2.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW:
PROSTHETIC SYLLABUS:

1. Introduction to Dental Materials 01 HR
   a) History of Dental Materials
   b) Scope
   c) Standardization of Materials

2. Bio-compatibility of Materials 02 HRS
   a) Tests for evaluation of Biocompatibility
   b) Allergic responses to Dental Materials
   d) Pulp responses to Experimental & clinical procedures

3. Physical Properties 03 HRS
   a) Abrasion & Abrasion Resistance
   b) Viscosity
   d) Creep & flow
   e) Color & color perception
   f) Thermo physical properties

4. Mechanical Properties 03 HRS
   a) Stress & Strain
   b) Mechanical properties (Elastic deformation, elastic modulus, flexibility, resilience, poisson'sratio)
   c) Strength Properties (Proportional limit, elasticlimit, yield strength, tensile strength, flexure strength, fatigue strength, impact strength)
   d) Ductility & malleability
   e) Hardness, Toughness, Brittleness

5. Hydrocolloid impression materials 04 HRS
   a) Classification & colloids
   b) Agar (Reversible Hydrocolloid)
   c) Manipulation of Agar imp. Material
   d) Alginate (Irreversible Hydrocolloid)
   e) Manipulation of Alginate imp. Material
   f) Care & properties of Hydrocolloid impression

6. Rigid impression materials 03 HRS
   a) Impression plaster
   b) Impression compound, composition, manipulation & properties
   b) Zinc oxide-Eugenol Impression Paste
   c) Physical and Mechanical Properties of Zinc Oxide-Eugenol impression paste
   d) Noneugenol paste

7. Elastomeric Impression Materials 03 HRS
   a) Overview of Elastomeric Impression Materials
   b) Polysulfide Impression Material

c) Condensation Silicone Impression Material
d) Addition Silicone Impression Material
e) Polyether Impression Material
g) New Advances in Impression Materials
h) Infection Control Concerns

8. Gypsum Products 04 HRS
   a) Types of Gypsum Products
   b) Uses of Gypsum in Dentistry
   c) Setting of Gypsum Products
   d) Tests for working, Initial Setting, and Final Setting Times
   d) Control of the Setting Time
   e) Setting Expansion
   f) Accelerators and Retarders; Practice and Theory
   i) Strength
   j) Infection Control Concerns

9. Dental Resins 04 HRS
   a) Classification of Resins
   c) Requisites for Dental Resin
   d) Cold cure denture base resins
   d) Heat-activated denture base resins
   e) Compression- molding Technique
   f) Injection molding technique

10. Dental casting alloys 03 HRS
   a) Historical Perspective on Dental Casting Alloys
   b) Desirable Properties of Casting Alloys
   d) Classification of Dental Casting Alloys
   e) Alloys for All-metal Restorations
   f) High Noble Alloys for Metal –ceramic Restorations
   h) Base Metal Alloys for Cast Metal and Metal ceramic Restorations

11. Die & Die materials 02 HRS
   a) Definition, Classification, Ideal requirements
   b) Types of die material, Advantages & Disadvantages

12. Dental Waxes 02 HRS
   a) Types of waxes
   b) Composition
   c) Desirable Properties
   d) Flow
   e) Thermal Properties
   f) Wax Distortion
   g) Manipulation of Inlay Wax
   h) Other Dental Waxes

13. Investment materials 03 HRS
   a) Gypsum –bonded Investments

b) Phosphate-bonded Investments
c) Ethyl Silicate- bonded Investment & their properties

14. Casting procedures 04 HRS
    a) Introduction
    b) Preparation of the master die
    c) The sprue former
    d) Casting ring liners
    e) Investment procedure
    f) Casting procedure
    g) Compensation for solidification shrinkage
    h) Causes of Defective castings

15. Tarnish & Corrosion 01 HRS
    Introduction
    Causes of Tarnish and Corrosion
    Classification of Corrosion
    Electrochemical Corrosion
    Corrosion of Dental Restorations
    Clinical Significance of Galvanic Currents

16. Dental ceramics 05 HRS
    a) Historical perspective on ceramic
    b) Classification of dental ceramics
    c) Methods of strengthening ceramic
    d) Metal ceramic restoration
    e) All-ceramic restoration

EXPECTED TO KNOW 04HRS

Bio-compatibility of Materials & Minimizing Dental Iatrogenesis 01 HR

Physical Properties 01 HR
Stress relaxation

Dental casting alloys 02 HRS
Alternatives to Cast Metal Technology
Noble Alloys for metal ceramic Restorations

CONSERVATIVE DENTISTRY SYLLABUS:

MUST KNOW: 30HRS

Introduction to Material Science
Dental Amalgam
Definition, History, Classification
Manufacturing, Composition, Roll of each ingredients
Low Copper & High Copper – Setting Reaction
Properties

Manipulation
Mercury toxicity and hygiene
Dental Cements
Introduction and Classification
Cavity Liners, bases and Varnishes
Calcium Hydroxide
Zinc Phosphate
Zinc Polycarboxylate
Zinc Oxide Eugenol and its modifications
Glass Ionomer cements and its modifications
Resin Cements Application, Classification, types, setting reaction, mode of supply, properties, factors affecting setting, manipulation, biocompatibility, advantages,
Disadvantages, uses and all other relevant information about above individual cements

Restorative Resins – Composite Resins
History, Classification, Composition
Polymerization, Filled and unfilled, Other types
Properties, Biocompatibility
Acid Etching in detail
Dentin Bonding Agents-Generations, Concepts
Sandwich technique
Pit & Fissure Sealants
Clinical Implications

Root Filling materials
Gutta Percha
Sealers

Direct Filling Gold
Types
Degassing
Properties
Compaction
Clinical Considerations

DESIRABLE TO KNOW: **05HRS**

Newer modified amalgams
Bonded amalgams

Dental Cements
Silicate cements
Zinc silico Phosphates
Restorative Resins – Composite Resins
Recent Advances
Indirect Composite materials
Root Filling materials
Mineral Trioxide Aggregate (MTA)
Advances in Obturating materials

Miscellaneous Materials
Smart Materials

2.3.3 EXAMINATION PATTERN

NAME OF EXERCISE	TIME ALLOTTED	MARKS ALLOTTED
Spotters	40 Mins	40
Manipulation	40 Mins	40
Journal	NA	10