COMBINED RESOLUTIONS
IMPLEMENTATION OF REVISED B.D.S REGULATIONS for 4yr B.D.S COURSE, 2011

DCI Letter No.DE-130-2011, dated 26/08/2011

Dr.D.Y.Patil Vidyapeeth, Board of Management, vide notification No- BM-39-11, dated 05/12/2011.
DCI Notification in Gazette of India extraordinary No. DE-130-2011, dated 25/08/2011.

The Hon'ble Vice Chancellor is pleased to order the implementation of the "Revised DCI Regulations for the BDS course, 3rd amendment, 2011."This notification is valid for all students admitted from 2008-2009. The students appearing for final BDS exam shall be required to appear for the following subjects:
1-Oral Medicine & Radiology
2-Oral Surgery
3-Periodontics
4-Prosthodontics
5-Conservative Dentistry
6-Community Dentistry
7-Orthodontics
8-Pedodontics.

SYLLABUS SPLIT INTO MUST KNOW (80%) AND DESIRABLE TO KNOW (20%)
Passed by the Dr.D.Y.Patil Vidyapeeth, Board of Management, vide notification No- BM-21(i)-13, dated 17/08/2013.

REVISED INTERNSHIP PROGRAMME 2011
DCI Letter No.DE-130-2011, dated 26/08/2011.
Dr. D.Y.Patil Vidyapeeth, Board of Management, vide notification No- BM-15 (I) -12, dated 23/10/2012.
DCI Notification in Gazette of India extraordinary No. DE-130-2011, dated 25/08/2011. Annexure-A
- BM-08(iv)-14 dt 28/01/2014 Regarding changes in Prosthetic Dentistry MDS Exam Pattern
- BM-08(v)-14 dt 28/01/2014 Regarding changes in Internship Quota in Prosthetic Dentistry.
- BM-32-14(i) dt 18/07/2014 Regarding changes in syllabus.

Student Attributes

Aims:
To create a graduate in Dental Science who has adequate knowledge, necessary skills and such attitudes which are required for carrying out all the activities appropriate to general dental practice involving the prevention, diagnosis and treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues. The graduate should also understand the concept of community oral health education and be able to participate in the rural health care delivery programmes existing in the country.

Objectives
The objectives are dealt under three headings namely (a) knowledge and understanding (b) skills and (c) attitudes.

(a) Knowledge and Understanding
The student should acquire the following during the period of training.

1. Adequate knowledge of the scientific foundations on which dentistry is based and good understanding of various relevant scientific methods, principles of biological functions and should be able to evaluate and analyse scientifically various established facts and data.
2. Adequate knowledge of the development, structure and function of the teeth, mouth and jaws and associated tissues both in health and disease and their relationship and effect on general-state of health and also the bearing on physical and social well-being of the patient.
3. Adequate knowledge of clinical disciplines and methods, which provide a coherent picture of anomalies, lesions and diseases of the teeth, mouth and jaws and preventive, diagnostic and therapeutic aspects of dentistry.
4. Adequate clinical experience required for general dental practice.
5. Adequate knowledge of biological function and behavior of persons in health and sickness as well as the influence of the natural and social environment on the state of health so far as it affects dentistry.

(b) Skills

A graduate should be able to demonstrate the following skills necessary for practice of dentistry:

1. Able to diagnose and manage various common dental problems encountered in general dental practice, keeping in mind the expectations and the right of the society to receive the best possible treatment available wherever possible.
2. Acquire skill to prevent and manage complications if encountered while carrying out various dental surgical and other procedures.
3. Possess skill to carry out required investigative procedures and ability to interpret laboratory findings.
4. Promote oral health and help to prevent oral diseases wherever possible.
5. Competent in control of pain and anxiety during dental treatment.

(c) Attitudes

A graduate should develop during the training period the following attitudes.

1. Willing to apply current knowledge of dentistry in the best interest of the patients and the community.
2. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
3. Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.
4. Willingness to participate in the continuing education programmes to update knowledge and professional skills from time to time.
5. To help and to participate in the implementation of national health programmes.

TEACHING HOURS

Teaching hours for each subject from first to final year – Theory and Practical are shown in the following Table.

TABLE - I Subjects and Hours of Instruction (B.D.S Course)

Sr. No	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1	General Human Anatomy including Embryology, Osteology and Histology	100	175	--	275
2	General Human Physiology, Biochemistry, Nutrition and Dietetics	120 70	60 60	--	180 130
3	Dental Materials	80	240	--	320
4	Dental Anatomy, Embryology, and Oral Histology	105	250	--	355
5	Dental Pharmacology and Therapeutics	70	20	--	90
6	General Pathology & Microbiology	55 65	55 50	--	110 115
7	General Medicine	60	--	90	150
8	General Surgery	60	--	90	150
9	Oral Pathology and Microbiology	145	130	--	275

Sr. No	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
10	Oral Medicine and Radiology	65	--	200	265
11	Paediatric & Preventive Dentistry	65	--	200	265
12	Orthodontics & Dental Orthopaedics	50	--	200	250
13	Periodontology	80	--	200	280
14	Oral & Maxillofacial Surgery	70	--	360	430
15	Conservative Dentistry and Endodontics	135	200	460	795
16	Prosthodontics & Crown & Bridge	135	300	460	895
17	Public Health Dentistry	60	--	290	350
Total		1590	1540	2550	5680

Note: There should be a minimum of 240 teaching days every academic year consisting of 8 working hours including one hour of lunch break.

SECTION 1

SECTION-1
CHAPTER-1

1.1. GENERAL HUMAN ANATOMY INCLUDING EMBRYOLOGY, HISTOLOGY AND OSTEOLOGY

1.1.1a **AIM**: To know the structure and organization of tissues, organs and apparata in the human body.

1.1.1b **OBJECTIVES:**
Knowledge and understanding: To understand the relationships between structure and function in the tissues and most organs in the human body.

Skills
The student shall gain perspective into the dissection processes of the human body.

Attitudes
The student shall learn to co-relate the anatomical structures with the body processes and pathologies.

1.1.1c OUTCOMES:
On successful completion of the program students will be able to:
Describe in detail the structure and function of musculoskeletal, cardio-respiratory, nervous and other associated systems.
Demonstrate advanced experiential knowledge and handling skills, in clinical examination of the musculoskeletal and nervous system.
Demonstrate advanced experiential knowledge in laboratory and field based exercise testing in athletic and non-athletic populations.
Demonstrate an advanced knowledge of the diagnosis, biological basis, treatment and rehabilitation of exercise and sports related injuries, and common illnesses impacting on sports and exercise performance.
Demonstrate a detailed knowledge and critical understanding of selected areas of sports and exercise medicine gained through independent research.

Apply an empirical approach to problem solving.

1.1.2 SYLLABUS (Including Teaching Hours)

1. General Anatomy: Anatomical terms, planes, brief outline of different systems of body.
2. Regional anatomy of head and neck with osteology of bones of head and neck with emphasis on topics of dental and maxillofacial importance
3. General disposition of thoracic ,abdominal and pelvic organs
4. Clinical anatomy : sites of intramuscular injections, intravascular injections, lumbar puncture
5. General Embryology and systemic embryology with reference to development of head and neck
6. Histology of basic tissues, head and neck structures and alimentary,respiratory, excretory systems, endocrine glands and gonads.
7. Medical genetics

I) MUST KNOW 80HRS

1) General Anatomy:

A. Anatomical terms
B. Skin, superficial fascia and deep fascia
C. Cardiovascular system, portal system, collateral circulation, arteries
D. Lymphatic system including lymphatic organs, and regional drainage
E. Skletal system: classification of bones, ossification and growth of bones.
F. Muscular system: classification of muscles.
G. Arthrology : classification of joints
H. Nervous system: Central, peripheral and autonomic nervous system.

2) Head and Neck :

A. Scalp , face, temple, lacrimal apparatus
B. Neck : Deep facia of neck , facial neck spaces , triangles of neck, deep structures in the neck
C. Cranial cavity : meninges, dural folds, dural venous sinuses,parts of brain, ventricles, cranial nerves attached to brain, pituitary gland
D. Cranial nerves – III,IV,V,VI,VII,IX, XII in detail.
E. Orbital cavity- bony orbit, ocular muscles, supports of eye ball, nerves and vessels of Orbit

F. Parotid gland
G. Infratemporal fossa, pterygo palatine fossa, muscles of mastication, temporomandibular joint
H. Nasal cavity
I. Paranasal sinuses
J. Oral cavity- tongue, soft and hard palate
K. Pharynx , palatine tonsil , auditory tube, Larynx
L. Osteology: adult skull, external features and interior of skull, individual skull bones, hyoid bones and cervical vertebrae.

3) Thorax:

A. Thoracic wall
B. Pleural cavity and pleura
C. Mediastinum
D. Lungs : surfaces, relations, blood supply and bronchopulmonary segments
E. Heart : pericardium, external features, chambers, and blood supply
F. Diaphragm

4) Clinical Procedures with anatomical background:

A. Intra muscular injections : Demonstrations on dissected person Deltoid- relation to axillary nerve Gluteus maximus- relation to sciatic nerve
B. Intravenous injections and Venesection:
   Demonstration of veins in dissected specimen and on a living person:
   1. Median cubital vein
   2. Cephalic vein
   3. Basilic vein
   4. Long sephanous vein
C. Arterial Pulsations in dissected bodies and on a living person:
   1. Superficial temporal
   2. Facial
   3. Carotid
   4. Axillary
   5. Brachial
   6. Radial
   7. Ulnar
   8. Femoral
   9. Polpiteal
   10. Dorsalis pedis
D. Lumbar Puncture : demonstration on a dissected specimen of spinal cord , cauda equina and at intervertebral space between L4 and L5.

5) Embryology:

A. Gametogenesis- male and female
B. Fertilization
C. Placenta
D. Primitive streak
E. Nurulation and neural crest
F. Bilaminar and triloaminar embryo
G. Formation and fate of intraembryonic mesoderm
H. Formation and fate of notchord
I. Pharyngeal arches clefts and pouches derivatives
J. Development of face, palate, tongue.
K. Development of thyroid, pituitary, salivary glands
L. Relevant developmental anomalies
M. Development of tooth

6) Histology:

A. Cell
B. Basic tissues: Epithelium, Muscle, Connective tissue and nervous tissue
C. Nervous tissue: peripheral nerve, optic neve,sensory ganglion, autonomic ganglion,
D. Skin
E. Lymphatic tissue,
F. Glands: Classification, salivary glands
G. Blood vessels, tongue, lip, tooth, soft palate, epiglottis, thyroid gland, parathyroid gland, pituitary gland

7) Medical genetics:

A. Mitosis and Meiosis
B. Chromosome structure and classification
C. Gene structure
D. Numerical and structural abnormalities
E. Pattern of inheritance

II) DESIRABLE TO KNOW: 20 HRS

Internal capsule, blood supply of brain, circle of Willis, Ventricles, corpus callosum

Imaging modalities, X ray skull,Paranasal sinuses,CT scan and MRI of skull, orthophantamograph of mandible

Mechanism of thorax
Abdominal organs and pelvic organs
Peritoneal cavity
Angiography and imaging of coronary vessels.
Brief osteology of femur, muscles of arm.
Brief ostrology of bones of gluteal region, gluteal muscles and structures under cover of gluteus maximus.
Brief study of anatomical landmarks with reference to peripheral pulsations.
Brief study of anatomical landmarks of back.
GIT
Kidney, ureter, urinary bladder, ovary and testes.
Mendelian laws. Gene mapping, Microdeletions and dental anomalies.

1.1.3 EXAMINATION PATTERN

Name of the exercise	Time Allotted	Marks Allotted
Identification of organs & slides	1.15 minutes	80
Journal	N.A	10

SECTION-1
CHAPTER-2

1.2.GENERAL PHYSIOLOGY AND BIOCHEMISTRY, NUTRITION AND DIETETICS

1.2.1.a AIM: In this course, students learn to recognize and to apply the basic concepts that govern integrated body function (as an intact organism) in the body's nine organ systems.

1.2.1.b OBJECTIVES:

a) Knowledge and Understanding:

It is expected that the student understand the unique role of each organ and organ system in maintaining health.

Students should be able to describe the functions of the distinctive cells that comprise each major organ and when appropriate define the role of physiological functional units.

b) Skills:

The students learn to recognize and explain the basic concepts that govern each organ and organ system and their integration to maintain homeostasis, as well as some clinical aspects of failure of these systems.

c) Attitude:

The students learn to identify bodily processes, which enables them to recognize impairments Thereof.

1.2.1.c GOALS:

Upon completion of this course the student should be knowledgeable in the following areas of bodily
function:

Integration of the organ systems to maintain constancy of the internal environment

Regulation of homeostasis by neuronal, endocrine, and local chemical messengers

Role of the Autonomic Nervous System in regulating organ function

Adaptive responses to exercise and the role of exercise in maintaining health

Adaptive physiological responses to stress, infectious organisms, and toxins

Changes in bodily function through the life span.

Demonstrate knowledge of the molecular structures of fundamental biological building blocks.

1.2.2 SYLLABUS (Including Teaching Hours)

A. GENERAL PHYSIOLOGY

MUST KNOW- 100HRS

1. **HOMEOSTASIS**:
   Basic concept, Feedback mechanisms
   Structure of cell membrane, transport across cell membrane
   Membrane potentials

2. **BLOOD:**
   Composition & functions of blood.
   Specific gravity, Packed cell volume, factors affecting & methods of determination.

   Plasma proteins - Types, concentration, functions & variations.

   Erythrocyte - Morphology, functions & variations. Erythropoiesis & factors affecting erythropoiesis.

   ESR- Methods of estimation, factors affecting, variations & significance.

   Haemoglobin - Normal concentration, method of determination & variation in concentration.

   Anaemia - Definition, classification, life span of RBC's destruction of RBCs , formation & fate of bile pigments, Jaundice - types.

   Leucocytes : Classification, number, percentage, distribution morphology, properties, functions & variation. Role of lymphocytes in immunity, leucopoiesis life span & fate of leucocytes.

   Thromobocytes - Morphology, number, variations, function & thrombopoiesis.

   Haemostatsis - Role of vasoconstriction, platelet plug formation in haemostasis, coagulation factors, intrinsic & extrinsic pathways of coagulation, clot retraction.

Tests of haemostatic function, platelet count, clotting time, bleeding time, prothrombin time – normal values, method & variations. Anticoagulants - mechanism of action. Bleeding disorders.
Blood groups: ABO & Rh system, method of determination, importance, indications & dangers of blood transfusion, blood substitutes.

Blood volume: Normal values, variations.

3. MUSCLE AND NERVE:

Classification of nerves, structure of skeletal muscle – Molecular mechanism of muscle contraction, neuromuscular transmission. Properties of skeletal muscle.

Structure and properties of cardiac muscle & smooth muscle.

4. DIGESTIVE SYSTEM:

Introduction to digestion: General structure of G.I. tract, Innervation.
Salivary glands: Structure of salivary glands, composition, regulation of secretion & functions of saliva.

Stomach: Composition and functions of gastric juice, mechanism and regulation of gastric secretion.

Exocrine Pancreas - Structure, composition of pancreatic juice, functions of each component, regulation of pancreatic secretion.

Liver : structure , composition of bile, functions of bile, regulation of secretion

Gall bladder : structure, functions.
Small intestine - Composition, functions & regulation of secretion of intestinal juice.

Large intestine - Functions.

Motor functions of GIT: Mastication, deglutition, gastric filling & emptying, movements of small and large intestine, defecation.

5. EXCRETORY SYSTEM :

Structure & functions of kidney, functional unit of kidney & functions of different parts.

Juxta glomerular apparatus, renal blood flow.

Formation of Urine : Glomerular filtration rate - definition, determination , normal values, factors influencing G.F.R. Tubular reabsorption - Reabsorption of sodium, glucose, water & other substances.

Tubular secretion - secretion of urea, hydrogen and other substances. Mechanism of concentration & dilution of urine.

Role of kidney in the regulation of pH of the blood.

Micturition, anatomy & innervation of Urinary bladder mechanism of micturition & abnormalities.

6. BODY TEMPERATURE

7. ENDOCRINOLOGY

General endocrinology - Enumeration of endocrine glands & hormones - General functions of endocrine system, chemistry, mechanism of secretion, transport, metabolism, regulation of secretion of hormones.

Hormones of anterior pituitary & their actions, hypothalamic regulation of anterior pituitary function.

Disorders of secretion of anterior pituitary hormones.

Posterior pituitary : Functions, regulation & disorders of secretion.

Thyroid: Histology, synthesis, secretion & transport of hormones, actions of hormones, regulation of secretion & disorders, Thyroid function tests.

Adrenal cortex & Medulla -synthesis, secretion, action, metabolism, regulation of secretion of hormones & disorders.

8. **REPRODUCTION**

Sex differentiation, Physiological anatomy of male and female sex organs,

Female reproductive system : Menstrual cycle, functions of ovary, actions of oestrogen & Progesterone, control of secretion of ovarian hormones, tests for ovulation, fertilisation, implantation, maternal changes during pregnancy, pregnancy tests & parturition.

Lactation, composition of milk, factors controlling lactation, milk ejection, reflex, Male reproductive system :spermatogenesis, semen and contraception.

9. CARDIO VASCULAR SYSTEM

Functional anatomy and innervation of heart Properties of cardiac Muscle Origin & propagation of cardiac impulse and heart block.

Electrocardiogram - Normal electrocardiogram. Two changes in ECG in myocardial infarction.

Cardiac cycle - Phases, Pressure changes in atria, ventricles & aorta. Volume changes in ventricles. arterial pulse.

Heart sounds: Mention of murmurs.

Heart rate: Normal value, variation & regulation.
Cardiac output: Definition, normal values, one method of determination, variation, factors affecting heart rate and stroke volume.
Arterial blood pressure: Definition, normal values & variations,determinants, regulation & measurement of blood pressure.

10. RESPIRATORY SYSTEM

Physiology of Respiration : External & internal respiration.

Functional anatomy of respiratory passage & lungs.

Respiratory movements: Muscles of respiration, Mechanism of inflation & deflation of lungs.

Intra pleural & intra pulmonary pressures & their changes during the phases of respiration.

Mechanics of breathing - surfactant, compliance & work of breathing.

Spirometry: Lung volumes & capacities definition, normal values, significance, factors affecting vital

capacity, variations in vital capacity, FEV & its variations.

Pulmonary ventilation - alveolar ventilation & dead space – ventilation.

Exchange of gases: Diffusing capacity, factors affecting it.

Transport of Oxygen & carbon dioxide in the blood.

Regulation of respiration – neural & chemical.

Hypoxia, cyanosis, dyspnoea, periodic breathing.

11. CENTRAL NERVOUS SYSTEM

Organisation of central nervous system
Neuronal organisation at spinal cord level
Synapse receptors, reflexes, sensations and tracts
Physiology of pain
Functions of cerebellum, thalamus, hypothalamus and cerebral cortex.
Formation and functions of CSF
Autonomic nervous system

12. SPECIAL SENSES

Fundamental knowledge of vision, hearing, taste and smell.

EXPECTED TO KNOW- 20 HRS

Blood Indices - MCV, MCH, MCHC - definition, normal values, variation.
Body fluids : distribution of total body water, intracellular & extracellular compartments, major
anions & cations in intra and extra cellular fluid.
Tissue fluids & lymph : Formation of tissue fluid, composition, circulation & functions of lymph.
Oedema - causes.
Functions of reticulo endotrelial system.
Functions Of Skin.
Other hormones - Angiotensin, A.N.F.
Coronary circulation.

Cardio vascular homeostasis - Exercise & posture
Jugular venous pulse
Artificial respiration, pulmonary function tests.
Composition of inspired air, alveolar air and expired air.

HUMAN BIOCHEMISTRY , NUTRITION & DIETETICS

MUST KNOW 50HRS

A) Chemistry of Carbohydrates:

Definition, Classification &Functions of Carbohydrates
Biological importance of Monosaccharides
Chemical properties of Monosaccharides
Osazone Formation of Monosaccharides
Derivatives of Monosaccharides
Structure of maltose, sucrose & Lactose,
Structure of starch &Glycogen & their functions.
Structure and functions of glycose aminoglycons.

B) Chemistry of Lipids

Definition, Classification & Functions of Lipids
Fatty acids and their classification & functions.
Essential fatty acids and its functions.
Phospholipids and their Functions.
Glycolipids and its functions
Prostaglandins and its functions
Steroids, Bile salts, micelle
Cholesterol and its functions
Lipoproteins and its classification.
Lipoproteins and their site of synthesis and functions.

C) Chemistry of Proteins

Structure of Aminoacids found in protein, classification,
Nutritional classification of amino acids.
Importance of Amino Acids
Biologically important compounds formed by amino acids.
Properties of amino acids
Biologically important Peptides
Structure of proteins
Primary, secondary, tertiary And quaternary
Zwitter ion, isoelectric PH
Definition, classification (functional) of proteins

Classification based on physical & chemical properties.
Functions of Albumin

D) Enzymes

Definition, zymogen or Proenzyme
Co-factors,
Mechanism of enzyme action
Classification of enzymes
Specificity factors affecting enzymes activity.
Enzyme inhibition, types of Inhibitors.
Types,composition, location and diagnostic importance of lactate dehydrogenase, creatine kinase.
Isoenzymes.
Diagnostic importance of different enzymes

E) Vitamins (Micronutrients):

Definition, Classification, Sources, Daily Requirement, Functions & deficiencies of
Vit. B1 & B2
Vit B3 & B5
Vit B6 & B7
Folic acid (Vit B9)
Cynocobalmin (Vit B12)
Ascorbic acid with functions, sources, daily requirement
Functions, sources, daily requirement of Vit.A with its deficiencies including visual process.
Vit D & its role in calcium Metabolism
Vit. E & Vit K.

F) Hemoglobins (Haemoglobin):

Bilirubin.
Chemistry & Functions of Haemoglobin.
Introduction to hemesynthesis
Heme degradation and types of normal and abnormal haemoglobin.
Types of Jaundice

G) Nucleic Acids

Introduction of nucleic acids
Building units Nucleotides
Types of RNA
Outline structure & functions of DNA & RNA

H) Biological Oxidations

Introduction, Enzymes & Coenzymes of BiologicalOxidation.
ETC(Electron Transport Chain) Or Respiratory Chain
Reactions of electron transport chain.
Oxidative Phosphorylation, Inhibitors & uncouplers of oxidative phosphorylation

I) Nutrition:

Energy needs: Basal metabolic rate, dietary carbohydrates Fibres, dietary lipids, essential fatty acids.
Nitrogen Balance, essential amino acids, protein quality and requirement.
Protein Calorie Malnutrition
Kwashiorkar's disease
Marasmus
Balance Diet

J) Energy Metabolism:

Enzymaic hydrolysis of dietary carbohydrates, mechanism of uptake of monosacchorides
Synthesis and breakdown of Glycogen (glycogenesis & Glycogenolysis)
Outline of glycolysis,
Rapaport Luebering cycle,
lactate metabolism.
Glucogenic & Ketogenic amino Acids.
Pyruvate oxidation & citric acid cycle.
Oral GTT & glycosuria, diabetes mellitus and related disorder.
Blood glucose level & its regulation.
Gluconeogenesis
Digestion and Absorption of
Triglycerols.
Metabolism of Ketone bodies:

a) Ketogenesis
b) Ketolysis
c) Ketosis

Functions of Cholesterol
Adipose tissue metabolism
Lipolysis, Lipogenesis
Digestion and Absorption of Proteins
Amino acid pool
Nitrogen Balance

a) Transamination
b) Deamination

c) Transmethylation
Fate & Formation of ammonia Urea cycle

K) Mineral Metabolism:

Definition, Classification and Daily Requirement of Calcium, Phosphorus sources, uptake, excretion and function.
Trace Elements Def. eg. Copper, zinc, magnesium, Chromium, Cobalt, Manganese,
Molybolenum, Selenium
Serum Calcium regulation, iron sources, uptake, transport.
Iodine: Brief introduction to Thyroxine synthesis, general functions of thyroxine .
Fluoride:- Functions, deficiency & excess.
Role of other minerals Sodium, Potassium, Chloride.

L) Metabolic Regulation:

Hormones: Definition, General characteristics, Classification.
Mechanism action of steroid Hormones.
Epinephrine, glucagone & insulin in brief.
Acid base regulation.
Water and electrolyte balance
Detoxification Mechanism.

M) Structural components & blood proteins:

Connective tissue, collogen & Elastin, Structure of bone and membranes.
Myofibrils & Muscle Contraction.

N) Medical Biochemistry:

Blood sugar level and its regulation.
Oral GTT & glycosuria
Diabetes mellitus & related disorders.
Jaundice: Classification & evaluation.
Liver Function tests:-
Kidney Function tests
Gastric Function tests
Gout; Lesch Nyhanes Syndrome,

O) Genetics:

DNA as genetic material
Replication & Transcription
Gebetuc cide & mutations
Translation process

Introduction to cancer, viruses Oncogenes.
PCR Recombinant DNA Technology Applications.

DESIRED TO KNOW 20HRS

Structure of glucose, Isomerism, Epimerism, Anomerism, Mutarotation

Prostaglandins and its functions
Steroids, Bile salts, micelle
Properties of proteins
Denaturation, denaturing agents
Significance of denaturation.
Coagulation of proteins.
Plasma proteins, Seperation of plasma proteins.
Immunoglobulins: Structure Types and their functions.
Michaelis – Menton Equation and its significance.

Allosteric Enzymes

Active forms of all water soluble vitamins and Vit A & Vit D.
To know the absorption, transportation and storage of
Vit A,D, E & K

Direct bilirubin & indirect

Haemoglobin derivatives.
Difference between DNA & RNA
Nucleotides, Biologically important free nucleotides

Substrate level phosphorylation
S.D.A (Specific dynamic action)

HMP shunt pathway and its significance.
Glucuronic acid formation.
Hyperglycemia & Hypoglycemia
-Outline of Cholesterol biosynthesis & breakdown
-Fatty acid synthesis
Fatty liver, Lipotropic factor
Atheroselerosis

Metabolism of glycine
a) Synthesis
b) degradation.

Metabolism of sulphur containing aminoacids
Eg. Methionine, cystein, Cystine one carbon metabolism
Heme & non-heme iron & its functions, deficiency.
Second messenger
CAmp, Calcium ion
Inositol triphosphate

Hyperglycemia
Hypoglycemia
Hyperlipoprotenemia

1.2.3 EXAMINATION PATTERN

Name of the exercise	Time Allotted	Marks Allotted
Haematology	1Hr 20Min	25
Clinical Physiology	40 Min.	15
Biochemistry Experiment-A	60 Mins.	20
Biochemistry Experiment -B	55 Mins.	15
Spot-C	05 Mins.	05
Journal Record-	N.A	
(a)Physiology		5
(b)Biochemistry		5

SECTION-1
CHAPTER-3

1.3 DENTAL ANATOMY, EMBRYOLOGY AND ORAL HISTOLOGY

1.3.1a: AIM: The dental students should acquire complete knowledge of embryology, anatomy and physiology of hard and soft tissues of oral and paraoral region and to train dental graduates so as to ensure competence and necessary skills in the diagnosis and prevention of dental and oral diseases.

1.3.1b: OBJECTIVES:

i-KNOWLEDGE AND UNDERSTANDING:

Adequate knowledge about the morphology of the teeth.

Adequate knowledge about histology of teeth and other oral structures.

Adequate knowledge of the embryology, development of face, tooth and salivary glands.

ii-SKILL:

Able to carve teeth of permanent dentition

Able to differentiate the normal from abnormal tissues based on macro and microscopic features.

iii-ATTITUDES:

1. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
2. To apply the knowledge of morphology of the teeth in the clinical practice of restorative dentistry.

1.3.1c: OUTCOME: Student is able to complete clinical practises optimally.

1.3.2 : SYLLABUS (Including Teaching Hours.)

DENTAL ANATOMY

I) Must Know 95 HRS

1) Introduction 04 HRS

Definitions and Nomenclature in Dental Anatomy

Tooth numbering systems

Differences between permanent and deciduous dentition

Definition of elevations and depressions on the tooth

Different Traits

2) Maxillary Incisor 03 HRS
Introduction
Chronology
Crown morphology
Root morphology
Pulp morphology

3) Mandibular Incisor 03 HRS
Introduction
Chronology
Crown morphology
Root morphology
Pulp morphology

4) Maxillary / Mandibular Canine 03 HRS
Introduction
Chronology
Crown morphology
Root morphology
Pulp morphology

5) Maxillary Premolar 03 HRS
Introduction
Chronology
Crown morphology
Root morphology
Pulp morphology

6) Mandibular Premolar 03 HRS
Introduction
Chronology
Crown morphology
Root morphology
Pulp morphology

7) Maxillary molar 03 HRS
Introduction
Chronology
Crown morphology
Root morphology
Pulp morphology

8) Mandibular molar 03 HRS
Introduction
Chronology
Crown morphology
Root morphology
Pulp morphology

9) Occlusion 05 HRS
Development of occlusion
Concepts
Theories
Keys to occlusion
Teeth & jaw associated factors
Occlusion in dentures

10) Morphology of individual deciduous tooth 02 HRS

DENTAL HISTOLOGY

1) Histotechniques 02 HRS
Introduction
Fixation
Tissue processing
Staining
Ground section
Special stains
Clinical implications

2) Development of face and oral cavity(Embryology) 06 HRS
Origin, development and differentiation of facial tissues
Branchial arches
Development of face, Tongue and palate
Development of Mandible ,Maxilla

3) Development of teeth 03 HRS
Dental lamina
Developmental and histophysiological stages of teeth
Development of root

4) Enamel 04 HRS
Introduction
Physical and chemical properties
Structures (Enamel rods, lamellae ,tufts, spindles, Hunter Schreger bands, dentinoenamel junction)
Amelogenesis: Life cycle of ameloblast

5) Dentin 06 HRS
Introduction
Physical and chemical properties
Structures
Dentinogenesis
Types of dentin
Theories of Hypersensitivity
Functions

6) Maxilla and Mandible (alveolar process) 05 HRS
Definition and development
Anatomy
Classification
Types of Ossification
Alveolar bone
Histology of bone
Bone morphogenic protein
Bone Remodeling & factors affecting

7) Eruption and shedding 03 HRS
Theories of eruption
Pre-eruptive,Eruptive and Post-eruptive tooth movement
Definition and Shedding pattern
Histology of shedding
Mechanism of resorption and shedding
Clinical considerations

8) Pulp 04 HRS
Development, Anatomy and Structure
Histology of pulp
Functions

9) Cementum 06 HRS
Introduction
Physical and chemical properties
Structures

Histology & cementogenesis
Types of cementum, cemento-enamel junctions
Functions

10) Maxillary sinus 01 HRS
Definition and development
Anatomy
Functions
Histology

11) Salivary glands 06 HRS
Embryogenesis
Classification
Anatomy of major and minor salivary glands
Histology of major and minor salivary glands
Saliva: Composition,formation and functions of saliva

12) Periodontal ligament 04 HRS
Development & Classification
Histology: cells and fibres
Functions

13) Oral Mucous Membrane(OMM) 12 HRS
Definition and classification of OMM
Types of epithelium
Histology of keratinized and non keratinized epithelium
Non-Keratinocytes
Clinical and histological aspects of buccal mucosa,gingiva, palate, floor of the mouth,vermilion border.
Tongue-clinical and histological aspects of papillae and taste buds
Junctional epithelium

14) Temporomandibular Joint 02 HRS
Anatomy
Development
Histology
Clinical considerations

15) Muscles of Mastication and Deglutition 02 HRS

Desirable to know 12HRS
1- Special stains 03 HRS

-Immuno histochemistry & enzyme histochemistry (suggested) - Applied aspects of Development of face and oral cavity (Embryology) 01 HRS

3-Molecular aspects of tooth genesis Applied aspects of Development of teeth 02 HRS

3- Applied aspects of enamel, dentin, pulp cementum, maxillary sinus, salivary glands, periodontal ligament, oral mucous membrane, temporomandibular joint, muscles of mastication, deglutition. Bone morphogenic protein, Bone Remodelling & factor affecting it, Bone Grafts 08 HRS

4- Applied aspects of eruption and shedding 01HR

1.3.3 EXAMINATION PATTERN

Name of the exercise	Time allotted	Marks
Tooth carving	45 minutes	20
1- Identification of slides (8) : 5 marks each 2- Identification of specimens(4): 5 marks each	40 minutes	60
3. Journal	-	10

SECTION 2

SECTION-2
CHAPTER-1
2.1. GENERAL PATHOLOGY & MICROBIOLOGY

2.1.1.a Aim: The aim of this course is to provide graduate-level instruction in Pathobiology and microbiology. The study of biochemical, structural and functional changes in cells, tissues and organs, which cause or are caused by diseases and the micro-organisms that cause infections.

2.1.1. b Objectives:

i-Knowledge and understanding:
To become familiar with pathology nomenclature. By the end of the course, the students are expected to be able to communicate an understanding of tissue injury and diseases processes, using appropriate vocabulary.
To recognize morphological and functional differences between normal and injured or diseased tissue.
To acquire a working knowledge of basic bacterial laboratory techniques, as well as to the foundations of Microbiology – the concepts of classification, evolution and growth of microorganisms, as well as a factual and laboratory knowledge of specific microorganism types.
ii-Skills: To learn to distinguish pathological lesions from normal tissue. The second goal is to understand, from a structural, functional and biochemical perspective, the different types of pathological lesions, and provide scenarios for how they each arise.
To develop an understanding of microbial ecology and of medical and practical uses for microorganisms, and how they relate to basic biological concepts.
iii-Attitudes:
To integrate pathological findings with clinical manifestations of disease
To integrate the principles and information presented in this course with that from related disciplines

2.1.1.c Outcomes:

Students are expected to work towards meeting the following objectives:
To become familiar with pathology nomenclature. By the end of the course, the students are expected to be able to communicate an understanding of tissue injury and diseases processes, using appropriate vocabulary.

To recognize morphological and functional differences between normal and injured or diseased tissue. The first goal of the course is to learn to distinguish pathological lesions from normal tissue. The second goal is to understand, from a structural, functional and biochemical perspective, the different types of pathological lesions, and provide scenarios for how they each arise.
To integrate pathological findings with clinical manifestations of disease.
In working towards a current understanding of the pathologic basis of disease, the student should develop a sense of which questions in pathology remain to be resolved.
Students should acquire a good understanding of the concepts above. They should be able to show their mastery of them in oral and written form, in lecture, in the laboratory and in exams.
They should be able to design experiments to identify microorganisms, interpret the data and communicate it.

2.1.1.d: SYLLABUS (Including Teaching Hours.)

MUST KNOW 50 HRS

1. Introduction to Pathology
   - Different sections in pathology
   - The Cell in health
   - Normal cell structure
   - The Cellular functions

2. Definitions & causes of diseases
   - Aetiology & Pathogenesis of diseases.
   - Congenital /Acquired diseases
   -Morphological changes
   - Functional derangements & clinical manifestation.
   - Cellular response to stress & noxious stimuli

3. Mode of cell Injury
   -Different agents causing cell injury
   -Hypoxic /Chemical /physical injury.
   -Mechanism of reversible injury.
   -Mechanism of irreversible injury.

4 Cellular adaptations & intracellular accumulations
   -Reversible cell injury (Degeneration)
   -Fatty Change

-Cloudy change
-Hyaline change

5. Disturbances of pigment & mineral metabolism
   - Exogenous /Endogenous pigments
   - Dystrophic /metastatic calcification mecha., Causes etc.

6. Acute inflammation I
   - Definition
   - Types
   - Causes, Historical aspects
   - Cellular events
   - Vascular events.

7. Acute inflammation II
   - Chemical mediators
   - Fate of inflammation

8. Chronic inflammation
   - Defnition
   - Causes
   - Granulomatous inflammation .

9. Repair I
   - Repair
   - Regeneration
   - Healing by primary intension
   - Healing by secondary intension

10. Repair II
    -Types of fracture
    -Healing of a fracture
    -factors affecting wound healing.
    -complications of healing.

11. Necrosis / Gangrene
    -Def., Causes
    -Types of necrosis
    -Features of necrosis
    -Gangrene – Definition Dry/wet/gas

12. Thrombosis
    -Normal homeostasis
    - Definition of thrombus
    -Path physiology, Complications
    -Fate

13. Embolism.
    - Definition
    -Types
    -Effects

14. Infarction
    -Definition
    -Aetiology, Types
    -Changes in different organs.

15. Derangements of body fluids.
    - Oedema – Pathogenesis.
    - Different Types
    - Clinical manifestations.

16. Disorders of circulation.
    - Hyperemia – Definition, Types, Causes.
    - Chronic Passive Venous Congestion of different Organs
    - Shock - Different type , Pathogenesis

17. Amyloidosis.
    - Chemical nature
    - Physical nature
    - Diagnosis
    - Special stains.

18. Hypersensitivity reaction /Transplant Rejection
    - Humoral & cellular immunity
    - Mechanism of hypersensitivity reactions Type I-IV

19. Leprosy
    -Epidemiology
    -Pathology
    -Types
    -Diagnosis

20. Syphilis.
    -Epidemiology
    -Types /Stages
    -Pathological features
    -Diagnosis

21. Tuberculosis I
    -Epidemiology, Pathogenesis.
    -BCG vaccine /Tuberculin Test
    -Lesions of primary TB .

22. Tuberculosis II
    -Secondary TB Lesions
    - Complications
    -Diagnosis
    -Extra pulmonary TB

23. Fungal Diseases
    -Etiological agents
    -Types of lesions
    -Morphology
    -Diagnosis

24. Adaptive Disorders
    -Atrophy
    -Hypertrophy / Hyperplasia
    -Metaplasia / Dysplasia.

25. Neoplasia – Nomenclature
    - Definition
    -Terminology
    -Classification
    -Difference between benign & malignant tumors

26. Neoplasia - Carcinogenesis
    -Epidemiology
    -incidence
    -Geographic & environmental factors
27. Neoplasia -Carcinogenesis
    -Different Carcinogenic agents
    -Chemical Carcinogenesis
    -Radiation Carcinogenesis
    -Microbial Carcinogenesis

28. Neoplasia – Staging & Spread .
    -Mechanism of invasion & metastasis.
    -Grading & staging of tumors

29. Lab diagnosis of cancer
    -Histologic & Cytologic methods
    -IHC
    -Molecular diagnosis
    -Tumors markers

30. Tumors of oral cavity & skin
    - Pigmented & non pigmented tumors of skin
    -Precancerous lesions of oral cavity
    -Squamous cell carcinoma
    -Basal Cell carcinoma
    -Malignant melanoma .

31. Diseases of salivary glands
    -Normal structure
    -Sialadenitis
    -Mikulicz disease
    -Tumors of salivary gland

32. Diabetes Mellitus
    - Definition
    - Classification
    - Pathogenesis
    - Clinical features
    - Diagnosis
    - GTT

33. Atherosclerosis
    -Definition
    -Pathogenesis
    -Complications

34. Other Diseases of oral carity
    -Lichen Planus
    -Leukoplakia
    -Dental caries
    -Dentigerous Cyst

35. Common Diseases of bone
    -Osteomyelitis
    -Metabolic bone diseases
    -Tumors of jaw

36. Diseases of CVS
    -Cardiac Failure
    -IHD
    -Endocarditis etc.

37. Hypertension
    - Definition, classification

38. AIDS

DESIRABLE TO KNOW

Genetic basis of diseases
Patterns of inflammation
Cell cycle
Chemical Mediators Responsible for repair
Apoptosis
Morphologic changes in disorders of circulation
Morphology of Organs in amyloidosis
Mechanism of transplant rejection
Molecular basis of cancer
Paraneoplastic syndromes
Recent Advances In Diagnosis
Pathology of different organs in diabetes mellitus
Congenital Heart Diseases
Effects on various organs in hypertension

Hematology

MUST KNOW 15HRS

1. Introduction to hematology & haemopoiesis .
    -Normal development of blood cells.
    -Origin & differentiation of haemopoietic cells
    -General aspects of bld. Disorders
    -Blood Indices .

2. Classification & general features of anaemia
    -Etiological /Pathophysiological Classification
    -Morphological classification

-General features of anemia

3. Microcytic anaemias
   -Iron deficiency anemia
   - Iron metabolism
   -Morphology
   -Lab. Diagnosis
   -Differential diagnosis.

4. Macrocytic Anaemias
   -Causes of Macrocytosis
   -Megaloblastic anemia
   -B12 deficiency
   -folate deficiency
   -Morphology PBS, B.M.
   -Lab. Diagnosis.

5. Hemolytic anemia
   -Features .classification
   -Intravascular & extra vascular haemolysis
   -signs of haemolysis .
   -Acute Leukemia I
   -Definition
   -Aetiopathogenesis.
   -Classification
   -Acute Myeloid Leukemia

6. AC. Leukemia II
   Acute Lymphocytic Leukemia
   Clinical Features & Lab diagnosis of Ac. Leukemia

7. Chronic Leukemia.
   -Classification
   -Aetiopathogenesis
   -Morphology, Chronic Myeloid & Lymphoid Leukaemias
   -Lab. Diagnosis.

8. Other WBC & RBC disorders
   -Leukocytosis
   -Leukaemoid reaction
   -Leucopenia
   - Polycythemia

9. Hemorrhagic Disorder I
   -Coagulation cascade
   -Classification of bleeding disorders.
   -Disorder related to thrombocytopenia, defective platelet function.

10. Hemorrhagic Disorder II
   -Related to clotting factor abnormality.
   -Hemophilia A,B .
   -vW Disease.
   -DIC
   -Lab diagnosis

11. Blood groups
   -Historical aspects
   -Classification
   -Importance

12. Blood transfusion
   -Selection of donor
   - Different blood group system
   -Blood components
   -Cross matching
   -Transfusion reactions

II) DESIRABLE TO KNOW 05 HRS
   -Sickle cell anemia
   -Thalassemia
   - Diagnosis
   -Diseases Transmitted during blood transfusion

GENERAL MICROBIOLOGY

MUST KNOW 55 HRS

General Microbiology 08 HRS
1. Introduction, History, Scope, Aim & objective
2. Morphology and Physiology of Bacteria
3. Sterilization and Disinfection
4. Culture media and culture techniques
5. Normal microbial flora of oral cavity
6. Oral microbiology and dental plaque and dental Caries

Immunology 11 HRS

1. Infection
2. Immunity
3. Antigen
4. Antibodies
5. Antigen – Antibody reactions & Immunodeficiency disorder
6. Hypersensitivity reactions + autoimmune disorders

Systematic Bacteriology 19 HRS

1. Staphylococcus
2. Streptococcus, Cariogenic Streptococci
3. Pneumococcus
4. Neisseria : Meningococcus (mainly)
5. Corynbacterium diptheriae
6.Mycobacterium Tuberculosis
7. M. Leprae & Atypical mycobacteria
8. Clostridium perfringeus
9-Clostridium tetani
10. Non – sporing anaerobes
11. Spirochaetes
12. Noscomial infection

Virology 10HRS

1. Introduction & General Properties of viruses
2. A few viruses of relevance to dentistry

•Herpes virus
•Hepatitis B viruses including HCV , HDV
•Human Immunodeficiency Virus (HIV)
•Mumps Virus , Measles & Rubella Virus

Mycology 04 HRS

1. Introduction
2. Candidiasis
3. Briefly on oral lesions of Systemic Mycoses
4. Cryptococcus & Histoplasma

Parasitology 03 HRS

1. Introduction
2. Mode of transmission and prevention of commonly seen parasitic infection:

•Amoebae, leishmania
•Protozoa

E. histolytica ,Malaria, Helminths
Round worm , Hook Worm , Tape worm

DESIRABLE TO KNOW **10 HRS**

Bacterial genetics and drug resistance in bacteria
Structure and functions of Immune system
Complement system
Immune response
Enterobacteriaceae- 1 , 2 & 3
Vibrio cholera
Actinomycetes
Biosafety & Biomedical waste management
Cultivation
Host -virus interaction
Brief account of laboratory diagnosis & immune prophylaxis in general populations.
Protozoa, Giardia, Trichomonas, Helminths, W. bancrofti

2.1.4 EXAMINATION PATTERN

General Pathology

Name of the exercise	Time Allotted	Marks Allotted
Spot Identification.	10 Mins.	10
Table Work- Clinical Pathology/ Haematology	1 hour	20
Histopathology Slides.	30 Mins.	10
Journal	N.A	10

General Microbiology

Name of the exercise	Time Allotted	Marks Allotted
Spot Identification	10 Mins.	10
Staining	1 hour	20
Journal	N.A	10

SECTION-2
CHAPTER-2
GENERAL & DENTAL PHARMACOLOGY & THERAPEUTICS

2.2.1.a: AIM:

The central aim of Pharmacology as the course is two-fold. First, to provide the students with a solid grounding in the basic concepts and scientific underpinnings of Pharmacology. Second, to provide the students with a comprehensive introduction to the fundamental Pharmacology and uses of the major classes of clinically important drugs currently used in medical practice.

2.2.1.b: OBJECTIVES:

i-KNOWLEDGE AND UNDERSTANDING:

To understand the fundamental scientific principles of drug action and the various mechanisms by which drugs can mediate their pharmacological effects.

To understand the fundamental principles of pharmacokinetics that underly the absorption, distribution, metabolism and elimination of drugs in the body and thereby affect drug effectiveness.
To understand the biochemical reactions that result in the metabolism of drugs within the body.

ii-SKILLS:

To understand the rationale behind designing different dosing regimens of particular drugs in specific patient populations.
To understand how specific patient characteristics and genetics can affect the response to a particular class of drugs.

iii-ATTITUDES:

To understand the implications of drug prescriptions and prescribing the best possible drug regime.

2.2.1.c: OUTCOMES:

The student at the end of this program should be able to rationally treat a patient with no adverse outcomes.

2.2.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW- **60HRS**

General Pharmacology
Drugs acting on the Autonomic Nervous System
Drugs acting on the Central Nervous System
Drugs acting on the Cardiovascular and Renal System
Antimicrobial drugs
Antihistaminics
Antidiabetic Drugs
Corticosteroids
Pharmacotherapy of emergencies in dental practice

DESIRABLE TO KNOW **15HRS**

Drugs acting on blood
Drugs acting on the Gastrointestinal System
Drugs acting on the Respiratory System
Vitamins
Chelating Agents
Antithyroid Drugs
Skeletal Muscle Relaxants
Drugs affecting calcium balance

2.2.3 EXAMINATION PATTERN

Name of the exercise	Time Allotted	Marks Allotted
Drug of choice (Single drug preparation) (4 drugs)	15 Mins.	20
Pharmacy Written (1 preparation)	15 mins.	30
Rewrite the wrong prescription	15 Mins.	15
Fixed drug combination	15 Mins.	15
Journal	N.A	10

SECTION-2
CHAPTER-3

2.3 DENTAL MATERIALS

2.3.1.a: Aim:

To understand the evolution and development of science of dental material.

- Emphasis the purpose of course in dental materials to students of faculty of dentistry.
- To impart knowledge of biological, physical and chemical properties of dental materials along with biomechanical requirement of particular restorative procedure.
- To know the standards or specifications of various materials to guide the manufacturers as well as help professionals.
- Search of newer and better materials for research orientation.
- To understand and evaluate the claims made by manufactures of dental materials

2.3.1.b: Objectives:

i) Knowledge:

The graduate should acquire the adequate knowledge of science on which Dental materials are based and good understanding of various properties, composition, uses, advantages & disadvantages of these materials

Adequate knowledge of physical, biological & biomechanical properties of Dental materials.

ii)Skills:

A graduate should able to demonstrate the following skill necessary for the practice of dentistry.

- Able to select the best materials for each dental restorative procedure.
- Able to manipulate each dental material.
- Able to use these materials for various dental procedures in best possible way.

iii) Attitude:

- A graduate should develop following attitudes during the training period:
- Selection of better and appropriate materials using acquired knowledge of dental materials & restorative dentistry.
- To follow professional ethics and conduct its application in all aspect of professional life.
- Participate in CDE programme to updates the knowledge and professional skill.

2.3.1. c Outcomes:

To be able to use the dental materials in clinical dentistry to the best of their potential.

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

SECTION 3

SECTION-3
CHAPTER-1

GENERAL MEDICINE

3.1.1.a: AIMS: To be able to examine, diagnose and treat a patient medically in a dental practise.

3.1.1.b OBJECTIVES:

Knowledge & Understanding: The Curriculum is structured to occur in the patient care context through the recognition and application of the principles of verbal and written communication with patients, families, colleagues, and other healthcare professionals, and in discussions and presentations with healthcare professionals.

Skills: Residents are expected to be able to use scientific evidence and methods to investigate, evaluate, and improve patient care practices.

Attitudes: Students are expected to demonstrate behaviours that reflect a commitment to continuous professional development, ethical practice, an understanding and sensitivity to diversity and a responsible attitude toward their patients, their profession, and society.

3.1.1.c OUTCOMES:

Students shall demonstrate the ability to apply this knowledge to improve and optimize health care.

3.1.2: SYLLABUS (Including Teaching Hours.)

MUST KNOW 45HRS

1. Aims of medicine, Definitions of signs, symptoms, diagnosis, differential diagnosis, treatment & prognosis

2. Infections.
   Enteric fever, AIDS, Herpes Simplex, Herpes Zoster, Syphills Diphtheria

3. G.I.T
   Stomatitis, gingival hyperplasia, dysphagia, acid septic disease, jaundice, acute and chronic hepatitis, cirrhosis of liver, ascites.

4. CVS
   Acute rheumatic fever, rheumatic valvular heart disease, hypertension, ischemic heart disease, infective endocarditis, common arrthythmias, congenital heart disease, congestive cardiac failure.

5. RS
   Pneumonia, COPD,Bronchiectasis, Pulmonary TB, Bronchial asthma, Lung Abcess.

6. Hematology
   Anaemias, bleeding & clotting disorders, leukemias, lymphomas, agranulocytosis, splenomegaly, oral manifestations, hematologic disorders, generalized Lymphadenopathy.

7. Renal System
   Acute nephritis
   Nephrotic syndrome

8. Nutrition
   Avitaminosis, PEM

9. CNS
   Facial palsy, facial pain including trigeminal neuralgia, Epilepsy, Meningitis and headaches including migraine.

10. Endocrines
    Diabetes Mellitus Acromegaly, Hypothyroidism, Thyrotoxicosis, Calcium metabolism and parathyroids.

11. Critical care
    Syncope, cardiac arrest, CPR, shock

DESIRABLE TO KNOW **20HRS**

Infectious mononucleosis mumps
Measles, rubella
Malaria
Diarrhoea
Dysentery including Amoebiasis
Malabsorption
Pleural effusion, Pneumothorax
Lung cancers.
Renal failure.
Balanced diet
Examination of comatose patient
Examination of cranial nerves.
Addison's disease, Cushing's syndrome.
Acute LVF
ARDS

CLINICAL TRAINING:

The students must be able to:

- Take History
- Do general physical examination including build, nourishment, pulse, BP, respiration, clubbing, cyanosis, jaundice, oedema, nails, lymph nodes & Oral Cavity.
- Examination of CVS, RS, abdomen and facial nerve.

3.1.3: EXAMINATION PATTERN

Name of Exercise	Time Allotted	Marks Allotted
Long case	45 Mins.	35
Short Case	25 Mins.	25
Radiographs & Drugs	25 Mins.	25
Journal	NA	05

SECTION-3
CHAPTER-2
3.2. GENERAL SURGERY

3.2.1.a AIM: By taking on the clinical care of the patients with graduated responsibilities the residents develop their communication and surgical skills and apply their medical knowledge to the surgical diseases of their patients.

3.2.1.b OBJECTIVES:

i) Knowledge and understanding: Students shall learn to communicate effectively, caringly and professionally with patients, families and colleagues

ii) Skills: Students will be able to make evidence based decisions about diagnostic and therapeutic interventions, utilizing up-to-date scientific evidence and clinical judgment.

iii) Attitudes: Students shall be given an understanding of the basic science that is the foundation for surgical practice and have a clinical knowledge necessary to treat the broad range of surgical diseases.

3.2.1.c: OUTCOMES:

Student must develop the manual dexterity appropriate at each level to deal with all surgical eventualities.

3.2.2 : SYLLABUS (Including Teaching Hours.)

MUST KNOW 50 HRS

1 Introduction to Surgery (History & Principles)
2 Wounds
3 Inflammation, Aetiology, Pathology & Management
4 Carbuncle, Cellulitis, Abscess, Ludwig's angina, Erysepelas
5 Tetanus
6 Gas Gangrene
7 Chronic Infection – Tuberculosis, Syphilis, Leprosy, Actinomycosis
8 Viral Infections, HIV & Hepatitis B
9 Shock-Definition, Classification, Pathophysiology & Management
10 Haemorrhage – Types, Aetiology, Clinical features & Management & Syncope

11 Blood groups & Blood transfusion
12 Tumours – classification, Aetiology, Methods of spread, Investigations & modalities of treatment
13 Ulcer, Cyst, Sinuses & fistulae – Definition, Classification, Aetiology and treatment
14 Lymphoma
15 Resuscitation
16 Tracheostomy – Indication, Procedure & management
17 Facial Nerve affections and Trigeminal Neuralgia
18 Salivary gland – Tumours, Classification, Pathology, Investigation and treatment
19 Fractures – Principles, Classification, Healing & management
20 Sterilization
21 Dressings – Types & uses
22 Sutures – Types of uses
23 Diathermy & other methods of Haemostasis
24 Swellings of Jaw – Dentigerous cyst, Admantinoma
25 Cleft Lip & Cleft Palate – Principles of management
26 Neck – Anatomy, Triangles, midline & lateral Swellings
27 Thyroid – Anatomy Physiology Benign & management diseases, clinical features and management
28 Biopsy – Types, Indication & Procedure
29 Benign diseases of mouth, Lip, Tongue & Palate
30 Oral Carcinoma – Aetiology, Pathology, investigation and management

DESIRABLE TO KNOW 10HRS

1 Burns – Aetiology, Classification Pathophysiology and management
2 Principles of Radiotherapy
3 Principles of Chemotherapy
4 Lymphoedema
5 Laryngocele, Tumours of Nasopharynx
6 Peripheral nerve Injuries
7 Parathyroid – Anatomy, Physiology Benign & Malignant diseases, Clinical features & Management
8 Operation Theatre techniques
9 Disease of Tonsils
10 Head Injury
11 Blood Coagulation – Factors, mechanism Intrinsic and Extrinsic pathways.
12 Deep Vein Thrombosis.
13 Local Anaesthesia – Indications, Nature of Drugs used, Dosage, Toxicity

14 Principles of General Anaesthesia – Preoperative evaluation, stages of Anaesthesia, Nature of Drugs used & their toxicity
15 Peripheral Nerve Injuries
16 Varicose Veins

3.3.3 EXAMINATION PATTERN

Name of Exercise	Time Allotted	Marks Allotted
Long case	45 Mins.	35
Short Case	25 Mins.	25
Radiographs Instruments & CathetersDrugs	25 Mins.	25
Journal		05

SECTION-3
CHAPTER-3
3.3 ORAL PATHOLOGY AND MICROBIOLOGY

3.3.1.a AIM:

The dental students should acquire complete knowledge of embryology,anatomy and physiology of hard and soft tissues of oral and paraoral region and to train dental graduates so as to ensure competence and necessary skills in the diagnosis and prevention of dental and oral diseases.

3.3.1.b OBJECTIVES:

i) Knowledge And Understanding:

Adequate knowledge about the morphology of the teeth.

Adequate knowledge about histology of teeth and other oral structures.

Adequate knowledge of the embryology, development of face, tooth and salivary glands.

Understanding the etiopathogenesis of oral potential malignant disorders and oral cancer.

Understanding the etiopathogenesis of various oral lesions and developmental anomalies.

Understanding the basics of the histopathologic techniques.

ii) Skill:

Able to carve teeth of permanent dentition

Able to diagnose oral lesions based on histopatholoical features.

Able to differentiate the normal from abnormal tissues based on macro and microscopic features

Develop the skill of preparing and interpretation of ground section of teeth

iii)Attitudes:

1. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life

2. Apply the current knowledge of etiopathogenesis of the oral lesions for their diagnosis in general clinical practice
3. To apply the knowledge of morphology of the teeth in the clinical practice of restorative dentistry
4. To help and to participate in the implementation of oral potential malignant disorders and oral cancer screening surveys and camps.

3.3.1.c OUTCOMES:

At the end of the course the student should be able to do definite diagnosis and treatment competently.

The student should be able to make decision about higher education related to research pertaining to oral pathology.

The student should be able to refer the cases properly to the concern discipline.

3.3.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW 109 HRS

1 Developmental Disturbances of oral and paraoral structures 03 HRS

Developmental disturbances of hard tissues:
-dental arch relations,
-disturbances related to -
-size,shape,number and structure of teeth,
-disturbances related to eruption and shedding.
Developmental disturbances of soft
tissues: Lip,palate,oral mucosa,gingival,tongue and salivary glands
Craniofacial anomalies

2 Benign and Malignant tumors of oral cavity 25 HRS

Potentially Malignant Disorders of epithelial tissue origin.
-Definitions and nomenclature
-Epithelial dysplasia
-Lesions and conditions:leukoplakia, erythroplakia,oral lichen planus and oral submucous fibrosis.
Benign tumors of epithelial tissue origin.
- Squamous papilloma, Oral nevi.
Malignant tumors of epithelial tissue origin.
-Oral squamous cell carcinoma: Definition and
nomenclature,etiopathogenesis, TNM staging
,Broder's and Bryne's grading systems.
-Verrucous carcinoma
-Basal cell carcinoma: Definition etiopathogenesis and histopathology
-Malignant melanoma: Definition etiopathogenesis and histopathology

Benign and malignant tumors of connective tissue
-Fibroblast origin:oral fibromas and fibromatosis,peripheral ossifying fibroma peripheral giant cell granuloma, pyogenic granuloma and Fibrosarcoma
-Adipose tissue origin:Lipoma
-Endothelial origin(blood and lymphatics: Hemangiomas and lymphangiomas, Hereditary hemorrhagic telangiactasia, Kaposi's sarcoma
Bone and cartilage: Chondroma,osteoma,osteoid osteoma, benign osteoblastoma, osteosarcoma, torus palatinus and mandibularis
-Muscle tissue origin:
Leiomyoma.Rhabdomyoma,rhabdomyosarcoma.
-Nerve tissue origin:Traumatic neuroma, neurilemmoma, neurofibroma
-Lymphomas: Definition, classification, differences between Hodgkins and Non-Hodgkins lymphoma and Burkitts lymphoma

3 Tumors of salivary glands 05 HRS
-Histogenesis
-Classification.
-Benign tumors: pleomophic adenoma,Warthin tumor,myoepithelioma
-Malignant tumors: mucoepidermoid carcinoma,adenoid cystic carcinoma,polymorphous low grade adenocarcinoma

4 Non-neoplastic diseases of salivary glands 04 HRS
-Xerostomia, Sjogren syndrome, Mickuliz syndrome, Sialadenosis, necrotizing sialometaplasia, mucocele and sialolithiasis

5 Odontogenic and Non-Odontogenic cysts 08 HRS
-Definition
-Classification
-Lesions: Keraocystic odontogenic tumor,dentigerous cyst, calcifying odontogenic cyst, radicular cyst and dental lamina cyst of new born and eruption cysts.
Non-Odontogenic cysts: Solitary bone cyst and aneurismal bone cyst

6 Odontogenic tumors 09 HRS
-Definition
-Classification
-Lesions: Ameloblastoma, Squamous odontogenic tumour, Calcifying epithelial odontogenic tumour, - Ameloblastic fibroma, fibrodentinoma, Ameloblastic fibrodentinoma, Ameloblastic fibro-odontoma, Complex odontoma,Compound odontoma, Ameloblastic carcinoma and malignant ameloblastoma.

-Odontogenic fibroma (simple and WHOtype), Odontogenic myxoma or myxofibroma, Benign cementoblastoma

7 Bacterial infections of oral cavity 02 HRS

-Tuberculosis, Syphilis, Diptheria, Noma, Leprosy, Actinomycosis, Tetanus.

8 Viral infections of oral cavity 04 HRS

-Herpes simplex, Herpes zoster, Measles, Rubella, Herpangina, Mumps, Chicken pox, Molluscum contagiosum and Oral manifestations of HIV infection.

9 Mycotic infections of oral cavity 02 HRS

-Candidiasis, South American Blastomycosis, North American Blastomycosis, Mucormycosis

10 Diseases of the periodontium 04 HRS

-Classification

-Etiopathogenesis

-Lesions: Gingivitis, ANUG, Gingival enlargement, desquamative gingivitis, Chronic and aggressive periodontitis.

- Trauma from occlusion

11 Dental caries 05 HRS

-Definition

-Classification

-Etiopathogenesis,Theories, microbiology of dental caries, histopathology of enamel, dentinal and cemental caries.

12 Diseases of pulp and periapical tissue 04 HRS

-Definition

-Classification

-Lesions: acute pulpitis,chronic pulpitis,chronic hyperplastic pulpitis, pulp abscess,pulp necrosis,pulp fibrosis,periapical granuloma, periapical abscess, periapical cyst

-Sequale of pulpitis.

- Osteomyelitis: Definition, classification, etiopathogenesis,

-Types: Acute and chronic suppurative Osteomyelitis, Garre's Osteomyelitis

13 Spread of oral infection 02 HRS

- Focus of infection

-Focal infection

Routes of spread of infection

-Space infections: cellulitis, space infections, ludwing's angina, Maxillary sinusitis,

14 Physical and chemical injuries to the oral tissues 02 HRS
-Traumatic cyst,bruxism,tooth ankylosis,linea alba,traumatic ulcerations of oral mucosa(eosinophilic granuloma),denture sore mouth, epulis fissuratum,mucocele, ranula, sialolithiasis,radiation effects of oral and paraoral tissues-osteoradionecrosis
-Plumbism,mercury poisoning,argyria,effects of tetracycline

15 Regressive alterations of the teeth 02 HRS
-Attrition, abrasion and erosion
- sclerotic dentin, dead tracts, secondary dentin, pulp calcification, resorption of teeth,hypercementosis,cementicles

16 Healing of oral wounds 03 HRS
-Factors affecting wound healing
-Complications
-Healing of wounds: gingivectomy, biopsy,extraction and fracture),
-Biopsy techniques, exfoliative cytology

17 Oral aspects of metabolic diseases 03 HRS
-Classification
-Disturbances of mineral metabolism: calcium and phosphorus-osteoporosis, rickets. Fluoride and fluorosis.
- Disturbances of protein metabolism: marasmus and Kwashiorkor
-Amyloidosis
-Avitaminosis: vitamin A,D,K.C and B-complex
- Disturbances of hormonal metabolism: Hypo and hyper pituitarism, Addison's disease, hypo and hyper parathyroidism, diabetes mellitus

18 Allergic and immunologic diseases of the oral cavity 03 HRS
-Definition and nomenclature
-Lesions: recurrent aphthous stomatitis,reiter's syndrome,behcet's syndrome,contact dermatitis and stomatitis, sarcoidosis

19 Diseases of bone and joints 05 HRS
-Osteogenesis imperfecta, fibrous dysplasia, cherubism, cleidicranial dysplasia,Down's syndrome, Pagets disease, Cementoblastoma
-Hyper and hypo parathyroidism, rickets
-Developmental disturbances of TMJ,: ankylosis, rheumatoid arthritis, osteoarthritis

20 Diseases of blood and blood forming organs 04 HRS

-RBC diseases:

-Anemias: iron deficiency anemia and plummervinson syndrome, pernicious anemia and megaloblastic anemia, thalassemia, sickle cell anemia, aplastic anemia,erythroblastosis foetalis and polycythemia vera.

-WBC diseases: agranulocytosis,cyclic neutropenia, leukocytosis and leucopenia, infectious mononucleosis,leukemias

-Platelet and coagulation diseases: Purpura, thrombocytopenia, hemophilia, von Willebrand's disease

21 Diseases of the skin 06 HRS

-Ectodermal dysplasia, oral lichen planus, psoriasis, erhthema multiformae, pemphigus pemphigoid (bullous, cicatricial), epidermolysis bullosa, Lupus erythematosis, systemic sclerosis, Dyskeratosis congenita,

22 Diseases of nerves and muscles 02 HRS

-Trigeminal neuralgia, auriculotemporal syndrome, Bell's palsy, burning mouth syndrome, glossodynia and glossopyrosis, migraine

-Classification of diseases of muscles, myasthenia gravis, myositis ossificans

23 Forensic odontology 02 HRS

-Definitions and nomenclature

-Personal identification

-Dental identification

-Palatal rugae patterns

-Age estimation,

-Bite marks: classification, appearance, investigations, analysis, comparison and conclusion

-Lip prints.

DESIRABLE TO KNOW: 40HRS

1 Developmental disturbances of oral lymphoid tissue & Fissural(inclusion)cysts of oral region- lateral periodontal cyst,residual cyst, glandular odontogenic cyst, cysts of maxillary antrum and cysts of soft tissues. 03 HRS

2	Benign And Malignant Tumors Of Oral Cavity - Squamous acanthoma, Keratoacanthoma, -Angiomyoma, leiomyosarcoma -MEN syndrome, malignant nerve tumors, granular cell tumor, -Different histological grading systems, -Histological variants and molecular biology of squamous cell carcinoma -Histological variants -Clarks and Breslow system -Giant cell fibroma, myofibroma,fibromatosis,benign and malignant fibrous histiocytoma. - Lipoblastoma - Liposarcoma-Vascular malformations,sturge weber syndrome, angiofibroma. hemangioendothelioma,hemangiopericytoma. - Chondroblastoma and Ewing's sarcoma and other varients of lymphomas	05 HRS
3	Oncocytoma,Ductal Papillomas, Cyst Adenomas,Other Malignant Tumors Oncocytosis.	04 HRS
4	Odontoameloblastoma, odontogenic carcinomas, odontogenic sarcomas	04 HRS.
5	Infections Of Oral Cavity Botromycosis, Tularemia, Melioidisis, Gonorrhea, Rhinoscleroma, Cat-Scratch disease -Rhinosporidiasis, Cryptococcosis, Coccidioidomycosis, Sporotrichosis	06 HRS
4	Deposits On Teeth(Stains,Plaque And Calculus), Periodontal Abscess, Pericoronitis	01 HRS
5	Caries Activity Tests, Immunology Of Dental Caries, Caries Vaccine, Methods Of Caries Control	02 HRS
6	Aerodontolgia,Condensing Osteitis,Chronic Diffuse Sclerosing Osteomyelitis, Florid Osseous Dysplasia, Sclerotic Cemental Masses	01 HR
7	Cavernous Sinus Thrombosis, Mechanism And Significance of oral Foci of Infection	01 HRS

8	Reactions To Preparation Of Teeth For Restorative Procedures, High Speed Instrumentation For Cavity And Crown Preparation, Restorative Materials, Direct Adhesive And Non-Adhesive Restorations, Indirect Restorations, Bacteria At Tooth Restoration Interface And Microleakage. -Effects of orthodontic tooth movement and burns. -Non-allergic local reactions to drugs and chemicals -Effects of cancer chemotherapeutic agents.	02 HRS
9	Abfraction, Reticular Atrophy Of The Pulp - Replantation and transplantation of teeth - Implants and osseointegrated implants	01 HRS
10	Disturbances Of Mineral Metabolism(Trace Elements) -Porphyria -Lysosomal storage diseases - Disturbances of carbohydrate metabolism:mucopolysaccharidosis -Vitamin E -Progeria	01 HRS
11	Chronic Granulomatius Disease. Midline Lethal Granuloma, Uveoparotid Fever, Wegeners Granulomatosis,Angioedema	01 HRS
12	Craniofacial Dysostosis, Mandibulofacial Dysostosis, Pierre-Robin's Syndrome, Apert Syndrome -Luxation and subluxation,TMJ syndrome, Langerhans cell histiocytosis, eosinophilic granuloma and Hand-Schuller-Christian disease	02 HRS
13	Chediak –Higasi Syndrome, Thrombasthenia, Parahemophilia	01 HRS
14	Keratosis Follicularis,White Sponge Nevus,Acanthosis Nigricans, Paraneoplastic Pemphigus,Hailey- Hailey Disease,Ehlers –Danlos Syndrome, Goltz's Syndrome 02HRS	
15	Spenopalatine Neuralgia, Miscellaneous Disturbances of Nerves And Muscles	01HRS
16	Identification In Disasters, Identification From Dental	

DNA, Dental Profiling, Sex Identification From Craniofacial Morphology And Dimensions And By DNA Analysis 02HRS

3.3.3 EXAMINATION PATTERN

Name of the exercise	Time allotted	Marks
i) Identification of slides (10): 5 marks each ii) Identification of specimens(6): 5 marks each	50 minutes	80
2. Journal	-	10
Total		90

SECTION-4A

SECTION-4A
CHAPTER-1
4A.1. PUBLIC HEALTH DENTISTRY

4A.1.1.a: AIM: The dental graduates during training in the institutions should acquire adequate knowledge, necessary skills and such attitudes which are required for carrying out all the activities appropriate to general dental practice involving the prevention, diagnosis and treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues. The graduate should also understand the concept of community oral health education and be able to participate in the rural health care delivery programs existing in the country.

4B.1.1.b OBJECTIVES:

i Knowledge and understanding:

-The graduate should acquire the following during the period of training.

-Adequate knowledge of the scientific foundations on which dentistry is based and good understanding of various relevant scientific methods, principles of biological functions and should be able to evaluate and analyse scientifically various established facts and data.

-Adequate knowledge of the development, structure and function of the teeth, mouth and jaws and associated tissues both in health and disease and their relationship and effect on general-state of health and also the bearing on physical and social well-being of the patient.

-Adequate knowledge of clinical disciplines and methods, which provide a coherent picture of anomalies, lesions and diseases of the teeth, mouth and jaws and preventive, diagnostic and -therapeutic aspects of dentistry.

-Adequate clinical experience required for general dental practice.

-Adequate knowledge of biological function and behaviour of persons in health and sickness as well as the influence of the natural

and social environment on the state of health so far as it affects dentistry.

ii Skills:

-A graduate should be able to demonstrate the following skills necessary for practice of dentistry.

-Able to diagnose and manage various common dental problems encountered in general dental practice, keeping in mind the expectations and the right of the society to receive the best possible treatment available wherever possible.

-Acquire skill to prevent and manage complications if encountered while carrying out various dental surgical and other procedures.

-Possess skill to carry out required investigative procedures and ability to interpret laboratory findings.

-Promote oral health and help to prevent oral diseases wherever possible.

- Competent in control of pain and anxiety during dental treatment.

Iii Attitudes: A graduate should develop during the training period the following attitudes:

-Willing to apply current knowledge of dentistry in the best interest of the patients and the community.

-Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.

-Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.

-Willingness to participate in the continuing education programmes to update knowledge and professional skills from time to time.

-To help and to participate in the implementation of national health programmes.

4A.1.1.c OUTCOMES:

-The student should be able to function independently as a dental clinician.

-At the end of the 4+1 year program the student should be able to handle clinical situations competently.
-The student should be able to make an informed decision about further education.
-The student should be able to make a judicious choice to refer cases beyond her/his competency.

4A.1.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW 46 HRS

1 Introduction: 01 HR
- History of Dentistry (India and abroad),
- Definitions - Public Health
- Introduction, Definition, History, Changing concepts, History of Public Health In India Characteristic method and Technique

2 Dental Public Health 01 HR
- Aims, and Objectives, Tools, Procedural Steps in Dental Public Health, Similarities and dissimilarities between Clinical Dentistry and Public Health Dentistry, Functions of the public health dentist

3 Survey 02 HR
- Need, Aims of a Survey, types of survey ,Oral health Surveys
- Basic Methods (WHO-1997)

4 Program Planning and Evaluation. 01 HR
Planning cycle, types of evaluation

5 Biostatistics 03 HRS
- Introduction, Application in Dentistry ,data collection, Sampling techniques -Measures of Central Tendency,
- Measures of Dispersion, Normal Curve, Presentation of data- Tables, charts and Diagram.
Tests of Significance,Confidence limits.

6 General Epidemiology 03 HRS
- Introduction, Definition, Aims and Objectives, Principles, Difference between clinical medicine and Epidemiology, Basic measurement in Epidemiology, Incidence and Prevalence. Descriptive Epidemiology,

	Analytical Epidemiology (Case control and Cohort study), Experimental Epidemiology. Uses of Epidemiology.	
7	Health - Definition, Changing concepts, Dimension, Determinants, Ecology, and Spectrum of health.	01 HR
8	Disease - Concepts, Natural history, Epidemiological Triad, Iceberg Phenomenon, Spectrum of disease and Dynamics of disease transmission. Concepts of prevention (Levels and modes of intervention)	01 HR
9	Environment and Health - Water: Norms of Potability, uses of water and sources, purification of water (Large and small scale), hardness of water -Air: Composition, air pollution, effects, prevention and control of air pollution.	02 HRS
10	Social Environment Definitions, Types of Family Influence of culture on oral health, Influence of social class on oral health Types of social classes. Utilization of dental care according to social class	01 HR
11	Waste Disposal - Sources of refuse, health hazard and methods of Disposal	01 HR
12	Communication for Health Education. - Definition, communication process, types, barriers, approaches in health education, health education and Propaganda, Contents of Health Education, Principles, methods, and aids	02 HRS
13	School health programmes Aims, elements, advantages, disadvantages School Health programs in developing and developed countries	01 HR
14	Epidemiology of Dental caries Host, agent and Environmental factors. Levels of prevention for dental caries	02 HRS

15 Prevention and control of Dental caries. Fluorides 02 HRS
- Introduction, History, Physiology of Fluoride, sources,
- Systemic fluoridation, topical fluoride
- Defluoridation, toxicity, safety dose, Caries vaccine.

16 Caries Activity tests 01 HR
- Pit and fissure sealant.

17 Epidemiology of Periodontal disease. 01 HR
- Host, agent and Environmental factors.
- Prevalence of periodontal disease.

18 Prevention and control of Periodontal Disease. 01HR
- Levels of prevention for periodontal disease.
- Plaque control

19 Epidemiology and Prevention and control of malocclusion. 01 HR

20 Epidemiology Prevention and control of oral cancer. 02 HRS
Host, agent and Environmental factors. Prevalence
Levels of prevention for oral cancer.

21 Indices. 03 HRS
- Introduction, classification, ideal requisites, uses.
- Dental caries indices – DMFT, DMFS, dmft, deft, dft, dfs, defs,
Gingival Indices - Loe and Sillness index
- Plaque Indices- Sillness and Loe index.
- Oral hygiene indices- OHI and OHI-S
Periodontal Indices- Russell's periodontal index, CPITN, CPI.
- Dental fluorosis Index- Dean's fluorosis index
WHO proforma 1997

22 Provision of dental care 01 HR
Private and group practice, Part time practice, HMO, PPO,
Neighborhood health clinic, Portable equipments.

23 Dental Payments. 01 HR
Types of dental payments in detail
Dental insurance

24	Dental Auxiliaries. Definition, classification, description of each in Detail , New type of dental auxiliaries, Degree of supervision of auxiliaries	01 HR
25	Health care of the community - PHC, Elements of primary health care, Principles of primary health care. Health care system in India.- Public sector, private sector, indigenous systems voluntary health agency, National health program and National oral health care program	01 HR
26	Health agencies around the world.	01 HR
27	WHO	01 HR
28	Dental council of India Dentist's Act 1948	01 HR
29	Indian Dental Association. Structure, functions.	01 HR
30	Ethics, Ethical Principles, Ethical rules for Dentists	01 HR
31	Dental Jurisprudence and Consumer Protection Act	01 HR
32	Dental Practice Management - Areas for consideration - planning, finance, setting up of fees, quality care, records, Legal implications, Consumer related aspects.	01 HR
33	Child psychology Classification and behavior management.	01 HR
34	Computers in dentistry	01 HR
35	Atraumatic restorative treatment	01 HR

DESIRABLE TO KNOW **15HRS**

The UN Millennium developmental goals.
National oral health Policy
Indian Association of Public Health Dentistry.

Training and calibration of examiners.
Evaluating a public health problem (Problem Based learning)
Regression techniques
Association and Causation
Investigation of an epidemic
Recent advances in epidemiology
Epidemic, endemic and pandemic diseases across the world.
Light, Requirement of good lighting, Natural and artificial light, methods of artificial lighting.
Noise: Sources, properties, effects, control.
Radiation: Sources, Types, Biological Effects, Radiation protection.
Social and Cultural Anthropology.
Dental waste disposal.
Health promotion, Approaches to Health Promotion.
WHO contribution, Implementation of school health program.
Trends in dental caries in developed and developing countries
Caries risk assessment i.e. Cariogram
Chairside caries activity test newer advances in pit and fissure sealants
Periodontal risk assessment
Tobacco control and Habit cessation. New modalities in diagnosis of oral cancer
Genetics and oral cancer
Malocclusion indices-.
Recent dental caries index i.e. ICDAS
Indices for incipient caries
Community fluorosis index.
Provision of dental care in India
National Rural Health Mission
Contribution of centre and state in oral health in India, oral health care for special groups

Indian Association of Public Health Dentistry, International Labor organization.
International food Organization.
WHO goals for oral health.
Organisation of IDA in India
Nuremberg code,
Declaration of Geneva,
World medical association
International code of Medical ethics,
Declaration of Helsinki Ethics in Dental Research
Classification of malpractice
New materials for ART

4A.1.3 EXAMINATION PATTERN

NAME OF EXERCISE	TIME ALLOTTED	MARKS ALLOTTED
Case History including Indices.	01 Hr	50
Project Work	NA	15
Journal	NA	05
Preventive Procedure	20 mins	20
Viva	10 mins	20

SECTION-4A
CHAPTER-2
4A.2. PERIODONTOLOGY

4A.2.1.a AIMS:
The dental graduate during training in the institution should acquire adequate knowledge, necessary skills and attitude which are required to perform diagnosis of periodontal diseases and render periodontal therapy and maintenance of the same.

The graduate should also understand the concept of preventive periodontics and should be able to participate in health care delivery programs.

4A.2.1.b OBJECTIVES:
The Students shall acquire the necessary knowledge and skills to perform Dental scaling diagnostic tests and use various instruments for periodontal therapy and its maintenance

I Knowledge & understanding:
Student should have knowledge regarding etiology pathogenesis, diagnosis and management of common periodontal diseases with emphasis on Indian population.

Basic knowledge regarding biochemical, microbiology, immunologic and genetic aspects of periodontal pathology.

Knowledge regarding various treatment modalities of periodontal diseases from historical aspect to present with emphasis on newer advances like LASERS, Microsurgery and Piezosurgery.

Knowledge regarding various preventive periodontal procedures.

Basic Knowledge regarding interrelationship of periodontal diseases and systemic conditions and its effect on pathogenesis and treatment planning.

Knowledge regarding periodontal hazards of deleterious habits and its prevention.

Knowledge of decision making regarding surgical and non surgical periodontal therapy.
Brief knowledge, understanding and skills regarding art and science of oral Implantology.

II Skills:

Take a proper clinical history and thorough examination of extra oral and intra oral structures with special emphasis on gingiva and periodontal tissues.

Medical history evaluation and advising essential diagnostics test and its interpretation.

Skills regarding basic life support and management of medical emergencies in dental practice.

Following appropriate infection control protocol and asepsis.

Skills regarding use of various surgical and non surgical periodontal instruments.

Application of knowledge regarding chair position and principles of instrumentation.

Skills of sharpening blunt periodontal instruments.

Skills in use of ultrasonic scalers.

Skills to use R.V.G. and its interpretation.

III Attitudes:

The students should develop attitude to impart periodontal preventive measures for causation and progression of periodontal diseases.

Students should develop and attitude to perform the treatment with full aseptic precautions.

Develop and an attitude to prevent iatrogenic diseases.

Attitude to conserve the tooth to maximum possible time by maintaining periodontal health.

Attitude to understand ones limitation and timely referral to a specialist.

4A.2.1.c OUTCOMES:

-Students should be able to independently record case history of a periodontal patient.

-Student should be able to determine diagnosis, prognosis and make a treatment plan.

-Student should able to perform scaling and root planning and local drug delivery.

-Student should be able to render supportive periodontal care after active periodontal treatment is completed and motivate the patient to this effect.

Student should be able to make a judicious choice regarding referral about cases beyond his/ her competency.

4A.2.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW **73HRS**

1. Introduction: 01 HRS
   Definition of Periodontology, Periodontics, Periodontia
2. Development of periodontal tissues: 02 HRS
   Micro –structural Anatomy & biology of periodontal tissues in detail, gingiva, junctional epithelium in detail, epithelial - mesenchymal interaction, periodontal ligament cementum alveolar bone.
3. Defensive mechanisms in the oral cavity: 02 HRS
   Role of epithelium, gingival fluid, saliva and other defensive mechanisms in the oral environment.
4. Age change in periodontal structures 01 HR
5. Classification of periodontal diseases: 02 HR
   need for classification, classification of gingival and periodontal diseases as described in world workshop 1989, AAP 1999.

Gingivitis:-

Plaque associated, ANUG, steroid hormone influenced, medication influenced, desquamative gingivitis, other forms of gingivitis as in nutritional deficiency, bacterial and viral infections etc.

Periodontitis :-

Chronic periodontitis, aggressive periodontitis, and refractory periodontitis.

6. Gingival Diseases: 03 HRS

- Localized and generalized gingivitis.
- Papillary, marginal and diffuse gingivitis.

Etiology, pathogenesis, clinical signs,
Symptoms and management of Plaque associated gingivitis.

- Systemically aggravated gingivitis, hormones, drugs and systemic diseases
- ANUG
- Periocoronitis
- Gingival enlargement (Classification & differential diagnosis)

7. Extension of Inflammation from Gingiva:- 01 HR

Mechanism of spread of inflammation from gingival area to deeper periodontal structures.
Factors that modify the spread

8. Pocket 03 HRS

Definition, signs and symptoms, classification, pathogenesis, histopathology, root surface changes and contents of the pocket

9. Etiology 05 HRS

Dental Plaque (Bio film)- Definition, new concept of bio film

- Types composition, bacterial colonization, growth, maturation and disclosing agents.
- Role of dental plaque in periodontal diseases.

Plaque microorganisms in details and bacteria associated with periodontal diseases.

- Plaque retentive factors

Material alba:-

- Food debris
- Calculus
- Definition
- Types, composition, attachment, theories of formation
- Role of calculus in disease

Food impaction:-

- Definition
- Types, etiology
- Hirschfeld's classification
- Signs, symptoms & sequelae of treatment

Trauma From Occlusion
- Definition, types
- Histopathological changes
- Role in periodontal disease
- Measures of management in brief

Systemic Disease 02 HRS
- Diabetes, sex hormones, nutrition (vit. C.& proteins)
- Aids & periodontium
- Hemorrhagic diseases, Leukemia, clotting factor disorders, PMN disorders

10. Risk factors 01 HR
- Definition, risk factors for periodontal diseases.

11. Host Response 03 HRS
- Mechanism of initiation and progression of periodontal diseases
- Basic concepts about cells, mast cells neutrophils, macrophages, lymphocytes, immunoglobulins, complement system, immune mechanisms and cytokines in brief.
- Stages in gingivitis –initial, early, established and advanced

12. Periodontitits 07 HRS
- etiology, histopathology, clinical signs and symptoms, diagnosis and treatment of chronic periodontitis
- periodontal abscess, definition, classification, pathogenesis, differential diagnosis and treatment.
- Furcation involvement Glickman's, classification, prognosis and management.
- Aggressive periodontitis.
- Periodontitis associated with systemic diseases
- Refractory periodontitis

13. Diagnosis 03 HRS
- Routine procedures, method of probing, type of probes (according to case history)
- Halitosis etiology and treatment, mention advanced diagnostic aids and theirs role in brief.

14. Prognosis 01 HR
- Definition, types, purpose and factors to be taken into consideration

15. Treatment Plan 10HRS
Factors to be considered
Periodontal therapy
A. General principles of periodontal therapy. Phase I,II,II, IV therapy
- Definition of periodontal regeneration, repair, new attachment.
B. Plaque control
- Mechanical tooth brushes, interdental cleaning aids, dentifrices.
- Chemical: Classification and mechanism of action of each & pocket irrigation.

17. Pocket eradication procedures 04 HRS
- Scaling and root planning
- Indication
- Aims and objectives
- Healing following root planning
- Hand instruments, sonic, ultrasonic & piezo electric scalers.
- Curettage and present concepts
- Definition
- Indications
- Aims and objectives
- Procedures and healing response
- Flap surgery
- Definition
- Types of flaps designs of flap papilla preservation
- Indication and contraindications
- Armamentarium
Surgical procedure and healing response

18. Osseous surgery 04 HRS
- Osseous defects in periodontal diseases
- Definition
- Classification
Surgery :
- Resective, additive osseous surgery (osseous grafts with classification of grafts)
- Healing responses
- Other regenerative procedures : root conditioning
Guided tissue regeneration

19. Mucogingival surgery & periodontal plastic surgeries 03 HRS
- Definition
- Mucogingival problem : etiology, classification of gingival recession (P.D. Miller Jr. & Sullivan and Atkins)
- Indication and objectives
- Gingival extension procedures : lateral pedicle graft frenectomy, frenotomy, frenoplasty
- Crown lengthening procedures
Periodontal microsurgery in brief

20. Splints 01 HR
- Periodontal splints
- Purpose and classification principles of splinting

21. Hypersensitivity 01 HR
- Causes, theories & management

22. Implants 02 HRS
- Definition, types scope and biomaterials uses.

23. Maintenance phase 01 HR
- Aims, objective, & principles
- Importance

24. Pharmaco – Therapy 01 HR
- periodontal dressings
- Antibiotics and anti inflammatory drugs local drugs delivery system.

25. Periodontal management of medically compromised patients 02 HRS
- Topics concerning periodontal management of medically compromised patients

26. Inter - disciplinary care 03 HRS
- Pulpo- periodontal involvement
- Perio ortho

27. Systemic Effects of periodontal diseases in brief 02 HRS
- Cardiovascular diseases, low birth weight babies diabetes etc.

28. Infection control protocol 02 HRS
- Sterilization and various aseptic procedures.

DESIRABLE TO KNOW 09HRS

Desquamative Gingivitis:- 02 HRS
- Gingivitis associated with lichen planus, pemphigoid, pemphigus, and other vesiculobullous lesions,
- Allergic gingivitis
- Infective gingivitis – herpetic, bacterial and candidial.

Epidemiology of Periodontology Disease: 02 HRS
- Definition of index, incidence, prevalence, epidemiology endemic epidemic and pandemic
- Classification of indices (Irreversible and reversible)
- Deficiencies of earlier indices used in Periodontics
- Detailed understanding of silness & Loe Plaque index, loe & silness Gingival index, CPITN & CPI
- Prevalence of periodontal disease in India and other countries.
- Public health significance (All these topics)

Habits 01 HRS
- Their periodontal significance
- Bruxism and parafunctional habits, tongue thrusting, lip biting, occupational habits.

Prosthodontics 01 HR
- Interrelationship,Bridges and other prosthesis, pontics (types), surface contour, relationships of margins to the periodontium, gingival protection theory, muscle action theory and theory of access to oral hygiene.

Orthodontics 01 HR
- Interrelationship, removable appliances and fixed appliances
Retention of plaque, bacterial changes
- Periodontal disease activity, continuous paradigm, random burst and asynchronous multiple burst hypothesis.
Periodontal considerations ; such as implant bone interface, implant – gingival interface, implant
failure, peri- implantitis and management.
Procedures 01 HR

Maintenance of implants 01 HR

4A.2.3 EXAMINATION PATTERN

Name Of Exercise	Time Allotted	Marks Allotted
Scaling & Polishing	45 Mins	40
Clinical Case examination, History Taking and Treatment Planning.	45 Mins	25
Post-Operative Instructions, Chairside Viva.	30 Mins	20
Journal	NA	05

SECTION-4A
CHAPTER-3
ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS

4A.3.1a Aim:

The subject of Orthodontics and Dentofacial Orthopaedics is directed toward providing the dental student with the knowledge and skills necessary to recognize a developing or established malocclusion, provide preventive and therapeutic treatment within the scope of the general dental practice, consult as a team member with the specialist, refer cases requiring specialist care as appropriate, and coordinate comprehensive care of the patient. Didactic and laboratory exercises provide a strong foundation for delivery of limited orthodontic treatment as part of an adult and child patient's comprehensive dental care.

4A.3.1.b. Objectives:

The training programme in this subject is to structure and achieve the following objectives.

Knowledge and Understanding:

1. The dynamic interaction of biologic processes and mechanical forces acting on they stomatognathic system during orthodontic treatment
2. The etiology, pathophysiology, diagnosis and treatment planning of various common Orthodontic problems
3. Various treatment modalities in Orthodontics: preventive,

interceptive and corrective

4. Basic sciences relevant to the practice of Orthodontics
5. Interaction of social, cultural, economic, genetic and environmental factors and their relevance to management of oro - facial deformities.
6. Factors affecting the long-range stability of orthodontic correction and their management
7. Personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste, keeping in view the high prevalence of Hepatitis and HIV and other highly contagious diseases.

Skills:

1. To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedures, and interpret them and arrive at a reasonable diagnosis about the Dentofacial deformities.
2. Should be competent to fabricate and manage the most appropriate removable appliance (active or passive) for the treatment of any orthodontic problem to be treated singly or as a part of multidisciplinary treatment of oro-facial deformities.

Attitudes:

1. Develop an attitude to adopt ethical principles in all aspects of Orthodontic practice.
2. Professional honesty and integrity are to b fostered
3. Treatment care is to be delivered irrespective of the social Status, cast, creed or colleagues
4. Willingness to share the knowledge and clinical experience with professional colleagues
5. Willingness to adopt, after a critical assessment, new methods and techniques of orthodontic management developed from time to time based on scientific research, which are in the best interest of the patient.
6. Respect patient's rights and privileges, including patient's right to information and right to seek a second opinion.
7. Develop attitude to seek opinion from allied medical and dental specialists as and when required.

4A.3.1.c. OUTCOMES

1. Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular Dentofacial problem and to obtain a true informed consent from them for the most appropriate treatment available

at that point of time.

2. Develop the ability to communicate with professional colleagues, in Orthodontics or other specialities through various media like correspondence, Internet, e-video, conference, etc. To render the best possible treatment.

4A.3.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW 50 HRS

1. Introduction 01HR
Definition, Historical Background, aims and Objectives of Orthodontics and Need for Orthodontics care

2. Growth and Development 02HR
In General a. Definition
b. Growth spurts and Differential growth
c. Factors influencing growth and Development
d. Methods of measuring growth
e. Growth theories (Genetic, Sicher's, Scott's,Moss's, Petrovic's, Multifactorial)
f. Genetic and epigenetic factors in growth
g. Cephalocaudal gradient in growth

3. Morphologic Development of Craniofacial structures 02 HR
a. Methods of bone growth
b. Prenatal growth of craniofacial structures
c. Postnatal growth and development of cranial base, maxilla, mandible, dental arches and occlusion.

4. Functional Development of Dental Arches and Occlusion 02 HR
a. Factors influencing functional development of dental arches and occlusion
b. Forces of Occlusion
c. Wolff's law of transformation of bone
d. Trajectories of forces

5. Clinical Application of Growth and development. 02HRS

6. Malocclusion - In General 02 HRS

a. Concept of normal occlusion
b. Definition of malocclusion
c. Description of different types of dental, skeletal and functional malocclusion.

7. Classification of Malocclusion 02 HRS
Principle, description, advantages and disadvantages of classification of malocclusion by Angle's, Simon's, Lischer's and Ackerman and Proffitt's

8. Normal and Abnormal Function of Stomatognathic system 01 HR

9. Etiology of Malocclusion 02HRS
a. Definition, importance, classification, local and general etiological factors.
b. Etiology of following different types of malocclusion:
1) Midline diastema
2) Spacing
3) Crowding
4) Cross - Bite: Anterior / Posterior
5) Class III Malocclusion
6) Class II Malocclusion
7)Deep Bite
8) Open Bite
9) Habits

10. Diagnosis And Diagnostic Aids 03 HRS
a. Definition, Importance and classification of diagnostic aids
b. Importance of case history and clinical examination in orthodontics
c. Study Models: - Importance and uses -
Preparation and preservation of study models
d. Importance of intraoral X-rays in orthodontics
e. Panoramic radiographs:- Principles, Advantages, disadvantages and uses
f. Cephalometrics: Its advantages, disadvantages
1. Definition
2. Description and use of cephalostat
3. Description and uses of anatomical landmarks
lines and angels used in cephalometric analysis
4. Analysis - Steiner's, Down's, Tweed's, Rickett's- E- line
g. Electromyography and its uses in orthodontics
h. Hand and Wrist X-rays and its importance in orthodontics

11. General Principles in Orthodontic Treatment Planning Of Dental And Skeletal Malocclusions 02 HRS

12. Anchorage In Orthodontics – 02HRS
Definition, Classification, Types and Stability Of Anchorage

13. Biomechanical Principles In Orthodontics Tooth movement 02 HRS
a. Different types of tooth movements
b. Tissue response to orthodontic force application
c. Age factor in orthodontic tooth movement
d. Theories of Tooth Movement

14. Preventive Orthodontics 03HRS
a. Definition
b. Different procedures undertaken in preventive orthodontics and their limitations.

15. Interceptive Orthodontics 03HRS
a. Definition
b. Different procedures undertaken in interceptive orthodontics
c. Serial extractions: Definition, indications, contraindication, technique, advantages and disadvantages.
d. Role of muscle exercises as an interceptive procedure

16. Corrective Orthodontics 02HRS
a. Definition, factors to be considered during treatment planning.
b. Model analysis: Pont's, Ashley Howe's, Bolton's, Carey's, Moyer's Mixed Dentition Analysis
c. Methods of gaining space in the arch:-
Indications, relative merits and demerits of proximal stripping, arch expansion and extractions
d. Extractions in Orthodontics - indications and selection of teeth for extraction

17. Orthodontic Appliances: 01 HRS
General
a. Requisites for orthodontics appliances
b. Classification, indications of Removable and Functional Appliances
c. Methods of force application

d. Materials used in construction of various orthodontic appliances - uses of stainless steel,
technical considerations in curing of acrylic,
Principles of welding and soldering, fluxes and antifluxes.
e. Preliminary knowledge of acid etching and direct bonding

18. Ethics 01HR

19.ORTHODONTIC APPLIANCES 08HRS

REMOVABLE ORTHODONTIC APPLIANCES

1) Components of removable appliances
2) Different types of clasps and their uses
3) Different types of labial bows and their uses
4) Different types of springs and their uses
5) Expansion appliances in orthodontics:
i) Principles
ii) Indications for arch expansion
iii) Description of expansion appliances and different types of expansion devices and their uses.
iv)Myofunctional Appliances
v) Rapid maxillary expansion

FIXED ORTHODONTIC APPLIANCES

1. Definition, Indications & Contraindications
2. Component parts and their uses
3. Basic principles of different techniques: Edgewise, Begg's, straight wire.

EXTRAORAL APPLIANCES

1. Headgears
2. Chincup
3. Reverse pull headgears

MYOFUNCTIONAL APPLIANCES

1. Definition and principles
2. Muscle exercise and their uses in orthodontics
3. Functional appliances:
i) Activator, Oral screens, Frankel's functional regulator, Bionatar,Twin Block, lip bumper
ii) Inclined planes - upper and lower

Orthodontic Management of Cleft Lip And Palate

20. Principles of Surgical orthodontics 03HRS

Brief Knowledge of correction of :

a. Mandibular Prognathism and Retrognathism
b. Maxillary Prognathism and Retrognathism
c. Anterior open bite and deep bite
d. Cross bite

21. Principle, Differential diagnosis and methods of Treatment of : 03HRS

1. Midline diastema
2. Cross bite
3. Open bite
4. Deep bite
5. Spacing
6. Crowding
7. Class II -Division 1, Division 2
8. Class III Malocclusion - True and Psuedo Class III

22. Retention And Relapse 04 HRS

Definition,
Need for retention
Causes of relapse
Methods of retention,
Different types of retention devices,
Duration of retention,
Theorems of retention

DESIRED TO KNOW 10HRS

Role of Genetic Control In Growth And Development
Late Adult Growth
Mandibular Rotation
Electromyography
Hand Wrist X-Rays
Anchorage Preparation and in Various Treatment Modality
Age Factors In Tooth Movement
Detailed Biomechanics of the moment to force ratio for various tooth movements
Distalisation of molars
Distal Driving of Entire Arches

Elastomeric Impression
Ethics
Types and Principles Of Pre Adjusted Edgewise Appliance.
Fixed Functional Appliances
Surgical Management Of Cleft Lip and Palate
Surgical Procedure for Orthognathic Surgery
True Class III
Fabrication of Retainers
Repair of Lingual Bonded Retainer

4A.3.3 EXAMINATION PATTERN

Name of Exercise	Time allotted	Marks Allotted (90)
Wire Bending	45 Mins.	50 Marks
Model Analysis	30 Mins.	15 Marks
Identification of Appliances, Cephalometric Landmarks & Spotters	45 Mins.	20 Marks
Journals	NA	05 Marks

SECTION-4A
CHAPTER-4
ORAL MEDICINE, DIAGNOSIS & RADIOLOGY

4A.4.1.a AIM: The subject of Oral Medicine and Radiology aims to train the students ardently to use basic diagnostic procedures and techniques useful in recognizing the disease of the oral and paraoral tissues of local and constitutional origin and their medical management. The subject also includes formulation of the diagnois and medical management of diseases specific to the orofacial tissues and of oral manifestations of systemic diseases. It also aims towards management of behavioral disorders and oral and dental treatment of medically compromised patients.

4A.4.1.b: OBJECTIVES:

i-Knowledge and understanding:

The graduate should acquire the following during the period of training.

- The students should be able to record a detailed case history and clinical examination of the patient to arrive at a provisional diagnosis.

-They should have knowledge regarding the chair side and advanced diagnostic methods including radiographic techniques to formulate final and differential diagnosis.

- Students should be aware of medical complications that can arise while treating patients and management for the same. They should be able to manage medically compromised patients and modifications in the dental treatment for such patients.

- Students should have the knowledge of various intraoral and extraoral radiographic techniques,radiation safety and radiation hazards.

ii-Skills:

-A graduate should be able to demonstrate the following skills necessary for practice of dentistry.

-To diagnose various premalignant and malignant lesions and

conditions, other mucosal disorders and undertaking their medical management.

-To carry out intraoral radiographic techniques like periapical, bitewing and occlusal radiographs.

-To carry out the required investigative procedures like tooth vitality testing, vital staining.

-To prescribe medicines for the common oral and dental pathologies.

b – Attitudes:

-A graduate should develop during the training period the following attitudes.

-Willing to apply current knowledge of Oral Medicine and Radiology in the best interest of the patients and the community.

-Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.

-To handle the patients with great compassion, explain them the required treatment options and also educate about the preventive aspects of oral diseases.

-To counsel and educate the population regarding ill effects of habits like betel nut, tobacco, alcohol etc.

4A.4.1.c: OUTCOMES:

1. The student should be able to function independently as a dental clinician.
2. At the end of the 4+1 year program the student should be able to handle clinical situations competently.
3. The student should be able to make an informed decision about further education.
4. The student should be able to make a judicious choice to refer cases beyond her/his competency.

4A.4.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW

1.Oral medicine and diagnostic AIDS:

Section A-Diagnostic Methods 06 HRS

(1) Definition and importance of Diagnosis and various types of diagnosis

(2) Method of clinical examinations.
(a) General Physical examination by inspection.
(b) Oro-facial region by inspection, palpation and other means
(c) To train the students about the importance, role, use of saliva and techniques of diagnosis of saliva as part of oral disease
(d) Examination of lesions like swellings, ulcers, erosions, sinus, fistula, growths, pigmented lesions, white and red patches
(e) Examination of lymph nodes
(3) Investigations
(a) Biopsy and exfoliative cytology
(b) Hematological, Microbiological and other tests and investigations necessary for diagnosis and prognosis

Section B- Diagnosis, Differential Diagnosis 04 HRS
(1) Teeth: Developmental abnormalities, causes of destruction of teeth and their sequelae and discoloration of teeth
(2) Inflamation – Injury, infection and sperad of infection,fascial space infections, osteoradionecrosis.
(3) Temparomandibular joint: Developmental abnormalities of the condyle. Rheumatoid arthritis, Osteoarthritis, Subluxation and luxation.
(4) Periodontal diseases: Gingival hyperplasia, gingivitis, periodontitis, pyogenic granuloma
(5) Common cysts and Tumors:

CYSTS: Cysts of soft tissue: Mucocele and Ranula 07 HRS
Cysts of bone: Odontogenic and nonodontogenic.
TUMORS:
Soft Tissue:
Epithelial: Papilloma, Carcinoma, Melanoma
Connective tissue: Fibroma, Lipoma, Fibrosarcoma
Vascular: Haemangioma, Lymphangioma
Nerve Tissue: Neurofibroma, Traumatic Neuroma, Neurofibromatosis
Salivary Glands: Pleomorphic adenoma, Adenocarcinoma, Warthin's Tumor, Adenoid cystic
carcinoma.
(6) Teeth: Developmental abnormalities, causes of destruction of teeth and their sequelae and discoloration of teeth
(7) Inflamation – Injury, infection and sperad of infection,fascial space infections, osteoradionecrosis.
(8) Temparomandibular joint: Developmental abnormalities of the condyle. Rheumatoid arthritis, Osteoarthritis, Subluxation and luxation.
(9) Periodontal diseases: Gingival hyperplasia, gingivitis, periodontitis,

pyogenic granuloma
(10) Common cysts and Tumors:
CYSTS: Cysts of soft tissue: Mucocele and Ranula
Cysts of bone: Odontogenic and nonodontogenic.
TUMORS:
Soft Tissue:
Epithelial: Papilloma, Carcinoma, Melanoma
Connective tissue: Fibroma, Lipoma, Fibrosarcoma
Vascular: Haemangioma, Lymphangioma
Nerve Tissue: Neurofibroma, Traumatic Neuroma, Neurofibromatosis
Salivary Glands: Pleomorphic adenoma,
Adenocarcinoma, Warthin's Tumor, Adenoid cystic carcinoma.
Hard Tissue:
Non Odontogenic: Osteoma, Osteosarcoma,
Osteoclastoma, Chondroma, Chandrosarcoma, Central giant cell rumor, and Central haemangioma
Odontogenic: Enameloma, Ameloblastoma, Calcifying Epithelial Odontogenic tumor, Adenomatoid Odontogenic tumor, Periapical cemental dysphasia and
Odontomas

Section C-Oral medicines and therapeutics 18 HRS

(1) Infections of oral and paraoral structures:
Bacterial: Streptococcal, tuberculosis, syphillis, vincents, leprosy, actinomycosis, diphtheria and tetanus
Fungal: Candida albicans
Virus: Herpes simplex, herpes zoster, ramsay hunt syndrome, measles, herpangina, mumps, infectious mononucleosis, AIDS and hepatitis-B
(2) Important common mucosal lesions:
White lesions: Chemical burns, leukodema, leukoplakia, fordyce spots, stomatitis nicotina palatinus, white sponge nevus, candidiasis, lichen planus, discoid lupus erythematosis
Veiculo-bullous lesions: Herpes simplex, herpes zoster, herpangina, bullous lichen planus,
pemphigus, cicatricial pemphigoid erythema multiforme.
Ulcers: Acute and chronic ulcers
Pigmented lesions: Exogenous and endogenous
Red lesions: Erythroplakia, stomatitis venenata and medicamentosa, erosive lesions and denture sore mouth.
(3) Cervico-facial lymphadenopathy
(4) Facial pain:
(i) Organic pain: Pain arising from the diseases of orofacial tissues like teeth, pulp, gingival,

periodontal tissue, mucosa, tongue, muscles, blood vessels, lymph tissue, bone,
paranasal sinus, salivary glands etc.,
(5) Tongue in local and systemic disorders: (Aglossia, ankyloglossia, bifid tongue, fissured tongue, scrotal tongue, macroglossia, microglossia, geographic tongue, median
rhomboid glossitis, depapillation of tongue, hairy tongue, atrophic tongue, reactive lymphoid hyperplasia, glossodynia, glossopyrosis, ulcers, white and red patches etc.)

(6) Oral manifestations of:
(i) Metabolic disordeers:
(a) Porphyria
(b) Haemochromatosis
(c) Histocytosis X diseases
(ii) Endocrine disorders:
(a) Pituitary: Gigantism, acromegaly, hypopitutarism
(b) Adrenal cortex: Addison's disease (Hypofuntion) Cushing's syndrome (Hyperfunction)
(c) Parathyroid glands: Hyperparathyroidism.
(d) Thyroid gland: (Hypothyroidism) Cretinism, myxedema
(e) Pancreas: Diabetes
(iii) Nutritional deficiency: Vitamins: riboflavin, nicotinic acid, folic acid Vitamin B12, Vitamin C (Scurvy
(iv) Blood disorders:
(a) Red blood cell diseases
Deficiency anemias: (Iron deficiency, plummer – vinson syndrome, pernicious anemia)
Haemolytic anemias: (Thalassemia, sickle cell anemia, erythroblastosis fetalis) Aplastic anemia, Polycythemia
(b) White Blood cell diseases
Neutropenia, cyclic neutropenia, agranulocytosis, infectious mononeucleosis and leukemias
(c) Haemorrhagic disorders:
Thrombocytopenia, purpura, hemophillia, chrismas disease and von willebrand's disease
(8) Disease of salivary glands:
(i) Development distrubances: Aplasia, atresia and aberration
(ii) Functional disturbances:Xerostomia, ptyalism
(iii) Inflammatory conditions: Nonspecific sialadenitis, mumps, sarcoidosis, heerdfort's syndrome (Uveoparotid fever), Necrotising sialometaplasia
(iv) Cysts and tumors: Mucocele, ranula, pleomorphic adenoma,

mucoepidermoid carcinoma
(v) Miscellaneous: Sialolithiasis, Sjogren's syndrome, mikuliez's disease and sialosis
(7) Dermatological diseases with oral manifestations:
(a) Ectodermal dysplasia (b) Hyperkerotosis palmarplantaris with periodontopathy (c)Scleroderma (d) Lichen planus
including ginspan's syndrome (e) Lupus erythematosus (f) Pemphigus (g) Erythema multiforme (h) Psoriasis
(8) Immunological diseases with oral manifestations
(a) Leukemia (b) Lymphomas (c) Multiple mycloma (d) AIDS clinical manifestations, opportunistic infections, neoplasms (e) Thrombcytopenia (f) Lupus erythematosus (g)
Scleroderma (h) dermatomyositis (I) Submucous fibrosis (j) Rhemtoid arthritis (k) Recurrent oral ulcerations including behcet's syndrome and reiter's syndrome
(9) Allergy: Local allergic reactions, anaphylaxis, serum sickness (local and systemic allergic manifestations to food drugs and chemicals)
(10) Foci of oral infection and their ill effects on general health
(11) Management of dental problems in medically comrpomised persons:
(i) Physiological changes: Puberty, pregnancy and menopause
(ii) The patients suffering with cardiac, respiratory, liver, kidney and bleeding disorders, hypertension, diabetes and AIDS. Post-irradiated patients.
(11) Precancerous lesions and conditions
(12) Neuralgic pain due to unknown causes: Trigeminal neuralgia
(13) MPDS, Bell's palsy

DESIRABLE TO KNOW 10HRS

Forensic examination – Procedures for post-mortem dental examination; maintaining dental records and their use in dental practice and post-mortem identification; jurisprudence and ethics

(1) Diseases of bone and Osteodystrophies: Development disorders: Anomalies, Exostosis and tori, infantile cortical hyperostosis, osteogenisis imperfecta, Marfans syndrome, osteopetrosis.
(2)Metabolic disorders – Histiocytosis
(3)Endocrine – Acro-megaly and hyperparathyroidism
Miscellaneous – Paget's disease, Mono and polyostotic fibrous dysplasia, Cherubism.
(4) Granulomatous diseases: Tuberculosis, Sarcoidosis, Midline lethal granuloma, Crohn's Disease and Histiocytosis X

(5) Miscellaneous Disorders: Burkitt lymphoma, sturge – Weber syndrome, CREST syndrome, rendu-osler-weber disease

1) Pain arising due to C.N.S. diseases: (a) Pain due to intracranial and extracranial involvement of cranial nerves. (Multiple sclerosis, cerebrovascular diseases, trotter's syndrome etc.)
(b) Neuralgic pain due to unknown causes:, glossopharyngeal neuralgia, sphenopalatine ganglion neuralgia, periodic migrainous neuralgia and atypical facial pain
(iii) Referred pain: Pain arising from distant tissues like heart, spine etc.,
(2) Altered sensations: paresthesia, halitosis
(3) Nerve and muscle diseases:
(i) Nerves: (a) Neuropraxia (b) Neurotemesis (c) Neuritis (d) Facial nerve paralysis including Heerfordt's syndrome, Melkerson Rosenthel syndrome and ramsay hunt syndrome (e) Neuroma (f) Neurofibromatosis (g) Frey'syndrome
(ii) Muscles: (a) Myositis ossificans (b) Myofascial pain dysfunction syndrome
(c) Trismus
(4) Forensic odontology:
(a) Medicolegal aspects of orofacial injuries
(b) Identification of bite marks
(c) Determination of age and sex
(d) Identification of cadavers by dental appliances, Restorations and tissue remanants
(5) Therapeutics: General therapeutic measures – drugs commonly used in oral
medicine viz., antibiotics, chemotherapeutic agents, anti-inflammatory and analgesic drugs, astringents, mouth washes, styptics, demelucents, local surface anaesthetic, sialogogues, antisialogogues and drugs used in the treatment of malignancy

ORAL RADIOLOGY

MUST KNOW **20 HRS**

(1) Scope of the subject and history of origin(2) Physics of radiation: (a) Nature and types of radiations (b) Source of radiations (c) Production of X-rays (d) Properties of X-rays
(e) Compton effect (f) Photoelectric effect (g) Radiation measuring units

(3) Biological effects of radiation
(4) Radiation safety and protection measures
(5) Principles of image production
(6) Radiographic techniques:
(i) Intra-Oral: (a) Periapical radiographs (Bisecting and parallel technics)
(b) Bite wing radiographs (c) Occlusal radiographs
(ii) Extra-oral: (a) Lateral projections of skull and jaw bones and paranasal sinuses (c) Cephalograms (d) Orthopantomograph (e) Projections of temperomandibular
joint and condyle of mandible (f) Projections for Zygomatic arches
(iii) Specialised techniques: (a) Sialography (b) Xeroradiography (c) Tomography
(7) Factors in production of good radiographs:
(a) K.V.P. and mAs of X-ray machine (b) Filters (c) Collimations (d) Intensifying screens (e) Grids (f) X-ray films (g) Exposure time (h) Techniques (i) Dark room (j) Developer and fixer solutions (k) Film processing
(8) Radiographic normal anatomical landmarks
(9) Faculty radiographs and artefacts in radiographs
(10) Interpretation of radiographs in various abnormalities of teeth, bones and other orofacial tissue.

DESIRABLE TO KNOW 10 HRS

Principles of radiotherapy of orofacial malignancies and complications of radiotherapy
Contrast radiography and basic knowledge of radio-active isotopes
Radiography in Forensic Odontology - Radiographic age estimation and post-mortem radiographic methods

4A.4.3 EXAMINATION PATTERN

SR. NO	NAME OF THE EXERCISE	TIME ALLOTED	MARKS ALLOTED
1.	Spotters	18 mins	25 marks
2	Case History Taking	30 mins	25 marks
3	IOPA Taking And Interpretation	30 mins	25 marks
4	Journal		5 marks
5	Internal Assessment And Attendance		20 marks
	TOTAL	1 Hour & 18mins	100 marks

SECTION- 4B

SECTION-4B
4B.1 ORAL & MAXILLOFACIAL SURGERY

4B.1.1.a AIMS:
The dental graduates should acquire adequate knowledge, necessary skills and reasonable attitudes which are required for carrying out diagnosis, prevention, surgical and adjunctive treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues.

4B.1.1.b OBJECTIVES :

i) Knowledge and understanding:

-The graduate should acquire the following during the period of training.

-Adequate knowledge of the scientific foundations on which oral and maxillofacial surgery is based and good understanding of various relevant scientific methods, principles of biological functions and should be able to evaluate and analyse scientifically various established facts and data.

-Adequate knowledge of the development, structure and function of the teeth, mouth and jaws and associated tissues both in health and disease and their relationship and effect on general-state of health and also the bearing on physical and social well-being of the patient.

-Adequate knowledge of clinical disciplines and methods, which provide a coherent picture of anomalies, lesions and diseases of the teeth, mouth and jaws and preventive, diagnostic and therapeutic aspects of oral and maxillofacial surgery.

-Adequate clinical experience required for general dental practice.

-Adequate knowledge of biological function and behaviour of persons in health and sickness as well as the influence of the natural and social environment on the state of health so far as it affects dentistry.

ii) Skills:

-A graduate should be able to demonstrate the following skills necessary for practice of dentistry.

-Able to diagnose and manage various common dental problems encountered in general dental practice, keeping in mind the expectations and the right of the society to receive the best possible treatment available wherever possible.

-Acquire skill to prevent and manage complications if encountered while carrying out various dental surgical procedures.
-Possess skill to carry out required investigative procedures and ability to interpret laboratory findings.
-Promote oral health and help to prevent oral diseases wherever possible.
-Competent in control of pain and anxiety during dental treatment.
-Possess skill to administer local anesthesia properly
-Possess skill to perform extractions and simple minor surgical procedures
-Possess skill to manage complications in the dental clinic

iii) Attitudes:

-A graduate should develop during the training period the following attitudes.
-Willing to apply current knowledge of oral surgery in the best interest of the patients and the community.
-Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
-Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.
-Willingness to participate in the continuing education programmes to update knowledge and professional skills from time to time.
-To help and to participate in the implementation of national health programmes.
-To assume legal, ethical and moral responsibilities of the patients for oral surgical procedures.

4B.1.2: SYLLABUS (Including Teaching Hours.)

MUST KNOW **59 HRS**

INTRODUCTION TO ORAL SURGERY 01 HR

- Introduction.
- Definition.
- Scope.
- Aims and objectives.

DIAGNOSIS IN ORAL SURGERY 03 HRS

- History taking.
- Clinical examination.
- Investigations.

PRINCIPLES OF INFECTION CONTROL 01 HR

GENERAL PRINCIPLES OF ORAL SURGERY 02 HRS

- Asepsis and sterilization.
- Access:

1. Intra-oral:

- Mucoperiosteal flaps -principles.
- Commonly used intra oral incisions.
- Bone Removal: Methods of bone removal.

2. Extra-oral-

- Skin incisions – principles.

2) Control of haemorrhage during surgery:

- Normal Haemostasis
- Local measures available to control bleeding

3) Drainage & Debridement:

- Purpose of drainage in surgical wounds.
- Debridement: Purpose

4) Closure of wounds:

- Suturing: Principles.
- Suture material.
- Classification.

5) Post-operative care:

- Post-operative instructions.
- Physiology of cold and heat.
- Control of pain –analgesics.
- Control of infection –antibiotics.
- Control of swelling – anti-inflammatory drugs.

EXODONTIA **03 HRS**

1) General considerations.
2) Ideal Extraction.
3) Indications and contraindications for extraction of teeth
4) Extractions in medically compromised patients.
5) Methods of extraction –
   (a) Forceps or intra-alveolar or closed method. Principles, types of movement, force etc.
   (b) Trans-alveolar / surgical method. Indications, surgical procedure.
6) Dental elevators: uses, classification, principles in the use of elevators, Commonly Used elevators

IMPACTED TEETH: 04 HRS

-Incidence definition, aetiology.
(a) Impacted mandibular third molar.
-Classification, reasons for removal.
-Assessment - both clinical & radiological
-Surgical procedures for removal.
-Maxillary third molar- Indications for removal, classification, Surgical procedure for removal.
-Impacted maxillary canine- Reasons for canine impaction, Localization, indications for removal,
-Methods of management, labial and Palatal approach, Surgical exposure, transplantation, Removal

PRE-PROSTHETIC SURGERY: 02 HRS

1. Definition, classification of procedures.
2. Corrective procedures:
   a. Alveoloplasty,
   b. Frenoctemies.
3. Ridge extension or Sulcus extension procedures
   a. Indications
4. Ridge augmentation and reconstruction.
   a. Indications
5. Implants –
   a. Concept of osseointegration
   b. Knowledge of various types of implants

DISEASES OF THE MAXILLARY SINUS 02 HRS

1. Surgical anatomy of the sinus.
2. Sinusitis:
a. Etiology.
b. Clinical features.
c. Non – surgical management.
d. Names of surgical procedures and its principles.
3. Removal of root from the sinus.
4. Oro-antral fistula:
a. Etiology.
b. Clinical features.
c. Names of surgical procedures and its principles

DISORDERS OF T.M. JOINT 04 HRS

1. Applied surgical anatomy of the joint.
2. Dislocation:
    a. Definition of related terminologies.
    b. Types.
    c. Aetiology.
    d. Clinical features.
    e. Management – Non surgical.
    f. Comparison of dislocation and subluxation.
3. Ankylosis:
    a. Definition and classification.
    b. Aetiology
    c. Clinical features
    d. Management- Non surgical

INFECTIONS OF THE ORAL CAVITY 05 HRS

1. Introduction
2. Factors responsible for infection
3. Course of Infections.
4. Spread of odontogenic infections through various fascial spaces.
5. Dento-alveolar abscess - aetiology, clinical features and management.
6. Osteomyelitis of the jaws –
    a. definition,
    b. aetiology, pre-disposing factors.
    c. Classification
    d. Clinical features
    e. Management- Non surgical.

7. Ludwig's angina –
    a. Definition
    b. Aetiology
    c. Clinical features
    d. Management- Non surgical.

BENIGN CYSTIC LESIONS OF THE JAWS - 03 HRS

1. Definition
2. Classification
3. Pathogenesis.
4. Diagnosis –
    a. Clinical features
    b. Radiological
    c. Aspiration biopsy
    d. Use of contrast media
    e. Histopathology.
5. Management –
    a. Types of surgical procedures
    b. Rationale of the techniques,
    c. Indication

TUMOURS OF THE ORAL CAVITY – 03 HRS

1. General considerations
2. Non odontogenetic benign tumours
    a. Fibroma,
    b. Papilloma,
    c. Lipoma,
    d. Ossifying fibroma,
    e. Myxoma
    f. Ameloblastoma
        i. Clinical features,
        ii. Radiological appearance.
3. Carcinoma of the oral cavity -
    a. Biopsy
    b. TNM classification.
    c. Outline of management of squamous cell carcinoma
4. Role of dental surgeons in the prevention and early detection of oral cancer

FRACTURES OF THE JAWS 06 HRS

General considerations,
Types of fractures,
Aetiology
Clinical features

General principles of management.
Mandibular fractures –
Applied anatomy
Classification.
Diagnosis - Clinical
Radiological
Fractures of the condyle
Aetiology
Classification
Clinical features
Fractures of the middle third of the face.
Definition of the mid face
Applied surgical anatomy
Classification
Clinical features
Alveolar fractures - methods of management

Fractures of the Zygomatic complex
Classification
Clinical features
Indications for treatment.

Salivary gland diseases 03 HRS
Diagnosis of salivary gland disease
Sialography, contrast media,
procedure.
Infections of the salivary glands
Sialolithiasis - Sub mandibular duct and gland and parotid duct.
Clinical features, management

Jaw deformities 02 HRS
Basic forms – Prognathism
Retrognathism
Open bite
Reasons for correction.

Neurological disorders 03 HRS
Trigeminal neuralgia –
Definition, etiology, clinical features and medical management.
Facial paralysis –
Definition, etiology and clinical features.
Nerve injuries – Classification

Cleft Lip and Palate 01 HR
Aetiology of the clefts.
Incidence of the clefts.
Classification of the clefts.

Medical Emergencies in dental practice 03 HRS
Primary care of medical emergencies in dental practice particularly –

a. Cardio vascular
b. Respiratory
c. Endocrine
d. Anaphylactic reaction
e. Epilepsy

Emergency drugs and procedures 01 HR
Emergency drugs

Oral Implantology 02 HRS

a. Concept of osseo integration
b. Knowledge of various types of implants

ANAESTHESIA 05 HRS

LOCAL ANAESTHESIA:

1. Introduction
2. Concept of L.A
3. Classification of local anaesthetic agents
4. Ideal requirements
5. Mode of action
6. Types of local anaesthesia
7. Use of Vasoconstrictors in local anaesthetic solution -
8. Advantages, contra-indications, various vaso constrictors used.
9. Anaesthesia of the mandible
    a. Pterygomandibular space - boundaries, contents etc.
        i. Inferior Dental Nerve Block – various techniques
        ii. Complications
    b. Mental foramen nerve block
10. Anaesthesia of Maxilla -
    a. Intra - orbital nerve block.
    b. Posterior superior alveolar nerve block
    c. Maxillary nerve block - techniques.

DESIRABLE TO KNOW **28HRS**

Infection control 01 HR
Cross-infection control with particular reference to HIV/AIDS and Hepatitis

General principles of Oral Surgery 01 HR
a) Surgery set up.
b) Access:
1. Intra-oral-
1) Use of Burs:
Advantages,
Precautions.
2) Bone cutting instruments: Principles of using chisel & osteotome.
2. Extra-oral-
Various extra-oral incisions to expose facial skeleton.
1) Submandibular.
2) Pre auricular.
3) Incisions to expose maxilla & orbit.
4) Bicoronal incision.
c) Control of haemorrhage during surgery:
1) Hypotensive anaesthesia.
d) Drainage & Debridement:
1) Types of drains used.
2) Debridement:
Soft tissue & Bone debridement.
e) Closure of wounds:
1) Body response to various materials.
f) Long term post operative follow up – significance

Exodontia 01 HR
1) Complications of Exodontia:
(a) Operative complications common to both maxilla and mandible.
(b) Post-operative complications.
(c) Prevention and management of complications

Impacted teeth: 02 HRS
Complications during and after removal,
Prevention and management

Pre-prosthetic Surgery 01 HR
1. Corrective procedures:
a. Reduction of maxillary tuberosities,
b. Removal of tori.

2. Ridge extension or Sulcus extension procedures
a. Surgical procedures
3. Ridge augmentation and reconstruction.
a. Use of bone grafts, Hydroxyapatite
4. Implants -
a. Surgical procedure to place implants.

Diseases of the maxillary Sinus 01 HR
1. Sinusitis
a. Surgical approach of sinus – description of various surgical procedures and complications.
2. Oro-antral fistula:
a. Various surgical methods for closure.
b. Complications

Disorders of T.M. Joint 01 HR
1. Dislocation –
a. Management – surgical.
2. Ankylosis –
a. Management- surgical.
3. Internal derangement
4. Arthritis of T.M. Joint.

Infections of the Oral cavity 01 HR
1. Osteomyelitis of the jaws –
a. Management.
2. Ludwigs angina –
a. Management
3. Complications

Benign cystic lesions of the jaws 01 HR
1. Management -
a. Procedures
2. Complications

Tumours of the Oral cavity 01 HR
1. Ameloblastomaa. methods of management.
2. Carcinoma of the oral cavity
a. management of squamous Cell carcinoma:
i. Surgery
ii. Radiation
iii. Chemotherapy

Fractures of the jaws 02 HRS
Mandibular fractures
Management – Reduction Closed/Open
Fixation and immobilization methods
Outline of rigid and semi-rigid internal fixation.
Fractures of the condyle
Principles of management.
Fractures of the middle third
of the face.
Outline of management.
Fractures of the Zygomatic
complex
Various methods of reduction and fixation.
Complications of fractures -
Delayed union
Non-union
Malunion

Salivary gland diseases 01 HR
Salivary fistulae
Common tumours of salivary glands like Pleomorphic adenoma including minor salivary glands

Jaw deformities 02 HRS
Outline of surgical methods Carried out on mandible and maxilla

Neurological disorders 02 HRS
Trigeminal neuralgia –Surgical management.
Facial paralysis –Management.
Nerve injuries –Neurorhaphy

Cleft Lip and Palate 01 HR
Role of dental surgeon in the management of cleft patients.
Outline of the closure procedures

Emergency drugs and procedures. 01 HR
Intra muscular I.V. Injections – Applied anatomy, Ideal location for giving these injections, techniques etc

Oral Implantology 01 HR
Surgical procedure to place implants

Ethics 01 HR

Patient- doctor relationship.
Doctor – doctor relationship.
Informed consent.
Medicolegal considerations

ANAESTHESIA **03 HRS**

LOCAL ANAESTHESIA:

a. Complications of local anesthesia.

GENERAL ANAESTHESIA

1. Concept of general anaesthesia.
2. Indications of general anaesthesia in dentistry.
3. Pre-anaesthetic evaluation of the patient.
4. Pre-anaesthetic medication - advantages, drugs used.
5. Commonly used anaesthetic agents.
6. Complication during and after G.A.
7. I.V. sedation with Diazepam and Medozolam.
8. Indications, mode of action, technique etc.
9. Cardiopulmonary resuscitation
10. Use of oxygen and emergency drugs
11. Tracheostomy

Recent advances 03 HRS

1.Peizosurgery
2.Nanosurgery
3.Navigation surgery
4.Endoscopic surgery
5.Computer assisted local anaesthesia delivery system.

4B.1.3EXAMINATION PATTERN:

Sr. No.	Exercises	Marks	Duration
1.	Case history and clinical examination	10	15 min
2.	Local anesthesia technique	10	40 min
3.	Exodontia technique	25	
4.	Spots	30	25 min
5.	Postoperative instructions, management and chair side orals	10	10 min
6.	Journal	05	NA

SECTION-4B
CHAPTER-2
PROSTHODONTICS AND CROWN & BRIDGE

4B.2.1.a AIM:

-To impart knowledge and provide training in the field of Prosthodontic treatment modalities to undergraduates, to examine, diagnose and formulate a treatment plan to deal with edentulous conditions by way of providing suitable prosthesis for e.g. Complete denture, Removable and Fixed partial dentures, Crowns, Special prostheses, Dental Implants and Maxillofacial Prosthesis.

-To inculcate communication skill in order to practice ethical Prosthodontic treatments and to generate judgment skill in making appropriate decision regarding prevention, treatment aftercare and referral to deliver comprehensive dental care to patient.

-To generate manpower and technical expertise for outreach and extension activities in rural and tribal areas.

4B.2.1.b OBJECTIVES:

a. Knowledge:

-The dental graduate should acquire basic knowledge related to dental science in the field of Prosthodontics and should have proper understanding of various steps involved/techniques and materials to be used for fabrication of various prosthesis.

-The information related to the stomatognathic system and its applied Prosthodontic considerations.

-Adequate knowledge to treat the patients having partial or total edentulism, to restore the functions affected due to loss of teeth.

-The learner should be able to detect anomalies or abnormalities of oral hard and soft tissues including jaw bones and to treat the problem / disease.

b. Skill:

-A dental graduate should be able to demonstrate the following skill necessary in the field of prosthodontics:

-To record relevant history, to perform details examination and to diagnose the condition and decide treatment modalities required for that case.

-To interpret radiographs & should be in position to refer complicated cases to concerned specialist.

-To inculcate the sense of discipline, conversation skill and to develop rapport with patient and community.
-Adequate technical skill to perform various steps in clinic and laboratory while fabrication of required prosthesis.

c. Attitude:
-A dental graduate should develop during the following attitude required for successful practice
-To treat all patients with equity and respect.
-To develop attitude for ethical practice & perfect patient care and management.
-To develop interest for research and participation in research activities and importance of research publications and opportunities in global perspectives.
-Should participate in CDE programme to update the knowledge and professional skill from time to time.

4B.2.1c: OUTCOMES :

1) To provide training in the subject to Undergraduate.
2) To inculcate technical and communicative skill to practice Prosthodontic.
3) To render quality treatment to patients for complete denture, removable partial denture and fixed partial denture
4) To provide manpower and technical expertise for outreach and extension activities related to Community oral health care
5) To achieve excellence in academics and providing the State-of-Art services to the community including selection and manipulation of various dental materials.
6) To inculcate communication skill and advice related to ethical practices

4B.2.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW **30 HRS**

1. Introduction to Complete Dentures:
   Components / Parts of a Complete Dentures
   Steps in fabrication of Complete Dentures

2. Diagnosis & Treatment Planning
   Clinical History taking

3. Mouth Preparation in Complete Dentures
   Pre-prosthetic surgery

4. Impression Making
   Objectives of impression making
   Theories of impression making
   Anatomical landmarks
   Recording PI& FI
   Beading & Boxing

5. Maxillo & mandibular Relation
   Mandibular Movements
   Orientation JR
   Vertical JR
   Centric JR
   Anatomy of TMJ
   Facebow Parts

6. Articulators & Articulation
   Articulators
   Selection & Arrangement of teeth
   Balanced occlusion

7. Lab Steps in CD

8. Complete Denture Insertion
   Denture Insertion
   Post insertion instructions
   Post insertion problems

9. Relining & Rebasing
   Relining
   Rebasing

10 Special Complete Denture
   Over denture Basic aspect
   Immediate Denture Basic Concept
   Single CD Basic Aspect

EXPECTED TO KNOW **10 HRS**

Introduction to CD
Definition Of Prosthodontics
Definition of CD
Diagnosis & Treatment Planning
Patient evaluation
Radiographic Examination
Mouth Preparation in CD
Mouth preparation in CD
Impression Making
Impression Techniques in Special Cases
Reading of Impression
Indexing Master cast
Articulators & Articulation
Remounting
Lab Steps in CD
Lab Steps in CD
Special Complete Denture
Basic aspect of implant dentures

MUST KNOW

1. Relining & Rebasing: 02 HRS
   Definition
   Indications
   Contra-indications
   Advantages
   Disadvantages
   Relining procedures
   Rebasing procedure

2. Single complete denture — 02 HRS
   Definition
   Indications
   Contra-indications
   Advantages
   Disadvantages
   Occlusal modification techniques

3. Dentogenic concept and characterization: — 02 HRS
   Introduction
   Definition
   Dentogenic concept
   SPA factors

4. Overdentures: — 03 HRS
   Definition
   Indications
   Contra-indications
   Advantages
   Disadvantages
   Types of over denture
   Over denture attachment

5. Immediate Denture: — 01 HR
   Definition
   Types of immediate Denture
   Indications
   Contra-indications
   Advantages
   Disadvantages
   Treatment procedure

6. Implants in CD: — 03 HRS
   Definition
   Indications
   Contra-indications
   Advantages
   Disadvantages
   Types of Implant

7. Introduction classification term and terminology in RPD: 01 HR
   Terminology
   Indications
   Contra-indications of FPD
   Rationale of RPD Treatment
   Kennedys Classification System
   Apple gate rules for Classification

8. Diagnosis & treatment planning in RPD: 03 HRS
   Introduction
   Diagnostics Examination
   Patient interview
   Effect of physical problems on dental treatment
   Effects of drug
   Patients expectation
   Dental history
   Infection control & disinfection
   Evaluation of oral hygiene
   Radio Graph
   Diagnostic impression

9. Evaluation of diagnostic cast
   Treatment plan

10 Major connectors: 01 HR
   Definition
   Structural Requirements
   Types maxillary major connectors
   Indication of maxillary major connectors
   Types mandibular major connectors
   Indication of mandibular major
   Connectors

11 Minor connectors: 01 HR
   Definition
   Structural Requirements
   Types minor connectors

12 Direct retainers: 03 HRS
   Definition
   Classification
   Parts of the clasp
   Requirements of clasp design

Types of supra bulge clasps
Types of infra bulge clasps

13 Indirect Retainers: 01 HR
Definitions
Principles of indirect retention
Factors determining the effectiveness
Forms of indirect retention

14 Rest & Rest Seats: 01 HR
Definition
Structural Requirements of rest seats
Types of rest seats

15 I- Bar Removable Partial Dentures: 03 HRS
How does differ from conventional barclasp
Components of I bar
Design concepts
RPI system

16 Stress breakers: 01 HR
Definition
Principles of stress breakers
Types of stress breakers

17 Principles of RPD design: 01 HR
Mechanics of movement
Support vs force
Type of lever force & inclined plane
Types of fulcrum
Forces acting on partial denture
Factors influencing the magnitude of stresses
Controlling stress by design considerations

18 Surveying & Designing: 03 HRS
Definition
Parts of surveyor
Surveying the diagnostic cast
Tripoding of cast
Importance consideration in use of dental surveyor
Path of insertion
Factors influencing path of insertion
Principles & Philosophy of design

19	Functional impression in RPD: Influencing support of distal extension base Indications Impression methods	01 HR
21	Diagnosis & Treatment Planning in FPD: Abutment definition Ante's Law Criteria for selection of the abutment	03 HRS
22	Principal of Occlusion: Ideal Occlusion Balanced occlusion Group function occlusion Mutually protected occlusion	02 HRS
25	Principles of Tooth Preparation: Ideal requirements Biological considerations Mechanical considerations Esthetic considerations	01 HR
26	Restoration of endodontically treated teeth: Treatment planning Consideration for anterior teeth Principles of tooth preparation	01 HR
27	Complete Cast crown preparation: Advantages Disadvantages Indications Contraindications Recommended armamentarium Preparation steps Criteria for preparation	03 HRS
28	Metal ceramic crown preparation: Advantages Disadvantages Indications Contraindications	03 HRS

Recommended armamentarium
Preparation steps
Criteria for preparation

29 All ceramic crown preparation: 03 HRS
Advantages
Disadvantages
Indications
Contraindications
Recommended armamentarium
Preparation steps
Criteria for preparation

30 Metal ceramic Restoration: 03 HRS
Indications
Contra-indications
Advantages
Disadvantages
Trouble shooting

31 All ceramic restoration 03 HRS
Ideal requirements
Indications
Contra-indications
Advantages
Disadvantages
Methods to strengthen ceramics
Trouble shooting

32 Impression materials & techniques in FPD 01 HR
Fluid control
Retraction of the gingival
Elastic impression materials
Impression trays
Impression making methods

33 Provisional restoration 01 HR
Ideal requirements
Biological consideration
Mechanical consideration
Esthetic consideration
Techniques of temporization

DESIRABLE TO KNOW

Dentogenic concept and characterization	01 HR
General considerations	
Classification	
Technique of characterization	
Overdentures:	03 HRS
General considerations	
Patient selection	
Abutment selection	
Basic principles	
Implants in CD	02 HRS
Clinical procedure	
Lab procedure	
Prosthetic phase	
Mouth Preparation in RPD	03 HRS
I- Bar Removable Partial Dentures:	
Design variation	
Surveying & Designing:	
Essentials of design	
Design procedure	
Functional impression in RPD:	
Altered cast techniques	
Lab Procedure in RPD	
Diagnosis & Treatment Planning in FPD:	02 HRS
Introduction	
Examination	
Patient interview	
Effect of physical problems	
Effects of drug	
Dental history	
Infection control & disinfection	
Evaluation of oral hygiene	
Radio Graph	
Diagnostic impression	
Facebow recording	
Evaluation of diagnostic cast	
Centric relation recording	

Treatment plan
Selection of the abutment

Principal of Occlusion: 01 HR
Centric relation recording
Mandibular movement
Pathologic occlusion
Occlusal treatment

Periodontal Consideration in FPD: 01 HR
Anatomy
Examination diagnosis & treatment plan
Evaluation of initial therapy
Surgical therapy evaluation

Mouth Preparation in FPD: 01 HR
Oral Surgery procedure
Restorative procedure
Endodontic procedure
Periodontic procedure
Orthodontic procedure

Restoration of endodontically treated teeth: 01 HR
Procedures
Removal of the Endodontic filling material
Enlargement of canal
Preparation of the coronal tooth structure
Post fabrication procedures
Core fabrication procedures

Partial Veneer Crown, Inlay, Onlay preparation: 01 HR
Advantages
Disadvantages
Indications
Contraindications
Recommended armamentarium
Preparation steps
Criteria for preparation

All ceramic, Inlay, Onlay, Laminates preparation: 01 HR
Advantages
Disadvantages
Indications

Contraindications
Recommended armamentarium
Preparation steps
Criteria for preparation

Metal ceramic Restoration 01 HR
History
Metal Preparation
Porcelain preparation
Types of porcelain
Porcelain metal bonding
Procedure

All ceramic restoration 01 HR
History
Types of ceramic
All ceramic system

4B.2.3 EXAMINATION PATTERN

Name of the Exercise	Time	Marks
Case History	20 min	10
Tray Selection	10 min	10
Border moulding and Final impression	1hr and 20 min	35
Tooth preparation and wax pattern	1hr	30
Journal		05

SECTION-4B
CHAPTER-3
CONSERVATIVE DENTISTRY & ENDODONTICS

4B.3.1.a AIM:

To impart adequate knowledge and skill to the undergraduate and post graduate students to treat the patients by preserving the natural tooth with conservative approach and concept of esthetics by having research oriented approach.

4B.3.1.b OBJECTIVES:

Knowledge and Understanding:

To learn adequate knowledge and understanding about the normal anatomy and basic guidelines for the treatment by stepwise learning from preclinics to clinics

Skills:

To acquire necessary skills required for the diagnosis, treatment plan and treatment for simple to complex cases with the knowledge of preventing complications and management of those if occur.

Attitudes:

To have the attitude towards the wellbeing of the society with research oriented approach and participation in the implementation of health education program.

4B.3.1.c: OUTCOME:

To sculpt the student to become an independent dental clinician with clinical decision making ability and to serve the best to the patient in turn to society.

4B.3.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW

Nomenclature Of Dentition:
Tooth numbering systems - A.D.A. Zsigmondy Palmer and F.D.I. systems 01HRS

Principles Of Cavity Preparation :
Steps and nomenclature of cavity preparation
Classification of cavities
Nomenclature of floors & angles of cavities. 07HRS

Dental Caries : 03HRS
Aetiology Types of direct filling gold
Classification and clinical features
Morphological features
Microscopic features
Treatment Plans
Diagnosis and sequel of dental caries

Treatment Planning For Operative Dentistry: 02 HRS
Detailed clinical examination
Radiographic examination
Tooth vitality tests
Diagnosis
Treatment planning
Preparation of the case sheet

Armamentarium For Cavity Preparation: 04 HRS
General classification of operative instruments
Hand cutting instruments design formula
Rotary cutting instruments and dental bur
Mechanism of cutting
Evaluation of hand piece and speed
Current concepts of rotary cutting procedures
Sterilization
Maintenance of instruments.
Basic instrument tray set up

Control of Operating Field: 02 HRS
Light source, Sterilization of field of operation and control of moisture
Rubber dam in detail
Cotton rolls and anti sialogogues

Amalgam Restoration 03 HRS
Indication and contraindication
Physical and mechanical properties
Clinical features
Cavity preparation for Class I , II, V and III.
Step wise procedure for cavity preparation and restoration.
Failure of amalgam restoration

Pulp Protection : 06 HRS
Liners – Calcium Hydroxide
Varnishes and bases
Zinc phosphate
Zinc polycarboxylate
Zinc oxide eugenol
Glass ionomer cements

Anterior Restoration 06 HRS
Selection of cases
Selection of material
Step wise procedures for using restorations.
Glass ionomer, composites including sandwich restorations and bevels of the same with a note on status of the dentine bonding agents.

Preventive Measures In Restorative Practice: 06HRS
Plaque Control
Pit and fissure sealants
Dietary measures
Periodontal health
Contact and contour of teeth
Tooth separation.
Matrices and wedges
Temporization or Interim Restoration 1HR

Pin retained Amalgam Restoration 3HRS
Indication and Contra Indication
Advantages disadvantages
Types of pin
Methods of placements
Use of automatrix
Failure of pin amalgam restoration

Management Of Deep Carious Lesions 02 HRS
Direct Pulp Capping.
Indirect Pulp Capping
Restorative measures

Non Carious Destruction's Tooth Structures 04 HRS
Diagnosis and Clinical Management
Hyper Sensitive Dentine And Its Management

Cast Restorations 05 HRS
Indications
Contra indications
Advantages and disadvantages and materials used for same
Cavity preparation

Gingival Tissue Management For Cast Restoration And Impression Procedures 02HRS

Recent Cavity Modification for Amalgam Restoration 01HRS

Differences between Amalgam And Inlay Cavity preparation 01 HRS

Note on all the types of Bevels used for Cast Restoration 01 HRS

Control Of Pain During Operative Procedure 01HRS

Treatment Planning For Operative Dentistry 02 HRS
Detailed Clinical Examination
Radiographic Examination

Vitality Tests 01 HRS
Diagnosis And Treatment Planning.
Preparation Of Case Sheet

Applied Dental Materials. 23HRS
Biological Considerations
Evaluation clinical application and adverse effects of the following Materials
Dental Cements.
Zinc oxide eugenol cements
Zinc phosphate cements
Polycarboxylates
Glass ionomer cements
Calcium hydroxides

Varnishes
Dental amalgam
Technical considerations mercury toxicity mercury hygiene
Composite, Dentine bonding agents, chemical and light curing composites
Rubber base Impression Materials
Nobel metal alloys & non noble metal alloys
Investment and die materials
Inlay casting waxes
Dental porcelain

Aesthetic Dentistry 04HRS
Anatomy & physiology of smile
Bleaching of teeth

Endodontics and introduction 04 HRS
Introduction, definition, scope and future of endodontics
Clinical diagnostic methods
Emergency endodontic procedures

Pulpal diseases 02 HRS
Causes
Types
Treatment.

Periapical diseases 02HRS
Acute periapical abscess
Acute periodontal abscess, phoenix abscess
Chronic alveolar abscess granuloma cysts condensing osteitis
External and internal resorption

Vital pulp therapy 02HRS
Indirect and direct pulp capping, pulpotomy
Different types of medicaments used

Apexogenesis and apexification or problems of open apex. 01HRS

Rationale of endodontic treatment,Objectives,Indication & Contraindications for root canal treatments 01HRS

Anatomy of the pulp cavity 01HRS
Root canals apical foramen
Anomalies of pulp cavities access cavity preparation of anterior and premolar teeth

Principles of root canal treatment 05 HRS
Access cavity preparation.
Root canal instruments
Hand instruments,
Power driven instruments
Standardization
Color coding principle of using endodontic instruments
Sterilization of root canal instruments and materials.
Rubber dam application

Determination of working length 02HRS
Traditional methods
Apex locator

Cleaning and shaping of root canals 02HRS
Irrigating solution
Chemical aids to instrumentation
Chelators

Disinfection of root canal space 02HRS
Intracanal medicaments
Poly antibiotic paste
Grossman's paste.

Methods of cleaning and shaping –principle & objectives 02HRS
Methods – step back technique
Crown down technique

Obturation of the root canal system 03 HRS
Requirements of an ideal root canal filling material
Obturation methods using gutta percha
Obturation material
Cold lateral condensation
Warm vertical condensation
Thermoplasticized obturation technique
Failures in endodontics.

Root canal sealers 02 HRS
Ideal properties
Classification
Manipulation of root and canal sealers

Problems during cleaning and shaping of root canal spaces (Endodontic mishaps) -02 HRS
Perforation and its management.
Broken instruments and its management
Management of single and double curved root canals.

Post endodontic restoration 02 HRS
Material used
Post and core

Smear layer and Its importance in endodontics and conservative dentistry 01 HRS

Discoloured teeth and its management 02 HRS
Bleaching agents
Vital and non vital bleaching method

Traumatic Injuries 03 HRS
Classification
Management of fractured tooth and root
Luxated teeth and its management

Endodontic surgeries 02HRS
Indication contraindications
Pre operative preparation
Pre medication
Surgical instruments
Techniques apicectomy
Retrograde filling
Post operative sequale
Terphination
Hemisection
Radisectomy techniques of tooth reimplantation (both intentional and accidental)
Endodontic implant

Root resorption 01 HRS

Emergency endodontic procedures 01 HRS

Lasers in conservative endodontics (introduction only) 01 HRS

Practice management 01 HRS

GOOD TO KNOW

Gnathological Concepts Of Restoration: 02 HRS

Physiology of occlusion
Normal occlusion
Ideal occlusion
Mandibular movements and occlusal analysis.
Occlusal rehabilitation and restoration

Direct Filling Gold Restorations : 02 HRS
Types of direct filling gold
Indications and limitations of cohesive gold.
Annealing of gold foil cavity
Preparation and condensation of gold foils.

Professional association dentist act 1948 and its amendment 1993.
Duties towards the govt. Like payments of professional tax, income tax.
Financial management of practice

Anterior Restorations
Silicate (theory only)

Dental material and basic equipment management.

Ethics

Cast Restorations 03 HRS
Fabrication of wax pattern
Class II and Class I cavity preparation for inlays
Investing
Spruing
Casting procedures
Casting defects
Biological Considerations

Silicate cement
Smart materials

Aesthetic Dentistry 03 HRS
Introduction & scope of esthetic dentistry
Role of the color in esthetic dentistry
Simple procedures (rounding of central incisors to enhance esthetic appearance)
Veneers with various materials
Preventive and interceptive esthetics
Simple gingival contouring to enhance the appearance

Disinfection of root canal space intracanal medicaments 02 HRS
Mummifying agents
Culture methods.

Cleaning and shaping
Newer methods & systems
Rotary endodontics

MTA 01 HRS

4B.3.3 EXAMINATION PATTERN

Exercise	Time allotted	Marks awarded
Journal	NA	05
Class 2 cavity preparation for silver amalgam restoration cavity base and restoration.	85 min	85

SECTION-4B
CHAPTER-4
PEDODONTICS

4B.4.1.a AIM:

The broad goal of the teaching of undergraduate students in Pedodontics & Preventive Dentistry, being an age defined specialty, aims at providing the student the knowledge of both the primary & comprehensive, preventive & therapeutic oral health care for infants & children through adolescence, including those with special health care needs who demonstrate mental, physical or emotional problems.

4B.4.1.b OBJECTIVES:

Knowledge:

-At the end of the course, the student shall be able to
-Provide a good oral health care in the child
-Instill a positive attitude & behavior in children
-Understand the principles of prevention & Preventive Dentistry right from birth to adolescents
-Guide & counsel the parents in regards to various treatment .

Skills:

-At the end of the course, the student shall be able to take case history of the child patient including thorough clinical & radiographicexamination as well as other investigations, diagnosis & treatment planning.
-Manage to repair & restore the lost tooth structure to maintain harmony between both hard & soft tissues of the oral cavity
-Diagnose & treat the child patient appropriately
-Prevent & intercept developing malocclusion
-Manage the disabled children effectively & efficiently to the needs of individual requirement & conditions

Attitude:

A graduate should develop during the training period the following attitude,
-Willing to apply the acquired knowledge of Pedodontics in the best interests of the patients and community
-Maintain a high standards of professional ethics and conduct and apply these in all aspect of professional life

-Seek to improve awareness and provide possible solution to the Pedodontics needs throughout the community
-Should participate in CDE programme to update the knowledge and professional skills from time to time

4B.4.1.b OUTCOME:

-Guide & counsel the parents in regards to various treatment modalities including different facets of Preventive Dentistry
-Manage to repair & restore the lost tooth structure to maintain harmony between both hard & soft tissues of the oral cavity
-Prevent & intercept developing malocclusion
-Manage the disabled children effectively & efficiently to the needs of individual requirement & conditions

4B.4.2 SYLLABUS (Including Teaching Hours.)

MUST KNOW

1 Introduction to Pedodontics 01HR

2. Growth & Development : 02 HRS
Prenatal & Postnatal
Development arches of Cranium, face, jaws, teeth and supporting structures.
Chronology of dental development and development of occlusion.

3. Child Psychology : 07 HRS
Development & Classification of behavior, personality, intelligence in children, theories of child psychology management.
Behavior Management : Non- Pharmacological.
Child Abuse & Dental Neglect.
Conscious sedation, Deep Sedation & General anesthesia in pediatric Dentistry(Including Other Drugs, Synergic & Antagonistic Actions Of Various Drugs Used In children)

4. Dental Caries 10HRS
Historical background
Definition, Aeitology & Pathogenesis.
Caries pattern in primary, Young permanent and permanent teeth in children.
Rampant caries, early childhood caries and extensive caries.
Definition, aeitology, pathogensis, Clinical features Complications Management.

Subjective & Objective methods of caries detections with emphasis on caries

Activity : Tests, Caries Prediction, caries susceptibility & their clinical Applications.

5. Case History :

Recording, Outline of Principles of examinations, diagnosis & treatment planning. 05 HRS

6. Pediatric Oral Medicine & clinical Pathology : 02 HRS

Recognition & Management of development dental anomalies, teething disorders, stomatological conditions, mucosal lesions, viral infections etc.

7. Preventive Pedodontics : 03 HRS

Concept , chair side preventive measures for dental diseases, high-risk caries including rampant & extensive caries- Recognition, Features & preventive Management, Pit Fissures Sealants, Oral Hygiene measures, correlation of brushing with dental caries and periodontal diseases

8. Microbiology & Immunology as related to oral Diseases in Children : 02 HRS

Basic concepts, Immune system in human body, Auto Immune dieses

9. Dental Material used in pediatric Dentistry. 05 HRS

Pediatric Operative Dentistry.

10. Gingival & Periodontal diseases in children : 02 HRS

Gingival & Periodontium in children .

Gingival & Periodontal diseases – Etiology. Pathogenesis & Management In Short

11. Pediatric Endodontics : 08 HRS

Primary Dentition :- Diagnosis of Pulpal dieses and their management – Pulp capping, pulpotomy, pulpectomy, (Materials & Methods), Controversies & recent concepts.

Young Permanent teeth and permanent teeth, pulp capping,

Pulpotomy, Apexogensis,

Apexification, concepts, Techniques and materials used for different procedures.

Prosthesis consideration in pediatric Dentistry. 02 HRS

12. Traumatic Injuries in Children : 09 HRS
    Classification & Importance
    Sequalae & raction of teeth to trauma
    Management of trauma.
    Management of Traumatized teeth with latest concepts

14. Space Maintenance 07 HRS
    Oral Habits in Children :
    Definition, Etilogy
    lassification.
    Factors to be considered before giving a space maintainer.
    Different space maintainers according to clinical situations.
    Clinical features of digit sucking, tongue thrusting, mouth breathing & various othersecondary habits.
    Management of oral habits in children.

15. Fluorides : 07 HRS
    Historical background.
    Systemic & topical fluorides.
    Mechanism of action.
    Toxicity & Management.
    Defluoridation techniques

16. Management of handicapped child and management of patients with systemic condition. 08 HRS
    Definition, Etiology & Classification , Behavioral ,clinical features, & Management of
    Physically handicapping Conditions
    Mentally compromising Conditions

DESIRABLE TO KNOW

History of Pedodontics & Pedodontics treatment triangle 01 HR

Dimensional Changes in dental arches & Cepholometric evaluation of growth. 01 HR

Stage of Psychological child development, fear, anxiety, apprehension andPharmacological Methods of management. 01 HR

Dietary Modifications & Diet Counseling 01 HR

Congenital Abnormalities in Children 01 HR

Definition, Classification, Clinical Features & management .
Dental Emergencies in children and their Management

Diet & Nutrition as related to dental caries & Diet Counseling. 01 HR

Histopathology, Pathogenesis, Immunology of dental caries, Periodontal diseases, Tumors, Oral Mucosal Lesions etc. 01HR

Nanotechnology & Recent advances in dental materials. 01 HR

Genetics related to gingival & periodontal diseases. 01 HR

Recent Advances in Paediatric Endodontics 01 HR

Management of Jaw fracture in children 01 HR

Space Analysis & Cephalometrics. 01 HR

Genetic disorders 01 HR

4B.4.3EXAMINATION PATTERN

Name of Exercise	Time Allotted	Marks
Case history taking and radiograph	1 hour	90 marks

SECTION - 5

SECTION – 5

EVALUATION PATTERN OF INTERNAL ASSESSMENT

A total of 3 sessional examinations are conducted during the entire academic year. These three internal assessment exams are conducted on a regular basis according to the university norms. For continuous assessment of students every Monday, exam for one subject is conducted so that each subject is evaluated once a month. The aggregate of the monthly exams is considered as the 4th exam.

All exams are considered for final calculation of internal assessment marks. The best score of three exams is taken for calculation.

REGULAR BATCH

EXAMS	**I BDS**	**II BDS**	**III BDS**	**IV/I semester**	**IV/II semester**
First sessional	October	September	September	III BDS II Term (JAN)	IV/I semester August
Second sessional	December	December	December	July	January
Third/prelims	April	March	March	September	March
Monthly exam	Monday	Monday	Monday	Monday	Monday

ODD BATCH/WINTER

Exams	I BDS	II BDS	III BDS	IV/I Semester	IV/II Semester
First sessional	-	March	March	III BDS/II Term (July)	IV/I semester (Feb)
Second sessional	-	June	June	January	July
Third/ Prelims	-	September	September	March	September
Monthly exam	-	Monday	Monday	Monday	Monday

The distribution of marks in each exam [for theory and practical] is given below

THEORY

EXAMS	MCQs	SAQs	LAQs	Attendance marks	TOTAL MARKS
First sessional	10 marks	20 marks	10 marks	10 marks	50 marks
Second sessional	10 marks	20 marks	10 marks	10 marks	50 marks
Third sessional	20 marks	40 marks	20 marks	20 marks	100 marks
Fourth /Monthly	-	6 marks	4 marks	-	10 marks

PRACTICAL

EXAM	MARKS	ATTENDANCE	TOTAL MARKS
FIRST	40	10	50
SECOND	40	10	50
THIRD	80	20	100

- If student remains absent for sessional exam ,marks for monthly exam are considered
- If student remains absent on medical grounds, then, exam will be conducted within 15 days, on departmental level, for the practical examination

The marks for attendance are given in the following manner

- **For first and second sessional exam :** Total 10marks
- For 75% to 85% attendance - 5 marks will be given
- For 86% to 100% - 10 marks will be given

For third sessional/ prelims: Total 20 marks

- For 75% to 85% - 10 marks will be given
- For 86% to 100% - 20 marks will be given

Attendance is calculated for each sessional exam as follows

1. First sessional exam : From the beginning of the academic year to first sessional.

2. Second sessional exam : From the beginning to the second sessional.

3. Third sessional/prelims exam : From the beginning to third sessional (complete year till the prelims).

For IV/I and II semester subjects attendance calculated from III BDS.

Final internal assessment marks will be calculated as follows.

Theory:

The marks of best of 3 out of 4 exams will be sent to the university as a part of internal assessment for the final university examination.

Sr no	Name of the student	First Test max 10	Second Test max 10	Third Test max 10	Fourth Test mx 10	Aggregate best of 3 30 marks	Aggregate Total out of 10	Signature of student

The university examinations are conducted at the end of the academic year.

EXAMINATION PATTERN FOR THE UNIVERSITY EXAMINATION

Regular batch I ,II ,III BDS examinations are conducted in the month of May /June.

Regular batch IV/I Semester examinations are conducted in the month of November

IV/II Semester are conducted in the month of May/June

Odd batch I, II, III BDS examinations are conducted in the month of November/December

Odd batch IV/I Semester examinations are conducted in the month of May / June.

IV/II Semester are conducted in the month of November/December

Distribution of marks

I to IV BDS -

Theory – Total 100 marks

Section A – MCQs- 20 marks (20x1)
Section B- SAQs- 30 marks (10x3)
Section C – LAQs – 20 marks (2x10)
Theory Viva-voce – 20 marks
(taken during practical examination)
Internal assessment – 10 marks

Practical examination – Total 100 marks

Practical- 90 marks (distribution of marks is done according to individual subjects)
Internal assessment – 10 marks

II BDS Pre-clinical Prosthodontics & Pre-clinical Conservative Dentistry

Practical examination – Total 100 marks

Practical- 80 marks
Internal assessment – 20 marks

Outcome of these internal assessment examinations will be displayed and the marks will be informed to both the parents and the students.

Underperforming students will be given extra attention and every effort is made at the departmental level to improve the performance of the student/s in the subsequent examinations.

At the departmental level discussion will be taken regarding the answers for the questions asked in the examinations.

The theory syllabus is divided into “must know” and “desired to know”. The question paper consists of 80% questions from the category of “must know” and 20% from “desired to know” category.

The compilation of all the question papers will be done at the departmental level, so that each department will have its own question bank.

This helps the subsequent batches of students for better referencing and preparation for the examinations.

List of Books

Subject: **General Human Anatomy including Embryology and Histology**

1) Clinical Anatomy for Medical Students, Snell (Richard S.), Little Brown & company, Boston.
2) Anatomy, R J Last's - McMinn,
3) Cunningham Manual of Practical Anatomy: Head & Neck & Brain.Vol.III, Romanes (G.J) Oxford Medical publication.
4) Functional Histology, Wheater, Burkitt & Daniels, Churchill Livingstone.
5) Medical Embryology, Sadler, Langman's,
6) Grant's Atlas of Anatomy, James E Anderson, Williams & Wilkins.
7) Gray's Anatomy, Williams, Churchill Livingstone.
8) Medical Genetics, Emery.
9) Essentials of Anatomy for Dentistry Students, D R Singh, Wolters Kluwer.

Subject: **Physiology**

1) Text book of Physiology, Guyton
2) Review of Medical Physiology, Ganong
3) Human physiology, Vander
4) Concise Medical Physiology, Choudhari
5) Human Physiology, Chaterjee
6) Human Physiology for BDS students, A.K. Jain

Reference books;

1) Physiology, Berne & Levey
2) Physiological basis of Medical Practice, West-Best & Taylor's

Experimental Physiology:

1) Practical Physiology, Rannade
2) A text book of practical physiology, Ghai
3) Clinical Methods, Hutchison's

Subject: **Biochemistry**

1) Textbook of Biochemistry for Dental Students, DM Vasudevan, Sreekumari S
2) Text book of Biochemistry-U Satyanarayana

Reference books;

1) Harper's Biochemistry, R.K. Murray et.al.
2) Text book of Biochemistry with clinical correlations T.N. Devlin
3) Basic and applied Dental Biochemistry, R.A.D. Williams & J.C. Elliot
4) Nutritional Biochemistry S. Ramakrishnan and S.V. Rao

Subject: **Dental Anatomy, Embryology and Oral Histology**

1) Orban's Oral Histology & Embryology - S.N. Bhaskar
2) Oral Development & Histology - James & Avery
3) Wheeler's Dental Anatomy, Physiology & Occlusion – Major M. Ash
4) Dental Anatomy - its relevance to dentistry - Woelfel & Scheid
5) Applied Physiology of the mouth – Lavelle
6) Physiology & Biochemistry of the mouth – Jenkins
7) Oral Histology- 'Development, Structure and Function- A. R. Tencate

Subject: **General Pathology**

1) Robbins - Pathologic Basis of Disease Cotran, Kumar, Robbins
2) Anderson's Pathology Vol 1 & 2 Editors - Ivan Damjanov & James Linder
3) Wintrobe's clinical Haematology Lee, Bithell, Foerster, Athens, Lukens

Subject: **Microbiology**

1) Text book of Microbiology - R. Ananthanarayan & C.K. Jayaram Paniker.
2) Medical Microbiology - David Greenwood et al.

Reference books;

1) Microbiology - Prescott, et al.
2) Microbiology - Bernard D. Davis, et al.

3) Clinical & Pathogenic Microbiology - Barbara J Howard, et al.
4) Mechanisms of Microbial diseases - Moselio Schaechter, et al.
5) Immunology an Introduction – Tizard
6) Immunology - Evan Roitt, et al.

Subject: **Dental Materials**

1) Phillips Science of Dental Materials - Kenneth J. Anusavice
2) Restorative Dental Materials -Robert G. Craig
3) Notes on Dental Materials - E.C. Combe

Reference books:-

1) Introduction to Dental Materials, Van Noort,
2) Applied Dental Materials, McCabe,

Subject: **General and Dental Pharmacology and Therapeutics**

1) Basic and Clinical pharmacology, Bertam G. Katzung, Appleton & Lange
2) Clinical Pharmacology, Lauerence DR, Churchill Livingstone
3) Pharmacology and Pharmacotherapeutics Part I & Part II, Satoskar R.S. & Bhandarkar S. D, Popular Prakashan Mumbai.
4) Essentials of Medical Pharmacology, Tripathi K.D, Jaypee Brothers
5) Medical Pharmacology, Udaykumar, CBS publishing

Subject: **General Medicine**

1) Textbook of Medicine Davidson
2) Textbook of Medicine Hutchinson

Subject: **General Surgery**

1) Short practice of Surgery Baily & Love

Subject: **Oral Pathology & Oral Microbiology**

1) A Text Book of Oral Pathology Shafer, Hine & Levy
2) Oral Pathology - Clinical Pathologic correlations Regezi & Sciubba.

3) Oral Pathology Soames & Southam.
4) Oral Pathology in the Tropics Prabhu, Wilson, Johnson & Daftary
5) Synopsis of Oral Pathology, Bhaskar, CBS publishing

Subject: **Public Health Dentistry**

1) Dentistry Dental Practice and Community by David F. Striffler and Brain A. Burt, W. B. Saunders Company
2) Principles of Dental Public Health by James Morse Dunning, Harward University Press.
3) Dental Public Health and Community Dentistry Ed by Anthony Jong Publication by The C. V. Mosby Company
4) Community Oral Health-A system approach by Patricia P. Cormier and Joyce I. Levy published by Apple ton-Century-Crofts/ New York,
5) Community Dentistry-A problem oriented approach by P. C.
6) Dental Hand book series Vol.8 by Stephen L. Silverman and Ames F. Tryon, Series editor-Alvin F. Gardner, PSG Publishing company Inc. Littleton Massachusetts,
7) Dental Public Health- An Introduction to Community Dentistry. Edition by Geoffrey L. Slack and Brain Burt, Published by John Wright and sons Bristol.
8) Oral Health Surveys- Basic Methods, 1997, published by W. H. O Geneva available at the regional office New Delhi.
9) Preventive Medicine and Hygiene-By Maxcy and Rosenau, published by Appleton Century Crofts,
10) Preventive Dentistry-by J. O. Forrest published by John Wright and sons Bristoli,
11) Preventive Dentistry by Murray,.
12) Text Book of Preventive and Social Medicine by Park and park,
13) Community Dentistry by Dr. Soben Peter.
14) Public Health dentistry, Sikri. CBS Publishing

Subject: **Research methodology and Bio-statistics**

1) Introduction to Bio-statistics by B. K. Mahajan
2) Introduction to Statistical Methods by Grewal

Subject: **Paediatric and Preventive Dentistry**

1) Dentistry for the Child and Adolescence - Mc. Donald.
2) Pediatric Dentistry (Infancy through Adolescence) - Pinkham.
3) Pediatric Dentistry : Total Patient Care – Stephen H.Y. Wei
4) Clinical Pedodontics – Sidney B. Finn
5) Fundamentals of Pediatric Dentistry – R.J. Mathewson
6) Handbook of Clinical Pedodontics - Kenneth. D.
7) Text Book of Pedodontics- Shobha Tandon
8) Pediatric Dentistry - Damle S. G.
9) Kennedy's Pediatric Operative Dentistry - Kennedy & Curzon.
10) Handbook of Pediatric Dentistry – Cameron and Widmer
11) Pediatric Dentistry - Richard R. Welbury
12) Pedodontics: A Clinical Approach - Goran Koch
13) Orthodontics and Pediatric Dentistry (Colour Guide) - D Millet & R Welbury
14) Color Atlas of Oral Diseases in Children and Adolescents - George Laskaris
15) Dental Management of the Medically Compromised Patient –J.W. Little
16) Pediatric Dentistry – Scientific Foundations and Clinical Practice – Stewart and Barber.
17) Clinical Use of Fluorides - Stephen H. Wei.
18) Understanding of Dental Caries - Niki Foruk.
19) Essentials of Community & Preventive Dentistry - Soben Peters.
20) Behaviour Management – Wright
21) Traumatic Injuries - Andreason.
22) Occlusal Guidance in Pediatric Dentistry - Stephen H. Wei / Nakata
23) Pediatric Oral & Maxillofacial Surgery - Kaban.
24) Pediatric Medical Emergencies - P. S. Whatt.
25) An Atlas of Glass Ionomer Cements - G. J. Mount..
26) Textbook of Pediatric Dentistry - Braham Morris.
27) Primary Preventive Dentistry - Norman O. Harris.
28) Preventive Dentistry - Forrester.
29) Contemporary Orthodontics - Profitt..

30) Preventive Dentistry - Depaola.
31) Endodontics - Ingle.
32) Pathways of Pulp - Cohen.
33) Management of Traumatized anterior Teeth - Hargreaves.

Subject: **Oral Medicine and Radiology**

Oral Diagnosis, Oral Medicine & Oral Pathology

1) Oral Medicine, Burkit, J.B. Lippincott Company
2) Principles of Oral Diagnosis, Coleman, Mosby Year Book
3) Oral Manifestations of Systemic Diseases, Jones, W.B. Saunders company
4) Oral Diagnosis & Oral Medicine, Mitchell
5) Oral Diagnosis, Kerr
6) Oral Diagnosis & Treatment ,Miller
7) Clinical Methods, Hutchinson
8) Shafers, Oral Pathology
9) Principles and practice of Oral Medicine, Sonis.S.T., Fazio.R.C. and Fang.L

Oral Radiology

1) Oral Radiology White & Goaz, Mosby year Book
2) Dental Radiology, Weahrman,C.V. Mosby Company
3) Oral Roentgenographs Diagnosis, Stafne ,W.B. Saunders Co
4) Fundementals of Dental radiology, Sikri, CBS Publishing.

Forensic Odontology

1) Practical Forensic Odontology, Derek H. Clark, Butterworth-Heinemann
2) Manual of Forensic Odontology, C Michael Bowers, Gary Bell

Subject: **Orthodontics and Dentofacial Orthopedics**

1) Contemporary Orthodontics- William R. Proffit
2) Orthodontics For Dental Students- White And Gardiner
3) Handbook Of Orthodontics- Moyers
4) Orthodontics - Principles And Practice- Graber
5) Design, Construction And Use Of Removable Orthodontic Appliances- C. Philip Adams
6) Clinical Orthodontics: Vol 1 & 2- Salzmann

Subject: **Oral and Maxillofacial Surgery**

1) Impacted teeth, Alling John et al
2) Principles of Oral & maxillofacial Surgery vol1,2&3 Peterson LJ et al
3) Text book of Oral & maxillofacial Surgery, Srinivasan B
4) Hand book of Medical emergencies in the dental office, Melamed SF
5) Killey's Fracture of the Mandible, Banks
6) Killey's Fractures of the Middle 3 of the Facial Skeleton; Banks P
7) The Maxillary Sinus and its Dental Implications; Mc Govanda
8) Killey and Kays Outline of Oral Surgery - Fart l& 2; Seward GR & et al
9) Essentials of Safe Dentistry for the Medically Compromised Patients; Mc Carthy FM
10) Oral & Maxillofacial Surgery, Vol l& 2; Laskin DM
11) Extraction of Teeth; Howe GL
12) Minor Oral Surgery; Howe GL
13) Contemporary Oral & Maxillofacial Surgeiy; Peterson LJ
14) Text book of Oral &Maxillofacial Surgery , Neelima Anil Malik
15) Text book of Oral &Maxillofacial Surgery, SM Balaji
16) Principles of Oral Surgery; Moore J'R
17) Handbook of Local Anaesthesia, Malamed
18) Sedation; Malamed
19) Text book of Oral & Maxillofacial Surgery; Gustav O Kruger
20) A Practical guide to Hospital Dentistry, Dr. George Varghese, Jaypee brothers publishing, New Delhi.
21) A Practical guide to the Management of Impacted Tooth, Dr. George Varghese, Jaypee brothers publishing, New Delhi.
22) Textbook of Local Anaesthesia; Monheim

Subject: **Prosthodontics, and Crown & Bridge**

1) Syllabus of Complete denture -Charles M. Heartwell Jr. and Arthur O. Rahn
2) Prosthodontic treatment for edentulous patients- Carl O. Boucher
3) Essentials of complete denture prosthodontics by - Sheldon Winkler.
4) Maxillofacial prosthetics by - Willam R. Laney.
5) McCraken's Removable partial Prosthodontics
6) Removable partial Prosthodontics by - Ernest L. Miller and Joseph E. Grasso.
7) Stewart's Clinical Removable Partial Prosthodontics, Quintessence Publishing Co.
8) Fundementals of Fixed Prosthodontics, Shillingburg, Quintessence Publishing Co.
9) Management of Temporomandibular Disorders and Occlusion, Jeffery P. Okeson, Mosby Year book, Inc.

Subject: **Periodontology**

1) Glickman's Clinical Periodontology-Carranza

Reference books

1) Essentials of Periodontology and periodontics- Torquil MacPhee
2) Contemporary periodontics- Cohen
3) Periodontal therapy- Goldman
4) Orbans' periodontics- Orban
5) Oral Health Survey- W.H.O.
6) Preventive Periodontics- Young and Stiffler
7) Advanced Periodontal Disease- John Prichard
8) Clinical Periodontology- Jan Lindhe
9) Periodontics- Baer & Morris.

Subject: **Conservative Dentistry and Endodontics**

1) The Art & Science of Operative Dentistry, Sturdivant, Mosby U.S.A
2) Principle & Practice of Operative Dentistry, Charbeneu,Varghese Publishing, Mumbai.
3) Grossman's Endodontic Practice, B. Suresh Chandra & V. GopiKrishna, Wolters Kluwer

Subject: **Esthetic Dentistry**

1) Esthetic guidelines for restorative dentistry; Scharer & others
2) Esthetics of anterior fixed prosthodontics; Chiche (GJ) & Pinault (Alain)
3) Esthetic & the treatment of facial form, Vol 28; Mc Namara (JA)

Subject: **Forensic Odontology**

1) Practical Forensic Odontology- Derek Clark

Subject: **Behaviourial Science**

1) General Psychology- Hans Raj, Bhatia
2) Behavioural Sciences in Medical Practice- Manju Mehta
3) General psychology — Hans Raj, Bhatia
4) General psychology —Munn
5) Sciences basic to psychiatry -- Basanth Puri & Peter J Tyrer

Subject: **Ethics**

1) Medical Ethics, Francis C M, Jaypee Brothers, New Delhi

Subject: **Implantology**

1) Contemporary Implant Dentistry, Carl. E. Misch, Mosby
2) Osseointegration and Occlusal Rehabilitation, Hobo S., Ichida. E. and
3) Garcia L.T. Quintessence Publishing Company,

Note: 1. Book titles will keep on adding in view of the latest advances in the Dental Sciences.
2. Standard books from Indian authors are also recommended

List of Journals

1) Journal of Dentistry
2) British Dental Journal
3) International Dental Journal
4) Dental Abstracts
5) Journal of American Dental Association
6) British Journal of Oral and Maxillofacial Surgery
7) Oral Surgery, Oral Pathology and Oral Medicine
8) Journal of Periodontology
9) Journal of Endodontics
10) American journal of Orthodontics and Dentofacial Orthopedics
11) Journal of Prosthetic Dentistry
12) International Journal of Prosthodontics
13) Journal of Public Health Dentistry
14) Endodontics and Dental Traumatology
15) Journal of Dental Education
16) Dental Update
17) Journal of Dental Material
18) International Journal of Pediatric Dentistry
19) International Journal of Clinical Pediatric dentistry

Note: This is the minimum requirement. More journals both Indian and Foreign are recommended for imparting research oriented education.

INTERNSHIP PROGRAMME

After passing the Final BDS part II Degree Examination the candidate has to undergo Compulsory Paid Rotating Internship programme for Twelve months (i.e. 365 days) in the same institution. During this period the candidates will be posted in all the clinical departments of the institution. The Degree will be awarded only after successful completion of the Internship programme. During this training period they will have to attend to the routine clinical activities of the department under the supervision of faculty members. The interns will also be posted in the Dental Casualty for attending to the emergency services of the institution and may also include rural postings.

a) The duration of posting of interns in various departments will be as follows:-

Sl. No.	Department	No. of Days
1.	Prosthodontics	60
2.	Conservative dentistry	60
3.	Oral & maxillofacial Surgery	60
4.	Orthodontics	30
5.	Pedodontics	30
6.	Oral Medicine & Radiology	30
7.	Periodontics	30
8.	Community Dentistry/ Rural services/Palliative care	30
9.	Oral Pathology	15
10.	Elective (any of the subjects listed from 1 to 7)	20

b) Duties & responsibilities of Intern posted in various departments include:-

i. Attending to the routine O.P in the Department
ii. Carrying out the routine clinical procedures in the department
iii. Carrying out Patient and instrument Preparation for clinical procedures.

iv. Carrying out all Clinical procedures including impression making, and pouring casts (i.e. steps including mixing of impression materials & gypsum products, mixing of restorative materials and removal of casts from impressions to be done by the internee without seeking assistance)
v. Fabrication insertion and follow up of removable orthodontic appliances.
vi. Attending to the casualty duties of the institution
vii. Maintenance of log book and records
viii. Carrying out any other duty as instructed by the Head of the Department.
ix. Maintenance of proper dress code and attire.

Note: The entire clinical work done by intern will be under the supervision of faculty members. In the absence of faculty the intern will be under the supervision of Senior/Junior Resident.

b) Suggested internship programme in Community Dentistry:

i	At the college : Interns are posted to the department to get training in dental practice management. a) Total oral health care approach-in order to prepare the new graduates in their approach to diagnosis, treatment planning, cost of treatment, prevention of treatment on schedule, recall maintenance of records etc. at least 10 patients (both children and adults of all types). b) The practice of chair side preventive dentistry including oral health education
ii	At the community oral health care centre (adopted by the dental college in rural areas) Graduates posted to familiarize in : a) Survey methods, analysis and presentation of oral health assessment of school children and community independently using WHO basic oral health survey methods. b) Participation in rural oral health education programmes. c) Stay in the village to understand the problems and life in rural areas.

iii	In Pain and palliative care centre
iv	DESIRABLE : Practical knowledge in the use of computers : Operating system, word processor, spread sheet, power point and patient management software etc.