles are not visible, use torch.
- Collect particles with syringe and drop it in plastic container with water. That container put in zip lock bag and label "contaminated with mercury".
- The material used for cleaning and gloves put in zip lock bag and label it.
- All bags hand over to pharmacist in drug store.
- Wash your hands, face and any other areas of your body exposed to the mercury.
- Keep the room well ventilated.

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# Government Dental College and Hospital Ahmedabad

No.DCH/ 16/2015  
Office of Dean  
Govt. Dental College &Hospital,  
Ahmedabad  
Date: 07/08/2015

## CIRCULAR

Attached herewith is the preclinical policy and Standard Operating Procedure for the dept of Department Orthodontics and Dentofacial Orthopedics for Government Dental college and Hospital, Ahmedabad, as formulated and approved by the college council.

All are requested to make note of the same and work towards its implementation.

Dean

Govt. Dental College & Hospital,  
Ahmedabad

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All Departments

No. DCH/  
Office of Dean



**GOVERNMENT DENTAL COLLEGE AND  
HOSPITAL, AHMEDABAD.**

**POLICIES AND STANDARD OPERATING PROCEDURE**

**DEPARTMENT OF ORTHODONTICS AND DENTOFACIAL  
ORTHOPAEDICS**

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**GOVERNMENT DENTAL COLLEGE AND  
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**Policy for pre-clinicals in Orthodontic Department**

**3<sup>rd</sup> year pre-clinical orthodontics**

All 3<sup>rd</sup> year BDS practical classes will be taken by Tutors by rotation.

Students come for pre clinics for 2 hours in a week (Batch B-Wednesday, Batch-A Thursday).

They have to finish below wire bending exercises:

1. Straightening of 21-gauge wire of 6" length.
2. Construction of equilateral triangle of 2" from 21-gauge wire.
3. Construction of a circle which fits in the equilateral triangle from 21-gauge wire.
4. Construction of C-Clasps on 1<sup>st</sup> molars & 1<sup>st</sup> premolars from 21-gauge wire.

**4<sup>th</sup> year pre-clinical orthodontics**

All 4<sup>th</sup> year BDS practical classes will be taken by Assistant Professors by rotation.

Students come for pre clinics for 2 terms (1<sup>st</sup> term of 15 days, 2<sup>nd</sup> term of 7 days-5 hours/day)

They have to finish below wire bending exercises:

1. Construction of full crib clasps on 1<sup>st</sup> molars & 1<sup>st</sup> premolars from 21-gauge wire.
2. Construction of Arrowhead part-I from 21-gauge wire.
3. Construction of Arrowhead part-II from 21-gauge wire.
4. Construction of Adam's clasps on 1<sup>st</sup> molars & 1<sup>st</sup> premolars from 21-gauge wire.
5. Construction of U-loop canine retractors from 23-gauge wire.
6. Construction of helical canine retractors from 23-gauge wire.
7. Construction of Finger spring for the mesial movement of central incisors from 23-gauge wire.
8. Construction of Z-spring on central incisors from 23-gauge wire.
9. Construction of long, medium & short labial bows from 21 gauge/ 23-gauge wire.

Practical class for the demonstration of model analysis, photographic analysis and cephalometric analysis is held after all practical exercises are completed for the entire batch.

Fabrication of a removable appliance and spotters are shown to the entire batch for identification of an appliance.

Discussion and visualization of Pre-clinical wire bending exercises through audio-visual aids prior to demonstration to keep students motivated.

**Method of assessment:**

1 <sup>st</sup> clinical Term	Term-end practical assessment for each batch
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2 <sup>nd</sup> clinical Term	<ul style="list-style-type: none"><li>• Term end viva for each batch</li><li>• Term end practical assessment for each batch</li></ul> (From 2021 onwards OSCE method included)
Prelim Practical Exam	As per university pattern

  
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**GOVERNMENT DENTAL COLLEGE AND  
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**Standard operating procedure for wire bending exercises**


Procure all the armamentarium such as universal plier, half round plier, half round plier, heavy wire cutter, glass slab, wire-21 & 23 guage, glass marking pencil, cast used for wire bending

Introduction/Demonstration to wire bending exercise without study models

Preparation of orthodontic study model

Demonstration of wire bending exercises on study model in given sequences

Wire bending exercises for clasps, springs, bows need to make and get approved by staff member

  
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**GOVERNMENT DENTAL COLLEGE AND  
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**Standard operating procedure for model analysis**

Making of orthodontic study model

Performing various model analysis in detail

**Standard operating procedure for cephalometric analysis**

  
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**GOVERNMENT DENTAL COLLEGE AND  
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Understanding the importance of cephalometrics in orthodontics

Identification of cephalometric landmarks and cephalometric analysis tracing

**Standard operating procedure for fabrication of removable orthodontic appliances**

Making of study model

Construction of wire bending components on study model

Acrylization of orthodontic appliance

Finishing and polishing of appliance



# Government Dental College and Hospital Ahmedabad

DC4/18/2015

Govt. Dental College & Hospital,

Ahmedabad

Date: 08/08/2015

## CIRCULAR

Attached herewith is the preclinical policy and Standard Operating Procedure for the dept of Department of Pedodontics and Preventive dentistry for Government Dental college and Hospital, Ahmedabad, as formulated and approved by the college council.

All are requested to make note of the same and work towards its implementation

**Dean**

Govt. Dental College & Hospital,  
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**GOVERNMENT DENTAL COLLEGE AND  
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## **POLICIES AND STANDARD OPERATING PROCEDURE**

### **DEPARTMENT OF PEDODONTICS AND PREVENTIVE DENTISTRY**

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**GOVERNMENT DENTAL COLLEGE AND  
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**Department of Pedodontics and Preventive Dentistry**

The post graduate students are supposed to complete the following preclinical work and lab exercises in a specified duration of their MDS curriculum (first 6 months from the date of the admission).

These exercises are structured and framed so that the student is trained and prepared to work in child patients by following proper methodology and protocols.

**List of pre-clinical exercises**

1. Carving of all Deciduous teeth
2. Carving of all Permanent teeth
3. Basic wire bending exercise
4. Clasps, Bows, Springs, Canine retractors
5. Fabrication of Hawley's appliance with expansion screw and Coffin's spring
6. Fabrication of all Habit breaking appliance
7. Fabrication of Myofunctional appliance
8. Fabrication of Space maintainers and Space regainers
9. Sectioning of extracted Deciduous and Permanent teeth
10. Phantom Head exercises:
  - a. Performing cavity preparation on Deciduous and Permanent teeth
  - b. Performing Pulpotomy
  - c. Root canal Treatment
  - d. Preparation of teeth for various types of crowns
11. Drawing of morphology of Primary teeth
12. Drawing of Root canal morphology
13. Soldering and Welding exercises

Discussion and visualization of the pre-clinical model work through audio-visual aids prior to physical demonstration of any exercise or material manipulation keeps the students motivated.

The students are evaluated through internal assessment and mock examination before university exam through practical and viva voce.

The students also enroll in pre-conference workshop to enhance their pre-clinical and clinical skills.

Discussion and visualization of the pre-clinical model work through audio-visual aids prior to physical demonstration of any exercise or material manipulation keeps the students motivated.

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**GOVERNMENT DENTAL COLLEGE AND  
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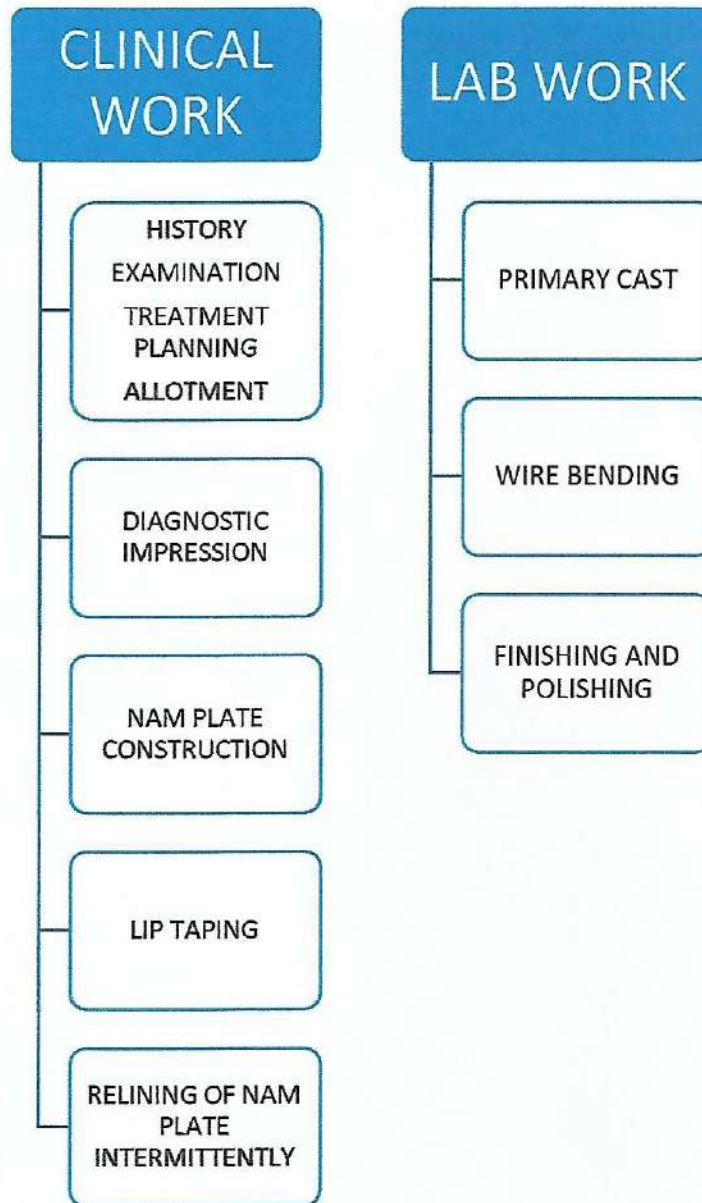
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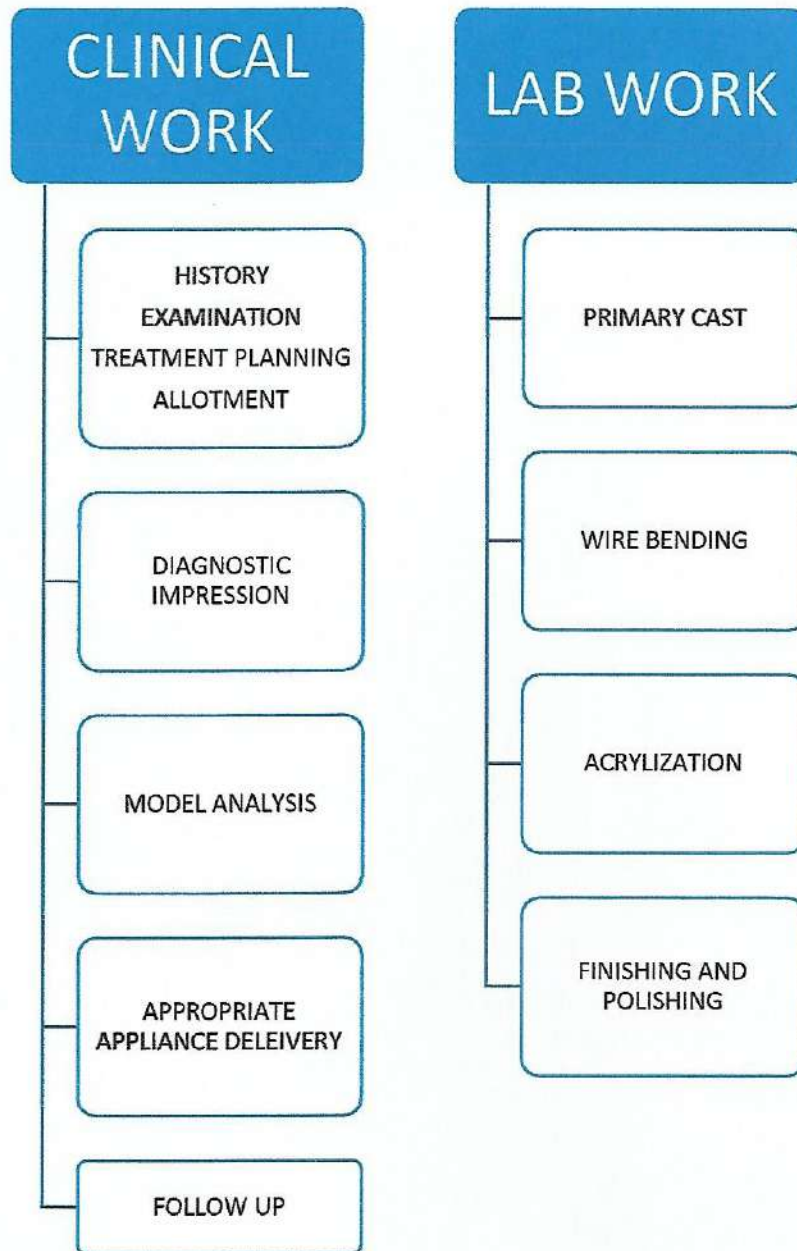
## NASOALVEOLAR MOLDING



  
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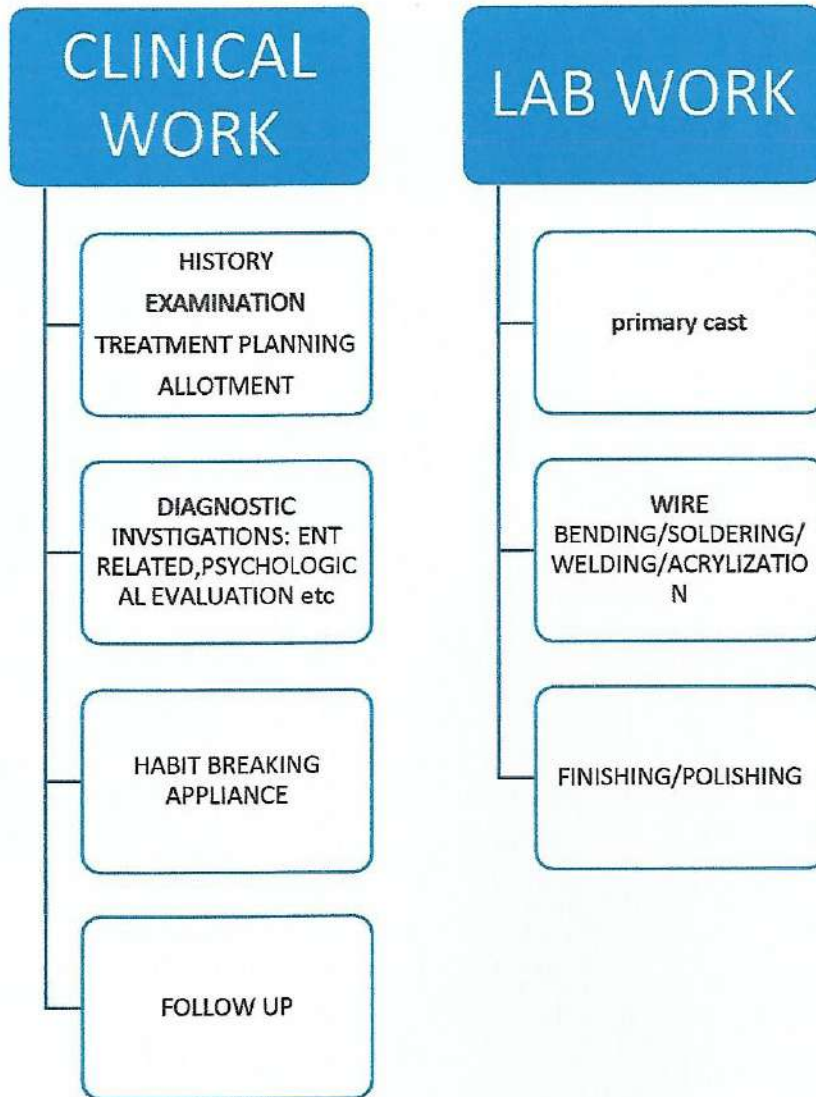
## MINOR ORTHODONTIC CORRECTION



  
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## INTERCEPTION OF ABNORMAL ORAL HABITS



  
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Ahmedabad



# Government Dental College and Hospital Ahmedabad

No. DCH/ 15/2015  
Office of Dean  
Govt. Dental College & Hospital,  
Ahmedabad  
Date: 05/08/2015

## CIRCULAR

Attached herewith is the preclinical policy and Standard Operating Procedure for the dept of Department of Prosthodontics and Crown & Bridge for Government Dental college and Hospital, Ahmedabad, as formulated and approved by the college council.

All are requested to make note of the same.

**Dean**

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**GOVERNMENT DENTAL COLLEGE AND  
HOSPITAL, AHMEDABAD.**

## **POLICIES AND STANDARD OPERATING PROCEDURE**

### **DEPARTMENT OF PROSTHODONTICS AND CROWN & BRIDGE**

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**GOVERNMENT DENTAL COLLEGE AND  
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**Policy of Preclinic Prosthodontics**

**Dept. of Prosthodontics and Crown & Bridge**

Sr. No	Pre-clinical Prosthodontic Exercises
1	Pouring and analysis of study models (Anatomical Landmarks)
2	Sequential steps in the fabrication of complete denture
3	Preliminary impression
4	Fabrication of primary cast
5	Fabrication of Impression trays
6	Final impression
7	Fabrication of Temporary denture bases using Shellac and Auto-polymerizing resin
8	Fabrication of record rims
9	Transfer of jaw relation to the articulator
10	Arrangement and articulation of teeth in Class I
11	Arrangement and articulation of teeth in Class III
12	Waxing and carving
13	Flasking, Dewaxing (wax elimination), Packing and Deflasking
14	Laboratory remount
15	Finishing and polishing of the dentures
16	Repair of complete dentures
17	Classification of partially edentulous arches
18	Applegate's rules for applying Kennedy's classification
19	Designing of removable partial denture

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- Discussions are taken prior to demonstration of every exercise or material manipulation.
- All the preclinical exercises are first demonstrated by the allotted staff and then students are allowed to work on same exercises under the observations and guidance of allotted teachers.
- The students are evaluated through internal assessment and preliminary exam before university exam through practical and viva voce.

  
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**GOVERNMENT DENTAL COLLEGE AND  
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**Policy of Dental Material Preclinic**

**Dept. of Prosthodontics and Crown & Bridge**

Sr. NO.	Exercise Names
1.	<b>STUDY AND MANIPULATION OF GYPSUM PRODUCTS.</b> <ul style="list-style-type: none"><li>• DENTAL PLASTER</li><li>• DENTAL STONE</li></ul>
2.	<b>STUDY AND MANIPULATION OF IMPRESSION COMPOUND.</b>
3.	<b>STUDY AND MANIPULATION OF ZINC OXIDE EUGENOL PASTE.</b>
4.	<b>STUDY AND MANIPULATION OF ALGINATE IMPRESSION MATERIAL.</b>
5.	<b>STUDY AND MANIPULATION OF SHELLAC</b>
6.	<b>STUDY OF DENTAL WAXES AND MANIPULATION OF MODELLING WAX</b>
7.	<b>STUDY OF SEPARATING MEDIA AND APPLICATION OF COLD MOULD SEAL</b>
8.	<b>STUDY OF DENTURE BASE RESINS AND MANIPULATION OF</b> <ul style="list-style-type: none"><li>• SELF CURE RESIN</li><li>• HEAT CURE RESIN</li></ul>
9.	<b>STUDY AND USE OF FINISHING AND POLISHING AGENTS</b>
10.	<b>STUDY AND MANIPULATION OF SILVER AMALGAM</b>
11.	<b>STUDY AND MANIPULATION OF ZINC OXIDE EUGENOL CEMENT.</b>
12.	<b>STUDY AND MANIPULATION OF ZINC PHOSPHATE CEMENT.</b>
13.	<b>STUDY AND MANIPULATION OF GLASS IONOMER CEMENT.</b>

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HOSPITAL, AHMEDABAD.**

- Discussions are taken prior to demonstration of every exercise or material manipulation.
- All the preclinical exercises are first demonstrated by the allotted staff and then students are allowed to work on same exercises under the observations and guidance of allotted teachers.
- The students are evaluated through internal assessment and preliminary exam before university exam through practical and viva voce.

  
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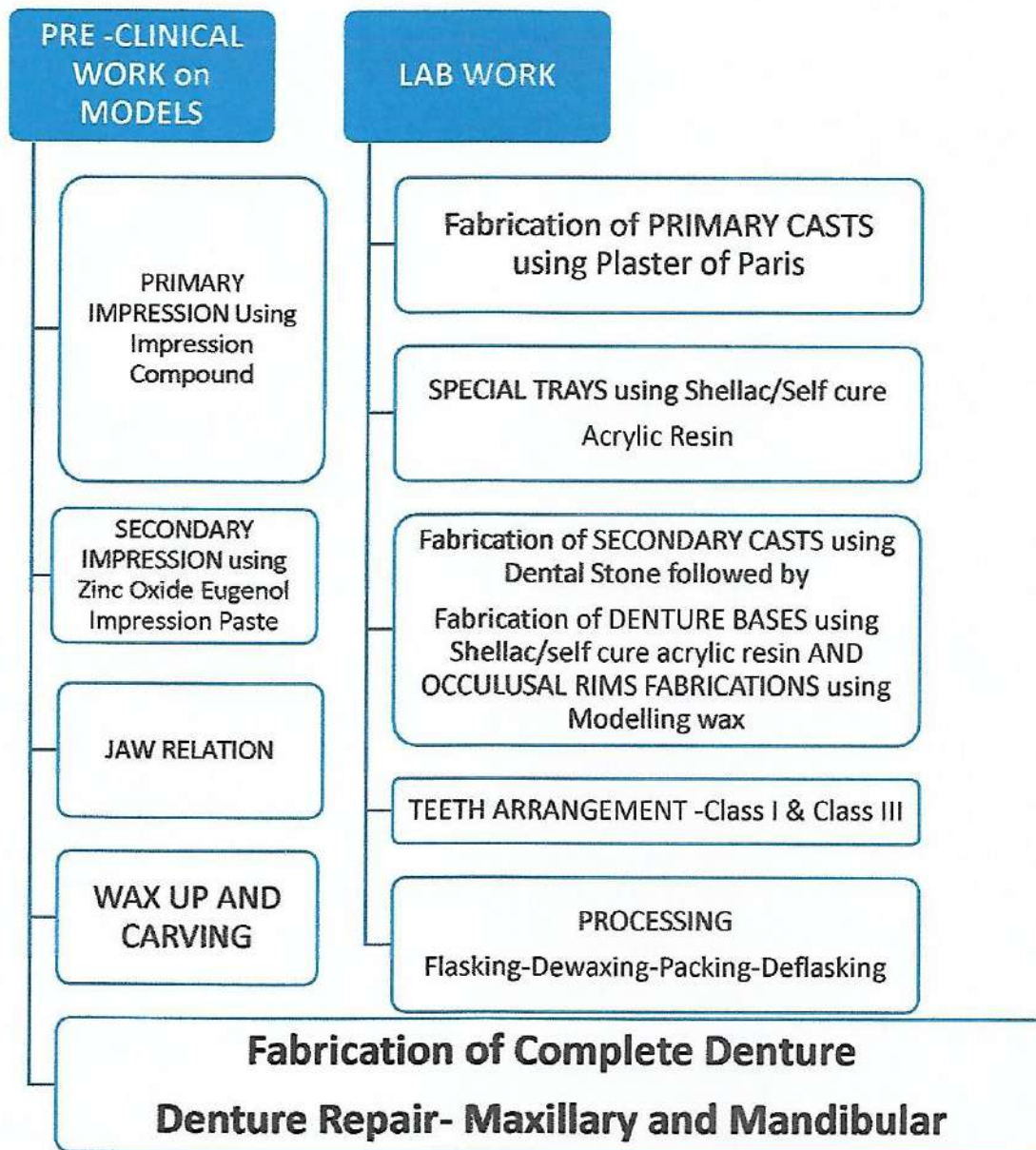


**GOVERNMENT DENTAL COLLEGE AND  
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**Standard Operating Procedures (Pre-clinic)**

**Department of Prosthodontics and Crown & Bridge**

**Procedure For Complete Denture Fabrication:**





## Procedure For Removable Partial Denture Fabrication

### PRE -CLINICAL WORK on MODELS

Classification of R.P.D.

PRIMARY IMPRESSION  
using Alginate  
impression material

Designing of Removable Partial Denture  
Prosthesis



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## **EQUIPMENT MAINTENANCE AND REPAIR**

- 1. Maintenance of equipment :-** it is done as per the schedule of preventive maintenance of equipment
  - Daily
  - Weekly
  - Monthly
  - Annually
- 2. Repair of equipments :-** as per the repair and maintenance policy of the hospital

## **DEPARTMENTAL TRAINING PROGRAM**

### ***DEPARTMENT ORIENTATION PROGRAM***

#### **STEPS TAKEN AT INITIAL VISIT**

- Report to department with appointment letter
- Meet the HOD of the department
- Registration of name in the daily attendance register
- Shown Pre- clinical area
- Allotment of teachers and working place
- Shown the lab area( dental plaster room)
- Told the quota to be completed till the end of academic year

#### **PROTOCOLS**

##### **1: PROTOCOL FOR WORKING IN THE PRE-CLINICAL AREA**

- Instruments to be brought by students as per the departmental list

##### **2: DISPOSAL OF BIOMEDICAL WASTE**

- Done as per biomedical waste rules and regulations.

##### **3. DOCUMENTATION OF ALL WORK DONE AND SIGNATURE**

- Submission of work done along with work record booklet countersigned by H.O.D.



## **Dental lab safety**

### **Policies on dental laboratory safety**

- Risks in dental laboratory are slightly different from in the clinics
- Due to safety reasons gloves are not used while handling lathes and during most lab procedures
- Pumice when used should be unit dosed and discarded after single use.
- Surface covers must be used regularly so that there is minimal contamination or dirtying of the bench tops
- Lab work surfaces should be cleaned and disinfected as the end of each day
- Personal protective equipment used in the lab are as follows:
  - Mask to reduce splash, splatter from trimmers, rag wheels etc
  - Protective eye wear to protect eyes from particulate matter, acrylic/metal dust
  - Fluid resistant gown as and when required
  - Heavy duty heat resistant gloves while handling hot devices, hot water bath etc.
- All Bunsen burners, torches, flame torches used in the laboratory should be cleaned, inspected and stored safely.
- Any source of oxygen/gas used in the laboratory should be shut off at the end of the day.
- During the period of extended non-use, such as vacations the hoses should be disconnected and the lids screwed back on the containers.
- All gas cylinders should be harnessed securely to avoid tipping over or falling.
- Fire extinguishers should be installed and the staff should be trained in its proper use.



### Compressed inflammable gas hazard

- Students use compressed inflammable gas for wax softening, dewaxing and curing.
  - Compressed inflammable gas cylinders are stored in gas/cylinder room and supplied into lab through
  - Gas pipe line as per fire safety manual.
1. Lab personals are responsible for proper maintenance of burners and gas pipe line in the lab.
  2. They ensure open and close of master control of compressed inflammable gas line at the beginning of each day.
  3. They ensure absence of leakage.
  4. If leakage is found they immediately turn off the burner and give information to higher authority.

### Heat/ burn hazard

Many hot instruments are used in lab as geysers, acrylizers, etc

- To handle these instruments working men should be educated well.
- In case injured, first aid facilities should be available.
- Hot instruments should be labeled as **-danger heat hazard**
- Heat resistant gloves should be available.
- In case of burn, apply ice or cold water.
- Give first aid and rush to burns casualty.

### Fire hazard

Keep burner closed when not in use. Any leakage should be reported to the competent authority. Do not operate electrical appliances and stop working with gas, should have proper ventilation. Follow fire safety drill.

Label all desirable equipment as **-danger fire hazard**



### **Electrical hazard**

Proper electrical connection with sound earthing should be there.

Follow electrical precautions.

Label all desirable equipment as-**Danger Electrical Hazard**

All electrical cards and plugs must be in the working order with no frayed cords, exposed wires or overloaded circuits. extension cords should not be used except in emergency.

### **Water hazard**

High pressure water hazard. Ensure optimum pressure to prevent flooding and pressure injuries also ensure that drainage is not blocked.

### **Sharp hazard**

Handle with care. When not using keep them covered and stock them separately. Discard used sharps as per BMW norms.

### **Biological hazards**

Inhalation of acrylic and metal dust can be there, eyes shield, head cap as well as protective hoods should be used. Some chemicals like PMMA are potential irritants. Avoid direct contact and consult physician in case of emergency.

### **Postural hazards**

Posture should be straight. Do not bend your spine while working.

### **Rotary hazards**

Entanglement of gloves and clothes should not be there. Souse textured and well fitting gloves and avoid loose clothing.



### **Chemical hazards**

- Flammable chemicals should be stored in flameproof cabinet away from heat sources and in well ventilated area.
- All items must be appropriately labeled or tagged and have corresponding material safety data
- Labels must provide a brief synopsis of hazards of chemical used in lab .
- Warn the other lab personnel about the proper care, storage and handling.

### **Work practice controls**

- Prohibited eating, drinking ,use of mobiles,smoking application of cosmetics or lip balm and handling of contact lenses.
- All food and beverages should be stored separately.
- Proper hand washing
- Proper handling of sharps
- Proper containment of regulated waste.



## HAZARD ASSOCIATED WITH EQUIPMENTSEQUIPMENTS

### 1) HIGH SPEED LATHE AND GRINDER/TRIMMER

-Acrylic and metal dust

-silica dust while using sand paper

-entanglement of gloves and clothes

(A) So, use textured and well fitting gloves

(B) Avoid loose clothing

(C) Lap apron should be used

(D) Suction, mask, eye shield and head cap as well as protective hoods should be used

(E) Proper illumination should be there

(F) Grinder/trimmer must be properly fixed at the base

(G) Physical damage: Avoid standing in line of wheel

(H) First aid kit should available

(I) Greivious injury: patient should be rushed to the

Hospital(emergency)



2) Model Trimmer

{a} Postural Problem: to avoid it should be placed at proper height (ergonomically placed)

{b} Electrical hazard: should have proper electrical connection with sound earthing

{c} Physical hazard: hold the models using platform

Supplied with model trimmer DO NOT DO FREEHAND Trimming

{d} Water hazard: Ensure that drainage is not blocked. Ensure water supply and avoid running the machine dry.

3) Plaster & Stone dispenser

{a} Electrical hazard: follow electrical precautions

{b} Ensure that lid is closed properly

4) Plaster trap Choking: timely cleaning, verification every fortnightly

5) Geyser {a} Electrical hazard

{B} Burn hazard

Ensure inflow of cold water is maintained



- 6) Acrylizer {a} Postural  
{b} Electrical hazard  
{c} Burn hazard  
{d} Do not run dry: periodic cleaning should be done
- 7) Instruments {a} Sharp instruments: handle with care, when not  
Using keep them covered and stock them separately  
{b} Hot instruments: Do not leave them if not in use  
Keep them chilled  
{c} Do not leave flame unattended: Ensure first aid is  
available.  
{d} Keep inflammable materials away from flame  
{e} Flask/clamp, articulators, bowl, spatula, keep them  
Clean.  
Ensure they are accurate otherwise discard.
- 8} All precautions must be verified by a lab safety team at least once a  
month.
- 9} First aid and fire hazard training is must.
- 10} Entry & work in the lab should be restricted to designated lab  
technician & faculty {prosthodontist}.
- 11} Regular screening should be done every six months to prevent  
occupational hazard which includes eyes and chest examination.



## Biomedical waste management



### Objectives of the Pre-clinical laboratory

1. Effective training and education of the students so that they are ready to work in dental clinics.

### Responsibility of the Pre-clinical laboratory

1. Ensure proper handling and decontamination of supplies and materials.
2. Ensure safety of students from hazards.

### Role and function of the Pre-clinical laboratory

1. Fabrication of different types of prosthesis with an effort to innovate new techniques of fabrication.
2. Prevention of cross contamination and proper discard of the packaging materials.

  
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**Proforma for identification of slow performers and advanced learners**

- ✚ **Identifying Criteria for slow performer and advance learners:** Undergraduate students securing below 50% marks in the first internal examination are categorized as **slow performers** whereas students securing more than 75% marks as **advanced learners**.
- ✚ Postgraduate students according to their grades in 6 monthly progress reports are categorized into **slow performers (C grade)** and **advanced learners (A grade)**.

1st Internal Examination (Undergraduate)		6 monthly progress report (Postgraduate)	
<50% Marks	>75% Marks	'C' Grade	'A' Grade
Slow Performer	Advance Learners	Slow Performer	Advance Learners

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## 2.2.1 Details of outcome measures

### Protocols to measure students' achievement:

1. **Adopts measurable criteria to identify slow performers:** Students securing below 50% marks in the first internal examination are categorized as slow performers
2. **Adopts measurable criteria to identify advance learners:** students securing more than 75% marks as advance learners.
3. **Remedial measures for slow performers:**

#### **Formal:**

1. These students are followed at the department level by faculty member.111
2. The remedial classes are conducted regularly in addition to regular classes for low performers by displaying time table and taking attendance.
3. Their performances are evaluated by conducting internal examinations periodically.
4. **Mentorship:** Mentors are assigned to all students in batches of 8-10. Slow Performers receive special attention from mentors and subject experts through close interactions. Regular interactive sessions, lab and hands on skill sessions are taken to overcome difficulties in a continuous manner.
5. **Parent- teachers Meeting (PTM):** They are regularly held subject wise wherein, the strength and weaknesses, attendance and academic performances are discussed with appropriate counselling and remedial measures.

**Outcome measures:** The outcome of slow performers in class tests, internal examinations, Preliminary examinations and summative assessments are analyzed to ascertain/ co-relate their consistency in improvement.

#### Students' Progress details and outcome measures:

- **Assessment:** Formative assessment: (2 Nos.) written and Practicals
- Remedial classes
- Mentorship

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• **Parents teacher meeting**

The students are identified as slow performers whose performance is unsatisfactory in the first internal (formative) examination. Remedial measures are taken along with mentorship programs and parents teacher meeting. The students' performance in the respective examinations and their attendance in the different semesters are discussed along with guidance and counselling is given for further improvement in academics. Remedial classes are also conducted during the diwali and summer vacations for the students who are shortage of attendance.

**Outcome Measures for Advance Learners:**

- **Identifying Criteria:** Students securing more than 75% marks in the first internal examination are categorized as advance learners.
- **Advanced learners:** Encouraged to participate in various competitions at state, national and international levels such as quizzes, paper / poster presentations, workshops, seminars, competitive exams, conferences and CMEs. Several of them have bagged awards and medals.
- Students are persuaded to apply for research grants from funding agencies.

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## **CRITERIA TO IDENTIFY SLOW PERFORMERS AND ADVANCED LEARNERS**

The students undergo orientation programs related to the concerned subjects in respective departments once admitted to the course in the institution. The orientation programs are designed by the faculty and the concerned committees that focus on developing the student capabilities pertaining to the course. Students are observed to know their academic performance, interest and professional skills.

The advanced and slow learners are identified after the first internal assessment examination after which remedial measures are being taken. The slow learners (Students who score less than 50%) interact with teachers on one on one basis who provide them personal guidance to face exams and tests. The slow learners undergo remedial classes in the form of microteaching and subjected to tests on a frequent basis. The progresses are assessed by the concerned faculty members and remedial measures are taken accordingly. Advanced learners (Students who score more than 75%) are provided with extra literature to further help to create interest. They are encouraged to score high marks and trained to aim for university ranks. They are also encouraged to attend seminars, workshops and conferences, and present scientific papers in regional, national and international conferences. They are guided by the concerned faculty to publish scientific articles in national and international journals.

Mentor-mentee system is designed and all the mentors are supervised by a mentor coordinator. Every mentor conducts monthly meetings with the mentees and they will produce a report to the coordinator. Remedial measures are taken subsequently after the coordinator submits the report.

  
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Students participation in CDE