


THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY
No. 69, ANNA SALAI, GUINDY, CHENNAI – 600 032.

B.D.S.
DEGREE COURSES



SYLLABUS AND CURRICULUM


PRINCIPAL
SRIEETHVAI LALITHA SWIDGE &
RESEARCH INSTITUTE
17 HIGHWAY, KEELAKKAM
KANCHIPURAM DIST - 603 103

B.D.S. - DEGREE COURSE

Sl. No.	Subjects	Page. No.
I Year		
1.	General Anatomy including Embryology and Histology	1 - 16
2.	General Human Physiology and Biochemistry	17 - 44 45 - 56
3.	Dental Anatomy, Embryology and Oral Histology	57 - 67
II Year		
4.	General Pathology and Microbiology	1 - 12 13 - 21
5.	General and Dental Pharmacology and Therapeutics	22 - 27
6.	Dental Materials	28 - 46
7.	Pre Clinical Conservative Dentistry	47 - 54
8.	Pre Clinical Prosthodontics & Crown & Bridge	55 - 65
III Year		
9.	General Medicine	1 - 9
10.	General Surgery	10 - 16
11.	Oral Pathology and Oral Microbiology	17 - 30
IV Year		
12.	Oral Medicine and Radiology	1 - 20
13.	Paediatric and Preventive Dentistry	21 - 33
14.	Orthodontics and Dentofacial Orthopaedics	34 - 47
15.	Periodontology	48 - 56
16.	Prosthodontics and Crown and Bridge	57 - 65
17.	Conservative Dentistry and Endodontics	66 - 79
18.	Oral and Maxillofacial Surgery	80 - 105
19.	Public Health Dentistry	106 - 116



THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI

PREFACE

The Syllabus and Curriculum for the B.D.S.Courses have been restructured with the Experts from the concerned specialities to educate students of BDS course to

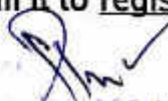
1. Take up the responsibilities of dental surgeon of first contact and be capable of functioning independently in both urban and rural environment.
2. Provide educational experience that allows hands-on-experience both in hospital as well as in community setting.
3. Make maximum efforts to encourage integrated teaching and de-emphasize compartmentalisation of disciplines so as to achieve horizontal and vertical integration in different phases.
4. Offer educational experience that emphasizes health rather than only disease.
5. Teach common problems of health and disease and to the national programmes.
6. Use learner oriented methods, which would encourage clarity of expression, independence of judgement, scientific habits, problem solving abilities, self initiated and self-directed learning.
7. Use of active methods of learning such as group discussions, seminars, role play, field visits, demonstrations, peer interactions etc., which would enable students to develop personality, communication skills and other qualities towards patient care.

The Students passing out of this Prestigious University should be 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 students 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.

(Subject to changes in Amendments in DCI Regulations and SAB Resolutions)

Prof. Dr.S.GEETHALAKSHMI, M.D., Ph.D.
VICE-CHANCELLOR

Comments / Feed back are welcome if any and mail it to registrar@tnmgrmu.ac.in


SECRETARY
TAMIL NADU
Dr. M.G.R. MEDICAL UNIVERSITY
CHENNAI

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY
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M.D.S.

DEGREE COURSES



SYLLABUS AND CURRICULUM

2018-2019

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI

PREFACE

The Syllabus and Curriculum for the M.D.S.Courses have been revamped with the Experts from the concerned specialities so as to impart high quality state of art training thereby setting higher standards.

The Students coming out of this Prestigious University should be competent in practice respective speciality efficiently and effectively, backed by scientific knowledge and skill.

Exercise empathy and a caring attitude and maintain high ethical standards.

Continue to evince keen interest in continuing professional education in the speciality and allied specialities irrespective of whether in teaching or practice.

Willing to share the knowledge and skills with any learner, junior or a colleague.

Develop the faculty for critical analysis and evaluation of various concepts and views, to adopt the most rational approach.

(Subject to changes in Amendments in DCI Regulations and SAB Resolutions)

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M.D.S. - DEGREE COURSE

Sl. No.	Specialities	Page. No.
1.	Prosthodontics and Crown & Bridge	1 - 24
2.	Periodontology	1 - 12
3.	Oral & Maxillofacial Surgery	1 - 19
4.	Conservative Dentistry and Endodontics	1 - 19
5.	Orthodontics and Dentofacial Orthopedics	1 - 16
6.	Oral and Maxillofacial Pathology and Oral Microbiology	1 - 27
7.	Public Health Dentistry	1 - 20
8.	Pediatric Dentistry	1 - 15
9.	Oral Medicine and Radiology	1 - 21

BRANCH – I PROSTHODONTICS AND CROWN AND BRIDGE

Prosthodontics and Crown & Bridge is a branch of dental art and science pertaining to the restoration and maintenance of oral function, health, comfort and appearance by the replacement of missing or lost natural teeth and associated tissues either by fixed or removable artificial substitutes

1. GOAL

The goals of the post-graduate training in various specialities is to train the graduate in Dental Surgery who will,

- (i) practice respective speciality efficiently and effectively, backed by scientific knowledge and skill;
- (ii) exercise empathy and a caring attitude and maintain high ethical standards;
- (iii) continue to evince keen interest in professional education in the speciality and allied specialities whether in teaching or practice;
- (iv) willing to share the knowledge and skills with any learner, junior or a colleague;
- (v) to develop the faculty for critical analysis and evaluation of various concepts and views and to adopt the most rational approach.

2. OBJECTIVES

(A) KNOWLEDGE

- (i) demonstrate understanding of basic sciences relevant to speciality;
- (ii) describe etiology, pathophysiology, principles of diagnosis and management of common problems within the speciality in adults and children;
- (iii) identify social, economic, environmental and emotional determinants in a given case and take them into account for planned treatment;
- (iv) recognise conditions that may be outside the area of speciality or competence and to refer them to the concerned specialist;
- (v) update knowledge by self study and by attending courses, conferences and seminars pertaining to speciality;
- (vi) undertake audit, use information technology and carry out research in both basic and clinical with the aim of publishing or presenting the work at various scientific gathering;

(B) ATTITUDE

1. Adopt ethical principles in all Prosthodontic practice, Professional honesty and integrity are to be fostered. Treatment to be delivered irrespective of social status, caste, creed or religion of patient
2. Willing to share the knowledge and clinical experience with professional colleagues
3. Willing to adopt new methods and techniques in prosthodontics from time to time based on scientific research, which is in patient's best interest
4. Respect patient's rights and privileges including patient's right to information and right to seek second opinion

(C) SKILLS

1. The candidate should be able to examine the patients requiring Prosthodontic therapy, investigate the patient systematically, analyse the investigation results, radiography,

GERIATRIC PATIENTS

Tooth and tooth surface restorations, crowns, fixed prosthesis, removable prosthesis 1 5

IMPLANT SUPPORTED COMPLETE PROSTHESIS

Implant supported complete prosthesis(Maxillary and mandibular) 1 1

MAXILOFACIAL PROSTHESIS

Guiding flange and obturators 1 4

Speech and palatal lift prosthesis 1 2

Eye prosthesis 1 2

Ear Prosthesis 1 2

Nose Prosthesis 1 2

Face prosthesis 1

Maxillectomy 1 2

Hemimandibulectomy 1 2

Cranioplasty 1 1

Finger / hand, foot 1 2

Body prosthesis 1 1

Management of burns, scars 1

TMJ SYNDROME MANAGEMENT

Splints- periodontal, teeth, jaws 4

TMJ supportive and treatment prosthesis 1 1

Stabilization appliances for maxilla and mandible with freedom to move from IP to CRCP 1

In IP without the freedom to move to CRCP 1

Repositioning appliances, anterior disclusion 1

Chrome cobalt and acrylic resin stabilization appliances for modification to accommodate for the irregularities in the dentition 2

Occlusal adjustment and occlusal equilibrium 1 4

FULL MOUTH REHABILITATION

Full mouth rehabilitation – Restoration of esthetics and function of stomatognathic system
1 4

INTER-DISCIPLINARY TREATMENT MODALITIES

Inter-disciplinary management – restoration of Oro craniofacial defects for esthetics, phonation, mastication and psychological comforts 1 2

MANAGEMENT OF FAILED RESTORATION

Tooth and tooth surface restoration 5

Removable prosthesis 10

Crowns and fixed prosthesis 5

Maxillofacial prosthesis 2
Implant supported prosthesis 1
Occlusal rehabilitation & TMJ Syndrome 2
Restoration failure of Psychogenic origin 5
Failure to age changes 2

* **Writing Thesis/Research papers:**

a) Library Dissertation - One dissertation within eighteen months from the date of commencement of the course.

b) Final Dissertation - Thesis to be submitted six months before Examination. Topic should be approved by the HOD and Professor in charge.

a) Attitudes including Communication Skills

- To develop positive attitudes towards colleagues, teachers and patients in order to maintain the decorum of the department/institution.
- To abide by the rules and regulations of the institution.
- Display good communication skills to provide suitable instructions to the patients.
- Display empathy and sympathy for the sufferings of the patient.
- Express and defend their scientific ideas to the fellow students, teachers and examiners.
- Obtain informed consent from the patient whenever necessary.

b) Training in Research Methodology, Biostatistics, Ethics / Bioethics in Dentistry, Jurisprudence and Audits

All MDS candidates shall compulsorily attend the Research Methodology Workshop conducted by the University within 6 months from the date of joining the course. In this regard, the candidates will be issued a completion Certificate by the University.

Health informatics – usage of information technology

- Basic understanding of computers and its components, operating software, Microsoft office, preparation of teaching materials like slides, project and multimedia knowledge.
- Information technology shall be used to store, prepare and document data collected or synthesized from available records.

4. THEORY SYLLABUS

BASIC SCIENCES SYLLABUS

A. APPLIED ANATOMY

1. Muscles of facial expression and muscles of mastication
2. Temporo mandibular joint
3. Salivary glands
4. Biology and anatomy of dental tissues (enamel, dentin, cementum, pulp and

periodontium

5. Oral Cavity and vestibule
6. Tongue
7. Palate
8. Mandible and maxilla

B. EMBRYOLOGY

1. Development of face, palate, mandible and maxilla
2. Development of tooth

C. HISTOLOGY

1. Study of epithelium of oral cavity
2. Bone and tooth
3. Tongue
4. Salivary glands

D. PHYSIOLOGY

1. Physiology and function of the masticatory system
2. Blood coagulation mechanisms
3. Blood groups
4. RBC and haemoglobin
5. WBC Function and classification
6. Cardiac cycle
7. Regulation of blood pressure
8. Shock, hypertension, cardiac failure
9. Composition function and regulation of saliva
10. Mastication and deglutition
11. Endocrine system
 - a) Pituitary hormone
 - b) Thyroid hormone
 - c) Parathyroid hormone
12. Gerodontology
 - A. Nutrition in geriatric patients
 - B. Consequences and management of age changes

E. BIOCHEMISTRY

1. Carbohydrates
 - a) Digestion of starch and absorption of glucose
 - b) Metabolism of glucose, specifically glycolysis, TCA
 - c) Blood sugar regulation
2. Lipids – Essential and non-essential fatty acids

3. Proteins – Essential and non-essential amino acids
4. Minerals
 - a) Calcium and Phosphorous metabolism
 - b) Iron Metabolism
 - c) Trace elements in nutrition
5. Vitamins – Vitamin A,B (All types) C,D & E

F. PATHOLOGY

1. Inflammation
 - a) Repair and regeneration, necrosis and gangrene
 - b) Roll of complement system in acute inflammation
 - c) Roll of Arachidonic acid and its metabolites in acute inflammation
 - d) Pulpitis and periodontitis
2. Shock
 - a) Pathogenesis of hemorrhagic, neurogenic, septic, cardiogenic shock
 - b) Circulatory disturbances.
 - c) Ischaemic hyperemia
 - d) Venous congestion
 - e) Edema
 - f) Infarction
3. Hypersensitivity
 - a) Anaphylaxis.
 - b) Type 2 hypersensitivity,
 - c) Type 3 hypersensitivity
 - d) Cell mediated reaction and its clinical importance.
 - e) System lupus erythematosus
 - f) Infection and infective granulomas
4. Neoplasia
 - a) Classification of tumors
 - b) Carcinogenesis and carcinogen – chemical, viral and microbial
 - c) Grading and staging of cancers, tumor, Angiogenesis, Paraneoplastic syndrome.
 - d) Spread of tumors
 - e) Characteristics of benign and malignant tumors
5. Others
 - a) AIDS
 - b) Hepatitis B
6. CYSTS- Classification, types (esp. Dental, dentigerous)
7. Pathology of oral soft and hard tissues
8. Dental plaque
9. Dental caries
10. Attrition, Abrasion and erosion of teeth
11. Oral Manifestations of systemic diseases

G. MICROBIOLOGY

1. Applied General Microbiology
 - a) Gram positive bacteria
 - b) Gram negative bacteria
 - c) Aerobes and anaerobes
 - d) Microbiology of tuberculosis
2. Oral Microbiology – normal oral flora
3. Sterilization and disinfection
4. Microbiology of pulpal and periodontal diseases

H. PHARMACOLOGY

1. General and local anesthetics, hypnotics, anti-epileptics and tranquilizers
2. Chemotherapeutics and antibiotics
3. Analgesics, antipyretics and NSAID
4. Antiseptics, sialogogues and anti sialogogues
5. Haematinics
6. Anti-diabetics
7. Vitamins A, B complex, C,D,E,K and trace elements
8. Steroids
9. Dentifrices
10. Desensitizing agents
11. Fluorides

I. Dental Material Science

1. Overview of materials for dental applications with special reference to standards for dental materials
2. Biocompatibility of Dental Materials
3. Structure of matter and principles of adhesion
4. Physical properties of Dental Materials
5. Mechanical Properties of Dental materials
6. Solidification and microstructure of Metals
7. Equilibrium phases in cast alloys
8. Dental Polymers
9. Impression Material
10. Gypsum Products
11. Dental Waxes
12. Casting Investments and procedures
13. Finishing and Polishing materials with special reference to bur design
14. Bonding for direct restorative materials
15. Restorative resins
16. Dental cements
17. Dental Casting and soldering alloys
18. Wrought alloys except orthodontic wires and brackets
19. Dental Ceramics

20. Denture base resins
21. Dental Implants
22. Materials for maxillofacial prosthetics
23. Materials for post and core

- Adaptability to new methods and techniques in Prosthodontics.
- Working always in patient's best interest.
- Due respect for Patient's rights and privileges including patient's right to seek information and second opinion.

• Communication abilities

1. Good communication skills in order to explain treatment plan to patient and relatives
2. Ability to communicate various treatment options in the language that patient understands
3. Leadership quality and ability to create cohesive working atmosphere
4. Ability to guide and counsel the patient and relatives in all stages of diagnosis, treatment and follow-up
5. Effective communication with professional colleagues on personal level as well as various communication media, eg. Internet, Email, Video-conferencing etc.

I. Theory

1. REMOVABLE PROSTHODONTICS

- (a) Complete Denture Prosthodontics
- (b) Removable Partial Denture Prosthodontics

2. FIXED PARTIAL PROSTHODONTICS

3. IMPLANT SUPPORTED PROSTHODONTICS

4. MAXILLOFACIAL PROSTHODONTICS

5. MISCELLANEOUS

- (a) Full mount rehabilitation
- (b) Over dentures
 - (i) Tooth supported over dentures
 - (ii) Implant supported over dentures
- (c) Immediate dentures
- (d) Single complete denture
- (e) Pre-prosthetic surgery

5. TEACHING LEARNING METHODS (including Clinical Study)

(a) LECTURES:

There shall be some didactic lectures in the speciality and in the allied fields. The departments shall encourage guest lectures in the required areas and integrated lectures by multi-disciplinary teams on selected topics, to strengthen the training programmes.

(b) JOURNAL REVIEW:

The journal review meetings shall be held at least once a week. All trainees, associate and staff associated with the post-graduate programme are expected to participate actively and enter relevant details in the logbook. The trainee shall make presentations from the allotted journals of selected articles.

(c) SEMINARS:

The seminars shall be held at least twice a week in each department. All trainees are expected to participate actively and enter relevant details in logbook.

(d) SYMPOSIUM:

It is recommended to hold symposium on topics covering multiple disciplines.

(e) CLINICAL POSTINGS:

Each trainee shall work in the clinics on regular basis to acquire adequate professional skills and competency in managing various cases.

(f) CLINICO-PATHOLOGICAL CONFERENCE:

The clinico pathological conference shall be held once a month involving the faculties of Oral Medicine and Radiology, Oral Pathology and allied clinical departments. The trainees shall be encouraged to present the clinical details, radiological and histo-pathological interpretations and participation in the discussions.

(g) INTER-DEPARTMENTAL MEETINGS:

To encourage integration among various specialities, there shall be inter-departmental meeting chaired by the Dean with all heads of post-graduate departments at least once a month.

(h) TEACHING SKILLS:

All the trainees shall be encouraged to take part in undergraduate teaching programmes either in the form of lectures or group discussion.

(i) DENTAL EDUCATION PROGRAMMES:

Each department shall organise dental education programmes on regular basis involving other institutions. The trainees shall also be encouraged to attend such programmes

conducted outside their university or institute.

(j) CONFERENCES/WORKSHOPS/ADVANCED COURSES:

The trainees shall be encouraged to attend conference/workshops/advanced courses and also to present at least two scientific papers and two posters at State/national level speciality and allied conferences/conventions during the training period.

(k) ROTATION AND POSTING IN OTHER DEPARTMENTS:

To bring in more integration among the specialities and allied fields, each department shall workout a programme to rotate the trainees in related disciplines.

6. STRUCTURED TRAINING PROGRAMME

Rotations and postings in other departments/institutions:

3 months Rotational posting under each Professor / Guide. To bring in more integration among the specialities and allied fields, each department shall workout a programme to rotate the trainees in related disciplines.

7. DISSERTATION- Submission of Protocol, Continuous Evaluation of

Dissertation, Submission of completed Dissertation:

Every candidate appearing for the post-graduate degree examination shall at least six months prior to the examinations, submit with his form for examination, four typewritten copies of the dissertation undertaken by the candidate, prepared under the direction and guidance of his/her guide.

It must be approved by the Institutional Review Board consisting of Principal, all the HOD's, an advocate, medical specialties and social worker within the first six months after the commencement of the course. The application for registration of dissertation topic must be sent through the Principal duly forwarded by the Professor/ HOD. The University will register such dissertation topic. In case, the students want to change the topic of dissertation, they can do it within the next three months. No change in the Guide/dissertation topic shall be made without prior approval of the University.

The aim of dissertation is to train a postgraduate student in research methodology. It includes identification of a problem with recent advances, designing of research study on collection of data, practical analysis and comparison of results and drawing conclusions.

The dissertation should be written under the following headings.

Introduction / Aims and objective/ Review and literature/ Materials & Methods/ Results/ Discussion

Conclusion/Summary

The written text of dissertation shall not be less than 100pages. It should be neatly typed

Describe etiology, pathogenesis, diagnosis and management of common periodontal diseases with emphasis on Indian population. Familiarize with the biochemical, microbiologic and immunologic genetic aspects of periodontal pathology. Describe various preventive periodontal measures. Describe various treatment modalities of periodontal disease from historical aspect to currently available ones. Describe interrelationship between periodontal disease and various systemic conditions. Describe periodontal hazards due to estrogenic causes and deleterious habits and prevention of it. Update him by attending course, conferences and seminars relevant to periodontics or by self-learning process.

Practical and clinical skills-

Identify rarities in periodontal disease and environmental/ Emotional determinates in a given case. Recognize conditions that may be outside the area of his Speciality/competence and refer them to an appropriate Specialist.

Decide regarding non-surgical or surgical management of the case Reach to the public to motivate and educate regarding periodontal disease, its prevention and consequences if not treated Plan out epidemiological survey to assess prevalence and incidence of early onset periodontitis and adult periodontitis in Indian population. Shall develop knowledge, teaching skill in the field of Periodontology and Oral Implantology

Writing thesis / research papers:-

The dissertation is aimed to train a postgraduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, comparison of results and drawing conclusions.

Plan out/ carry out research activity both basic and clinical aspects with the aim of publishing his work in scientific journals. Every candidate pursuing MDS degree course is required to carry out work on a selected research project under the guidance of a recognized post graduate teacher. The results of such a work shall be submitted in the form of a dissertation.

Attitudes including Communication skill-

Develop communication skills, in particular, to explain treatment option available in management. Provide leadership and get the best out of his group in a congenial working atmosphere. Should be able to communicate in simple understandable language with the patient and explain the principles of periodontics to the patient. He should be able to guide and counsel the patient with regard to various treatment modalities available

Develop the ability to communicate with professional colleagues through various media like Internet, e-mail, videoconference, and etc. to render the best possible treatment.

Training in research methodology, Biostatistics, Ethics / Bio-ethics in dentistry, Jurisprudence and Audits-

Adopt ethical principles in all periodontic practice. Professional honesty and integrity are to

be fostered. Treatment to be delivered irrespective of social status, caste, creed or religion of patient. Respect patient's rights and privileges including patients right to information and right to seek second opinion. Understanding, Observation, Correlation, Experimentation and evaluating dental research, scientific method, hypothesis and Research Strategies.

Scope and need for statistical application to biological data. Definition of selected terms - scale of measurements related to statistics, Methods of collecting data, presentation of the statistical diagrams and graphs.

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Health informatics-

Skilled in usage of information technology in their curriculum.

4. THEORY SYLLABUS

Applied Anatomy:

1. Development of the Periodontium
2. Micro and Macro structural anatomy and biology of the periodontal tissues
3. Age changes in the periodontal tissues
4. Anatomy of the Periodontium
5. Temporomandibular joint, Maxillae and Mandible
6. Cranial nerves (5,7,9,11,12)
7. Tongue, oropharynx
8. Muscles of mastication

Physiology

1. Blood
2. Respiratory system - Acknowledge of the respiratory diseases which are a cause of periodontal diseases (periodontal Medicine)
3. Cardiovascular system
4. Endocrinology - hormonal influences on Periodontium
5. Gastrointestinal system
 - a. Salivary secretion - composition, function & regulation
 - b. Reproductive physiology
6. Nervous system
 - a. Pain pathways
 - b. Taste - Taste buds, primary taste sensation & pathways for sensation

Biochemistry

1. Basics of carbohydrates, lipids, proteins, vitamins, proteins, enzymes and minen
2. Diet and nutrition and periodontium
3. Biochemical tests and their significance
4. Calcium and phosphorus

Pathology

1. Cell structure and metabolism
2. Inflammation and repair, necrosis and degeneration
3. Immunity and hypersensitivity
4. Circulatory disturbances - edema, hemorrhage, shock, thrombosis, embolism, infarction and hyper tension
5. Disturbances of nutrition
6. Diabetes mellitus
7. Cellular growth and differentiation, regulation
8. Lab investigations
9. Blood

Microbiology:

1. General bacteriology
 - a. Identification of bacteria
 - b. Culture media and methods
 - c. Sterilization and disinfection
2. Immunology and Infection
3. Systemic bacteriology with special emphasis on oral microbiology - staphylococci, genus actinomyces and other filamentous bacteria and action bacillus actinomyces tumcomitans
4. Virology
 - a. General properties of viruses
 - b. Candidiasis
5. Applied microbiology
6. Diagnostic microbiology and immunology, hospital infections and management

Pharmacology:

1. General pharmacology
 - a. Definitions - Pharmacokinetics with clinical applications, routes of administration including local drug delivery in Periodontics
 - b. Adverse drug reactions and drug interactions
2. Detailed pharmacology of
 - a. Analgesics - opioid and nonopoid
 - b. Local anaesthetics
 - c. Haematinics and coagulants, Anticoagulants
 - d. Vit D and Calcium preparations
 - e. Antidiabetics drugs
 - f. Steroids
 - g. Antibiotics
 - h. Antihypertensive
 - i. Immunosuppressive drugs and their effects on oral tissues
 - j. Antiepileptic drugs
3. Brief pharmacology, dental use and adverse effects of
 - a. General anaesthetics
 - b. Antipsychotics
 - c. Antidepressants
 - d. Anxiolytic drugs
 - e. Sedatives
 - f. Antiepileptics

- g. Antihypertensives
- h. Antianginal drugs
- i. Diuretics
- j. Hormones
- k. Pre-anaesthetic medications
- 4. Drugs used in Bronchial asthma cough
- 5. Drug therapy of
 - a. Emergencies
 - b. Seizures
 - c. Anaphylaxis
 - d. Bleeding
 - e. Shock
 - f. Diabetic ketoacidosis
- 6. Dental Pharmacology
 - a. Antiseptics
 - b. Astringents
 - c. Sialogogues
 - d. Disclosing agents
 - e. Antiplaque agents
- 7. Fluoride pharmacology

Biostatistics:

Introduction, definition and branches of biostatistics
 Collection of data, sampling, types, bias and errors
 Compiling data-graphs and charts
 Measures of central tendency (mean, median and mode), standard deviation variability
 Tests of significance (chi square test, t-test and Z-test)
 Null hypothesis

Etiopathogenesis

1. Classification of periodontal diseases and conditions
2. Epidemiology of gingival and periodontal diseases
3. Defense mechanisms of gingiva
4. Periodontal microbiology
5. Basic concepts of inflammation and immunity
6. Microbial interactions with the host in periodontal diseases
7. Pathogenesis of plaque associated periodontal diseases
8. Dental calculus
9. Role of iatrogenic and other local factors
10. Genetic factors associated with periodontal diseases
11. Influence of systemic diseases and disorders of the periodontium
12. Role of environmental factors in the etiology of periodontal disease
13. Stress and periodontal diseases
14. Occlusion and periodontal diseases
15. Smoking and tobacco in the etiology of periodontal diseases
16. AIDS and periodontium
17. Periodontal medicine
18. Dentinal hypersensitivity

Clinical and Therapeutic Periodontology and Oral Implantology

Clinical periodontology includes gingival diseases, periodontal diseases, periodontal instrumentation, diagnosis, prognosis and treatment of periodontal diseases.

I. GINGIVAL DISEASES

1. Gingival inflammation
2. Clinical features of gingivitis
3. Gingival enlargement
4. Acute gingival infections
5. Desquamative gingivitis and oral mucous membrane diseases
6. Gingival diseases in the childhood

II. PERIODONTAL DISEASES

1. Periodontal pocket
2. Bone loss and patterns of bone destruction
3. Periodontal response to external forces
4. Masticatory system disorders
5. Chronic periodontitis
6. Aggressive periodontitis
7. Necrotising ulcerative periodontitis
8. Interdisciplinary approaches
 - Orthodontic
 - Endodontic
 - Prosthodontic considerations

III. TREATMENT OF PERIODONTAL DISEASES

A. History, examination, diagnosis, prognosis and treatment planning

1. Clinical diagnosis
2. Radiographic and other aids in the diagnosis of periodontal diseases
3. Advanced diagnostic techniques
4. Risk assessment
5. Determination of prognosis
6. Treatment plan
7. Rationale for periodontal treatment
8. General principles of anti-infective therapy with special emphasis on infection control in periodontal practice
9. Halitosis and its treatment
10. Bruxism and its treatment

B. Periodontal instrumentation

1. Instrumentation
2. Principles of periodontal instrumentation
3. Instruments used in different parts of the mouth

C. Periodontal therapy

1. Preparation of tooth surface
2. Plaque control
3. Anti microbial and other drugs used in periodontal therapy and wasting diseases of teeth
4. Periodontal management of HIV infected patients

5. Occlusal evaluation and therapy in the management of periodontal diseases
6. Role of orthodontics as an adjunct to periodontal therapy
7. Special emphasis on precautions and treatment for medically compromised patients
8. Periodontal splints
9. Management of dentinal hypersensitivity

D. Periodontal surgical phase - special emphasis on drug prescription

1. General principles of periodontal surgery
2. Surgical anatomy of periodontium and related structures
3. Gingival curettage
4. Gingivectomy technique
5. Treatment of gingival enlargements
6. Periodontal flap
7. Osseous surgery (resective and regenerative)
8. Furcation; Problem and its management
9. The periodontic - endodontic continuum
10. Periodontic plastic and aesthetic surgery
11. Recent advances in surgical techniques

E. Future directions and controversial questions in periodontal therapy

1. Future directions for infection control
2. Research directions in regenerative therapy
3. Future directions in anti-inflammatory therapy
4. Future directions in measurement of periodontal diseases

F. Periodontal maintenance phase

1. Supportive periodontal treatment
2. Results of periodontal treatment

IV. ORAL IMPLANTOLOGY

1. Introduction and historical review
2. Biological, clinical and surgical aspects of dental implants
3. Diagnosis and treatment planning
4. Implant surgery
5. Prosthetic aspects of dental implants
6. Diagnosis and treatment of Peri implant complications
7. Special emphasis on plaque control measures implant patients
8. Maintenance phase

5. TEACHING LEARNING METHODS (including Clinical Study)

(a) LECTURES:

There shall be some didactic lectures in the speciality and in the allied fields. The departments shall encourage guest lectures in the required areas and integrated lectures by multi-disciplinary teams on selected topics, to strengthen the training programmes.

(b) JOURNAL REVIEW:

The journal review meetings shall be held at least once a week. All trainees, associate and staff associated with the post-graduate programme are expected to participate actively

3. Dental caries – epidemiology, recent concept of etiological factors, pathophysiology, Histopathology, diagnosis, caries activity tests, prevention of dental caries and management – recent methods.
4. Hand and rotary cutting instruments, development of rotary equipment, speed ranges, hazards.
5. Dental burs and other modalities of tooth preparation – recent developments (air abrasions, lasers etc)
6. Infection control procedures in conservative dentistry, isolation equipments etc.
7. Direct concepts in tooth preparation for amalgam, composite, GIC and restorative techniques, failures and management.
8. Direct and indirect composite restorations.
9. Indirect tooth colored restorations – ceramic, inlays and onlays, veneers, crowns, recent advances in fabrication and materials.
 - a. Tissue management.
10. Impression procedures used for indirect restorations.
11. Cast metal restorations, indications, contraindications, tooth preparation for class 2 inlay, Onlay full crown restorations.

Restorative techniques, direct and indirect methods of fabrication including materials used for fabrication like inlay wax, investment materials and
12. Direct gold restorations.
13. Recent advances in restorative materials and procedures.
14. Management of non-carious lesion.
15. Advance knowledge of minimal intervention dentistry.
16. Recent advances in restoration of endodontically treated teeth and grossly mutilated teeth.
17. Hypersensitivity, theories, causes and management.
18. Lasers in conservative Dentistry.
19. CAD-CAM & CAD-CIM in restorative dentistry.
20. Dental imaging and its applications in restorative dentistry (clinical photography)
21. Principles of esthetics.
 - Color
 - Facial analysis
 - Smile design

PHARMACOLOGY:

- Dosage and route of administration of drugs, actions and fate of drug in body, drug addiction, tolerance of hypersensitivity reactions.
- Local anaesthesia – agents and chemistry, pharmacological actions, fate and metabolism of anaesthetic, ideal properties, techniques and complications.
- General anaesthesia – pre medications, neuro muscular blocking agents, induction agents, inhalation anaesthesia, and agents uses, assessment of anaesthetic problems in medically compromised patients.
- Anaesthetic emergencies.
- Antihistamines, corticosteroids, chemotherapeutic and antibiotics, drug resistance, haemostasis, and haemostatic agents, anticoagulants, sympathomimetic drugs, vitamins and minerals (A, B, C, D, E, K IRON), anti-sialogogue, immunosuppressants, drug interactions, antiseptics, disinfectant agents, drugs acting on CNS.

BIOSTATISTICS:

- Introduction, Basic concepts, Sampling, Health information systems – collection, compilation, presentation of data. Elementary statistical methods – presentation of statistical data, Statistical averages – measures of central tendency, measures of dispersion, Normal distribution. Tests of significance – parametric and non – parametric tests (Fisher exact test, Sign test, Median test, Mann Whitney test, Kruskal Wallis one way analysis, Friedman two way analysis, Regression analysis), Correlation and regression, Use of computers

RESEARCH METHODOLOGY:

- Essential features of a protocol for research in humans.
- Experimental and non-experimental study designs.
- Ethical considerations of research.

APPLIED DENTAL MATERIALS:

- Physical and mechanical properties of dental materials, biocompatibility.
- Impression materials, detailed study of various restorative materials, restorative resin and recent advances in composite resins, bonding – recent developments – tarnish and corrosion, dental amalgam, direct filling gold, casting alloys, inlay wax, die materials, investments, casting procedures, defects, dental cements for restoration and pulp protection (luting, liners, bases) cavity varnishes.

Part – II PAPER – I: CONSERVATIVE DENTISTRY

1. Examination, diagnosis and treatment plan.
2. Occlusion as related to conservative dentistry, contact, contour, its significance. Separation of teeth, matrices, used in conservative dentistry.

principles of endocrine activity and disorders relating to pituitary, thyroid, parathyroid, adrenals including pregnancy and lactation.

- Physiology of saliva – composition, function, clinical significance.
- Clinical significance of vitamins, diet and nutrition – balanced diet.
- Physiology of pain, sympathetic and Para sympathetic nervous system, pain pathways, physiology of pulpal pain, Odontogenic and non Odontogenic pain, pain disorders – typical and atypical, biochemistry such as osmotic pressure, electrolytic dissociation, oxidation, reduction etc. Carbohydrates, proteins, lipids and their metabolism, nucleoproteins, nucleic acid and their metabolism. Enzymes, vitamins and minerals, metabolism of inorganic elements, detoxification in the body, anti metabolites, chemistry of blood lymph and urine.

PATHOLOGY:

- Inflammation, repair, degeneration, necrosis and gangrene.
- Circulatory disturbances – ischemia, hyperemia, edema, thrombosis, embolism, infarction, allergy and hypersensitivity reaction.
- Infections of oral and Para oral regions (bacterial, viral and fungal infection)
- Neoplasms – classifications of tumors, characteristics of benign and malignant tumors spread tumors.
- Blood dyscrasis.
- Developmental disturbances of oral and Para oral structures, dental caries, regressive changes of teeth, pulp, periapical pathology, pulp reaction to dental caries and dental procedures.
- Bacterial, viral, mycotic infections of the oral cavity.

MICROBIOLOGY:

- Pathways of pulpal infection, oral flora and micro organisms associated with endodontic diseases, pathogenesis, host defense, bacterial virulence factors, healing, theory of focal infections, microbes or relevance to dentistry – Streptococci, Staphylococci, Lactobacilli, Corynebacterium, Actinomycetes, Clostridium, Neisseria, Vibrio, Bacteriodes, Fusobacteria, Spirochetes, Mycobacterium, Virus and Fungi.
- Cross infection, infection control, infection control procedure, sterilization and disinfection.
- Immunology – antigen antibody reaction, allergy, hypersensitivity and anaphylaxis, auto immunity, grafts, viral hepatitis, HIV infections and aids. Identification and isolation of microorganisms from infected root canals. Culture medium and culturing technique (Aerobic and anaerobic interpretation and antibiotic sensitivity test).

- Treat the sick and injured with competence and compassion
- Protect the privacy and confidentiality of those whom we care.
- Work freely with colleagues
- Educate the public
- Teach and mentor those who follow us

All MDS candidates shall compulsorily attend the Research Methodology Workshop conducted by the University within 6 months from the date of joining the course. In this regard, the candidates will be issued a completion Certificate by the University.

Health Informatics usage of Information technology (Computer):

Should always update themselves about the most prevalent disease in their community and work towards its management.

4. THEORY SYLLABUS

PART I : PAPER – I: APPLIED ANATOMY OF HEAD & NECK

- Enamel – development and composition, physical characteristics, chemical properties, structure.
- Age changes – clinical structure.
- Dentin – development, physical and chemical properties, structure type of dentin, innervations, age and functional changes.
- Pulp – development, histological structures, innervations, functions, regressive changes, clinical considerations.
- Cementum – composition, cementogenesis, structure, function, clinical consideration.
- Periodontal ligament – development, structure, function and clinical consideration.
- Salivary glands – structure, function, clinical considerations.
- Eruption of teeth.

APPLIED PHYSIOLOGY:

- Mastication, deglutition, and digestion and assimilation, fluid and electrolyte balance.
- Blood composition, volume, function, blood groups, haemostasis, coagulation, blood transfusion, circulation, heart, pulse, blood pressure, shock, respiration, control, anoxia, hypoxia, asphyxia, artificial respiration, and endocrinology – general

and enter relevant details in the logbook. The trainee shall make presentations from the allotted journals of selected articles.

(c) SEMINARS:

The seminars shall be held at least twice a week in each department. All trainees are expected to participate actively and enter relevant details in logbook.

(d) SYMPOSIUM:

It is recommended to hold symposium on topics covering multiple disciplines.

(e) CLINICAL POSTINGS:

Each trainee shall work in the clinics on regular basis to acquire adequate professional skills and competency in managing various cases.

(f) CLINICO-PATHOLOGICAL CONFERENCE:

The clinico pathological conference shall be held once a month involving the faculties of Oral Medicine and Radiology, Oral Pathology and allied clinical departments. The trainees shall be encouraged to present the clinical details, radiological and histo-pathological interpretations and participation in the discussions.

(g) INTER-DEPARTMENTAL MEETINGS:

To encourage integration among various specialities, there shall be inter-departmental meeting chaired by the Dean with all heads of post-graduate departments at least once a month.

(h) TEACHING SKILLS:

All the trainees shall be encouraged to take part in undergraduate teaching programmes either in the form of lectures or group discussion.

(i) DENTAL EDUCATION PROGRAMMES:

Each department shall organise dental education programmes on regular basis involving other institutions. The trainees shall also be encouraged to attend such programmes conducted outside their university or institute.

(j) CONFERENCES/WORKSHOPS/ADVANCED COURSES:

The trainees shall be encouraged to attend conference/workshops/advanced courses and also to present at least two scientific papers and two posters at State/national level speciality and allied conferences/conventions during the training period.

(k) ROTATION AND POSTING IN OTHER DEPARTMENTS:

To bring in more integration among the specialities and allied fields, each department shall workout a programme to rotate the trainees in related disciplines.

First year-

Pre - Clinical work-

1. Practice of incisions and suturing techniques on the typhodont models
2. Fabrication of bite guards and splints
3. Occlusal adjustments on the casts mounted on the articulator
4. X- Ray techniques and interpretation
5. Local anaesthetic techniques

I Year

Submission of synopsis for Dissertation - within 6 months from the start of the Course
Library Assignment I - to be submitted at the end of the I year

II Year

Library Assignment II - to be submitted at the end of the II year Scientific Paper presentation at the conferences II Year

III Year

Scientific Paper / Poster presentation at conferences

Submission of Dissertation – one dissertation within eighteen months from the date of commencement of the course.

6. STRUCTURED TRAINING PROGRAMME

Clinical postings for the students must be done among the professors and periodic rotation to be carried out from the first year onwards.

To bring in more integration between the speciality and allied fields each post graduate department shall workout a programme to rotate the trainees for 15 days in related disciplines like endodontics, prosthodontics and orthodontics in the first year of the course.

7. DISSERTATION

Every candidate appearing for the post-graduate degree examination shall at least six months prior to the examinations, submit with his form for examination, four typewritten copies of the dissertation undertaken by the candidate, prepared under the direction and guidance of his/her guide.

It must be approved by the Institutional Review Board consisting of Principal, all the HOD's, an advocate, medical specialties and social worker within the first six months after the commencement of the course. The application for registration of dissertation topic must be sent through the Principal duly forwarded by the Professor/ HOD. The University will register such dissertation topic. In case the students want to change the topic of dissertation, they can do it within the next three months. No change in the Guide/dissertation topic shall be made without prior approval of the University.

The aim of dissertation is to train a postgraduate student in research methodology. It

includes identification of a problem with recent advances, designing of research study on collection of data, practical analysis and comparison of results and drawing conclusions.

The dissertation should be written under the following headings.

Introduction / Aims and objective / Review and literature / Materials & Methods /Results / Discussion

Conclusion / Summary

The written text of dissertation shall not be less than 100pages. It should be neatly typed in double line spacing on one side (A4 size, 8. 27"x 11.69") and bounded properly. Photos, charts, tables, tables and graphs can be attached where ever necessary. Spiral binding should not be used. The dissertation shall be certified by the Guide and Head of the department and forwarded by the Principal to the University.

The dissertation so submitted shall be referred to the examiners for their examination and acceptance of it shall be a condition precedent to allow the candidate to appear for the written part of the examination.

Provided that a candidate whose dissertation has been accepted by the examiner, but declared failed at the examination, shall be permitted to re-appear at the subsequent examination without a new dissertation.

Provided further that if the dissertation is rejected by the examiner, the examiner shall assign reasons thereof with suggestions for its improvement to the candidate and such candidate shall re-submit his/ her dissertation to the examiner who shall accept it before appearing in the examination.

8. THEORY EXAMINATION

Theory: Part-I: Paper – I : Applied Basic Sciences

Part-II: Paper-I, Paper-II & Paper-III

Written examination shall consist of Basic Sciences (Part-I) of three hours duration and shall be conducted at the end of First year of MDS course. Part II Examination shall be conducted at the end of Third year of MDS course. Part II Examination shall consist of Paper I, Paper II, & Paper III, each of three hours duration. Total marks for each paper will be 100. Paper I & Paper II consists of 2 essays carrying 25 marks and 5 short essays with 10 marks each. Paper III will be on 3 Essays, three essays will be given and students has to answer any two questions, each carrying 50 marks each. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows.

Part-I – Theory: 100 Marks

Paper I: Applied Basic Sciences: Applied Anatomy, Physiology, & Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics.

Part -II - Theory: 300 Marks

Paper I: Normal Periodontal structure, Etiology & Pathogenesis of Periodontal diseases, epidemiology as related to Periodontics

Paper II: Periodontal diagnosis, therapy & Oral implantology

Paper III: Descriptive and analysing type question

9. PRACTICAL / CLINICAL EXAMINATION

Clinical / Practical examination is designed to test the clinical skill, performance and competence of the candidate.

The clinical examination shall be conducted for 6 candidates in two days and may be extended for one day, if it is not completed in two days.

1st day

Case discussion

- Long case- One
- Short case - Two

Periodontal surgery - Periodontal flap surgery on a previously prepared case in one quadrant of the mouth after getting approval from the examiners

2nd day

Post-surgical review and discussion of the case treated on the 1st day Presentation of dissertation & discussion .

Distribution of Marks for Clinical examination (recommended)

a) Long Case discussion	50
b) 2 short cases	50
c) Periodontal surgery	75
d) Post — operative review	25
Total	200

CRITERIA FOR PASS CERTIFICATE:

To pass the University examination, a candidate shall secure in both theory examination and in practical/clinical including viva voce independently with an aggregate of 50% of total marks allotted (50 out of 100 marks in Part I examination and 150 marks out of 300 in Part II examination in theory and 150 out of 300, clinical plus viva voce together). A candidate

conducted by the University within 6 months from the date of joining the course. In this regard, the candidates will be issued a completion Certificate by the University.

Introduction to Ethics

What is ethics? What are values and norms? How to form a value system in one's personal and professional life? Hippocratic oath, Declaration of Helsinki, WHO declaration of Geneva, International code of ethics, D.C.I. Code of ethics.

Ethics of the Individual

The patient as a person, right to be respected, Truth and confidentiality, Autonomy of decision, Doctor Patient relationship.

Professional Ethics

Code of conduct, Contract and confidentiality, charging of fees, fee splitting, Prescription of drugs, Over-investigating the patient, Malpractice and negligence

Research Ethics

Animal and experimental research/humanness, Human experimentation, Human volunteer research, informed consent, Drug trials, Ethical workshop of cases, gathering all scientific factors, gathering all value factors, identifying areas of value-conflict, setting of priorities, Working out criteria towards decisions

Basic principles of law

Contract laws- dentist - patient relationships & Legal forms of practice, Dental malpractice , Person identification through dentistry , Legal protection for practicing dentist. , Consumer protection act

Health Informatics usage of Information technology (Computer):

Students should utilize a combination of traditional classroom courses, and online courses. The following validation is required and must be completed during the first year of study.

- Technological Requirements for all Graduate Students
- A laptop or desktop computer that supports the following requirements
 1. Operating system requirements
 2. Internet browser requirements
 3. Reliable and consistent access to the internet
 4. Virus software which is current and consistently updated
 5. Microsoft Office
 6. Adobe Reader (or equivalent to view PDF files)

4. THEORY SYLLABUS

The topics are considered as under: -

Applied Basic sciences
Oral and Maxillofacial surgery
Allied specialities

APPLIED BASIC SCIENCES

A thorough knowledge both on theory and principles in general and in particular the basic medical subjects as relevant to the practice of maxillofacial surgery. It is desirable to have adequate knowledge in bio-statistics, Epidemiology, research methodology, nutrition and computers.

Anatomy

Development of face, paranasal sinuses and associated structures and their anomalies; surgical anatomy of scalp temple and face, anatomy and its applied aspects of triangles of neck, deep structures of neck, cranial facial bones and its surrounding soft tissues, cranial nerves, tongue, temporal and infratemporal region, orbits and its contents, muscles of face and neck, paranasal sinuses, eyelids and nasal septum teeth gums and palate, salivary glands, pharynx, thyroid and parathyroid glands, larynx, trachea and esophagus, congenital abnormality of orofacial regions.

Physiology

Nervous system-physiology of nerve conduction, pain pathway, sympathetic and parasympathetic nervous system, hypothalamus and mechanism of controlling body temperature; Blood-its composition hemostasis, blood dyscrasias and its management, hemorrhage and its control, blood grouping, cross matching, blood component therapy, complications of blood transfusion, blood substitutes, auto transfusion, cell savers; digestive system composition and functions of saliva mastication deglutition, digestion, assimilation, urine formation, normal and abnormal constituents; Respiration control of ventilation anoxia, asphyxia, artificial respiration, hypoxia - types and management; CVS - cardiac cycle, shock, heart sounds, blood pressure, hypertension; Endocrinology-metabolism of calcium; endocrinal activity and disorder relating to thyroid gland, parathyroid gland, adrenal gland, pituitary gland, pancreas and gonads; Nutrition-general principles balanced diet. Effect of dietary deficiency, protein energy malnutrition, Kwashiorkor, Marasmus, Nutritional assessment, metabolic responses to stress, need for nutritional support, enterals nutrition, routes of access to GI tract, Parenteral nutrition, Access to central veins, Nutritional support; Fluid and Electrolytic balance/Acid Base metabolism- the body fluid compartment, metabolism of water and electrolytes, factors maintaining hemostasis, causes for treatment of acidosis and alkalosis.

Biochemistry

General principles governing the various biological principles of the body, such as osmotic pressure, electrolytes, dissociation, oxidation, reduction etc.; general composition of body, intermediary metabolism, carbohydrate, proteins, lipids, enzymes, vitamins, minerals and antimetabolites.

General Pathology

Inflammation - Acute and chronic inflammation, repair and regeneration, necrosis and gangrene, role of component system in acute inflammation, role of arachidonic acid and its metabolites in acute inflammation, growth factors in acute inflammation role of NSAIDS in

inflammation, cellular changes in radiation injury and its manifestation; wound management - Wound healing factors influencing healing; properties of suture materials, appropriate uses of sutures; hemostasis - role of endothelium in thrombogenesis; arterial and venous thrombi, disseminated intravascular coagulation; Hypersensitivity; Shock and pulmonary failure: types of shock, diagnosis, resuscitation, pharmacological support, ARDS and its causes and prevention, ventilation and support, Tumors, Carcinogens and Carcinogenesis, grading and staging of tumors, various laboratory investigation.

General microbiology

Immunity, Hepatitis B and its prophylaxis, Knowledge of organisms, commonly associated with diseases of oral cavity, culture and sensitivity tests, various staining techniques- Smears and cultures, urine analysis and culture.

Oral pathology and microbiology

Developmental disturbances of oral and para oral structures, regressive changes of teeth, bacterial, viral, mycotic infection of oral cavity, dental caries, diseases of pulp and Periapical tissues, physical and chemical injuries of oral cavity, wide range of pathological lesions of hard and soft tissues of the orofacial regions like the cysts odontogenic infection, benign, malignant neoplasms, salivary gland diseases, maxillary sinus diseases, mucosal diseases, oral aspects of various systemic diseases, role of laboratory investigation in oral surgery.

Pharmacology and therapeutics:

Definition of terminology used, pharmacokinetics and pharma dynamic dosage and mode of administration of drugs, action and fate in the body, drug addiction, tolerance and hypersensitive reactions, drugs acting on CNS, general and local anaesthetics, antibiotics and analgesics, antiseptics, antitubercular, sialagogues, hematinics, anti-diabetic, Vitamins A, B-complex, C.D.E.K.

Computer Science

Use of computers in surgery, components of computer and its use in practice-principles of word processing, spreadsheet function database and presentations; the internet and its use. The value of computer based systems in biomedical equipment.

ORAL AND MAXILLOFACIAL SURGERY

Evolution of Maxillofacial surgery. Diagnosis, history taking, clinical examination, investigations. Informed consent/medico-legal issues.

Concept of essential drugs and rational use of drugs.

Communication skills with patients - understanding clarity in communication, compassionate explanations and giving emotional support at the time of suffering and bereavement.

Principles of surgical audit - understanding the audit of process and outcome. Methods

adopted for the same Basic statistics.

Principles of evidence based surgery - understanding journal based literature study; the value of textbook, reference book articles, value of review articles; original articles and their critical assessment, understanding the value of retrospective, prospective, randomized control and blinded studies, understanding the principles and the meaning of various Bio-statistical tests applied in these studies.

Principles of surgery - developing a surgical diagnosis, basic necessities for surgery, aseptic techniques, incisions, flap designs, tissue handling, homeostasis, dead space management, decontamination and debridement, suturing, edema control, patient general health and nutrition.

Medical emergencies - Prevention and management of altered consciousness, sensitivity reaction, chest discomfort, respiratory difficulty.

Pre-operative workup - Concept of fitness for surgery; basic medical work up; work up in special situation like diabetes renal failure, cardiac and respiratory illness; risk stratification

Surgical sutures, drains

Post-operative care - concept of recovery room care, Airway management, Assessment of Wakefulness, management of cardio vascular instability in this period, Criteria for shifting to the ward, pain management

Wound management - Wound healing, factors influencing healing, basic surgical techniques, Properties of suture materials, appropriate use of sutures.

Surgical Infections - Asepsis and antisepsis, Microbiological principles, Rational use of antibiotics, special infections like Synergistic Gangrene and Diabetic foot infection, Hepatitis and HIV infection and cross infection.

Airway obstruction/management - Anatomy of the airway, principles of keeping the airway patent, mouth to mouth resuscitation, Oropharyngeal airway, endotracheal intubation, Cricothyroidectomy, Tracheostomy.

Anaesthesia - stages of Anaesthesia, pharmacology of inhalation, intravenous and regional anaesthetics, muscle relaxants.

Facial pain; Facial palsy and nerve injuries.

Pain control - acute and chronic pain, cancer and non-cancer pain, patient controlled analgesia

General patient management - competence in physical assessment of patients of surgery, competence in evaluation of patients presenting with acute injury, particularly to maxillofacial region. Competence in the evaluation of management of patients for anaesthesia

Clinical oral surgery - all aspects of dentoalveolar surgery

Pre-prosthetic surgery - A wide range of surgical reconstructive procedures in their hard and soft tissues of the edentulous jaws.

Temporomandibular joint disorders - TMJ disorders and their sequelae needs evaluation, assessment and management. It is preferable to be familiar with diagram and therapeutic arthroscopic surgery procedures.

Tissue grafting - Understanding of the biological mechanisms involved in auto and heterogeneous tissue grafting.

Reconstructive oral and maxillofacial surgery - hard tissue and soft reconstruction.

Anaesthesia - Stages of anaesthesia, pharmacology of inhalation, intravenous and regional anaesthesia, muscle relaxants.

Cyst and tumors of head and neck region and their management - including principles of tumor surgery, giant cell lesion of jaw bones, fibro osseous lesion of jaw lesions. Neurological disorders of maxillofacial region-diagnosis and management of Trigeminal Neuralgia, MPDS, Bell's palsy, Frey's Syndrome, Nerve injuries

Maxillofacial trauma - basic principles of treatment, primary care, diagnosis and management of hard and soft tissue injuries, Comprehensive, management including poly trauma patients

Assessment of trauma-multiple injuries patients/closed abdominal and chest injuries/penetrating injuries, pelvic fractures, urological injuries, vascular injuries.

Orthognathic surgery - The trainee must be familiar with the assessment and correcting of jaw deformities

Laser surgery - The application of laser technology in the surgical treatment of lesions amenable to such therapy

Distraction osteogenesis in maxillofacial region.

Cryosurgeries - Principles, the application of cryosurgery in the surgical management of lesions amenable to such surgeries.

Cleft lip and palate surgery - detailed knowledge of the development of the face, head and neck, diagnosis and treatment planning, Current concepts in the management of cleft lip and palate deformity, knowledge of nasal endoscopy and other diagnostic techniques in the evaluation of speech and hearing, concept of multi-disciplinary team management.

Aesthetic facial surgery - detailed knowledge of structures of facial neck including skin and underlying soft tissues, diagnosis and treatment planning of deformities and conditions affecting facial kin, underlying facial muscles, bone, eyelids, external ear etc. surgical management of post acne scarring, face lift, blepharoplasty, otoplasty, facial bone recontouring etc.

Craniofacial surgery - basic knowledge of developmental anomalies of face, head and neck, basics concept in the diagnosis and planning of various head and neck anomalies including facial cleft, craniosynostosis, syndromes, etc., Current concepts in the management of craniofacial anomalies

Head and neck oncology - understanding of the principles of management of head and neck oncology including various pre-cancerous lesions, Experience in the surgical techniques of reconstruction following ablative surgery.

Micro vascular surgery.

Implantology - principles, surgical procedures for insertion of various types of implants.

Maxillofacial radiology/radio diagnosis

Other diagnostic methods and imaging techniques

ALLIED SPECIALITIES

General medicine: General assessment of the patient including children with special emphasis on cardiovascular diseases endocrinal and metabolic respiratory and renal eases, Blood dyscrasias

General surgery: Principles of general surgery, exposure to common general surgical procedures.

Neuro - surgery: Evaluation of a patient with head injury, examination of various Neuro-surgical procedures

ENT/Ophthalmology: Examination of ear, nose throat, exposure to ENT surgical procedures, ophthalmic examination and evaluation, exposure to ophthalmic surgical procedures.

Orthopedic: basic principles of orthopedic surgery, bone diseases and trauma as relevant to Maxillofacial surgery, interpretation of radiographs, CT, MRI and ultrasound

Anaesthesia: Evaluation of patients for GA techniques and management of emergencies, various IV sedation techniques.

5. TEACHING LEARNING METHODS (including Clinical Study)

(a) LECTURES:

There shall be some didactic lectures in the speciality and in the allied fields. The departments shall encourage guest lectures in the required areas and integrated lectures by multi-disciplinary teams on selected topics, to strengthen the training programmes.

(b) JOURNAL REVIEW:

The journal review meetings shall be held at least once a week. All trainees, associate and staff associated with the post-graduate programme are expected to participate actively and enter relevant details in the logbook. The trainee shall make presentations from the allotted journals of selected articles.

(c) SEMINARS:

The seminars shall be held at least twice a week in each department. All trainees are

expected to participate actively and enter relevant details in logbook.

(d) SYMPOSIUM:

It is recommended to hold symposium on topics covering multiple disciplines.

(e) CLINICAL POSTINGS:

Each trainee shall work in the clinics on regular basis to acquire adequate professional skills and competency in managing various cases.

(f) CLINICO-PATHOLOGICAL CONFERENCE:

The clinico pathological conference shall be held once a month involving the faculties of Oral Medicine and Radiology, Oral Pathology and allied clinical departments. The trainees shall be encouraged to present the clinical details, radiological and histo-pathological interpretations and participation in the discussions.

(g) INTER-DEPARTMENTAL MEETINGS:

To encourage integration among various specialities, there shall be inter-departmental meeting chaired by the Dean with all heads of post-graduate departments at least once a month.

(h) TEACHING SKILLS:

All the trainees shall be encouraged to take part in undergraduate teaching programmes either in the form of lectures or group discussion.

(i) DENTAL EDUCATION PROGRAMMES:

Each department shall organise dental education programmes on regular basis involving other institutions. The trainees shall also be encouraged to attend such programmes conducted outside their university or institute.

(j) CONFERENCES/WORKSHOPS/ADVANCED COURSES:

The trainees shall be encouraged to attend conference/workshops/advanced courses and also to present at least two scientific papers and two posters at State/national level speciality and allied conferences/conventions during the training period.

(k) ROTATION AND POSTING IN OTHER DEPARTMENTS:

To bring in more integration among the specialities and allied fields, each department shall workout a programme to rotate the trainees in related disciplines.

6. STRUCTURED TRAINING PROGRAMME

I Year

First term

Dissection, basic sciences, basic computer sciences, exodontias, seminars on basic

sciences, selection of dissertation topic, library assignment topic, attending O.T and preparation of synopses and its submission within the six months after admission to the university as per calendar of events.

Second term (rotation and postings in other departments)

Oncology - 2months
Emergency - 1month
General medicine - 15 days
General surgery/anaesthesia - 15 days
Ophthalmology - 15 days
Neurology - 15 days
ENT - 15 days

Helping the undergraduate students if some assistance is required by them in exodontia and other minor surgical procedures. Recording complete history, getting the investigations (including biopsy) done and making the diagnosis of patients for the minor (impaction, apicoectomy etc.) as well as major surgical cases coming to the department. PG's should attend ward rounds twice daily.

II Year

To perform minor oral surgical procedures, with each step of the procedure evaluation and to undergo higher surgical training under close supervision of the MDS staffs. Library dissertation has to be submitted within eighteen months from the date of commencement of the course. A log book has to be maintained and submitted to the Head of the Department for final approval.

2nd year PG should guide the 1st year PG in letting them perform their above-mentioned duties.

Work up on Pre-anaesthetic evaluation and preparation of the patients for minor / major surgery under G.A / L.A in operating room. They also have to do Pre-surgical preparation of the patient and shifting the patient to OR in time after taking the recent consent of patient / guardian, for surgery/ anaesthesia. The surgical and anaesthetic risks involved should be explained to the patient in detail and also should be in writing.

To perform the minor oral surgical procedure only after complete evaluation and discussion about the case, with the MDS staff.

While attending cases in the casualty on the designated date of emergency duty, if in case they are not able handle by themselves, then a request to the consultant on call should be made immediately without wasting time.

They have to maintain proper documentation of the pre-operative, intra-operative, post-operative & review/follow up records (Photograph, Radiographs, cast, models and investigation record, etc.).

Record should be submitted within a week after patient is discharged. Records of the follow up of the patient should be maintained carefully and completely as per the treatment

- BOX LOOP (SS 16x22)
- T LOOP (TMA 17x25)

7. TYPODONT EXERCISES

- Bands on molars
- BONDING OF BRACKETS WITH NITI PLAIN ARCH WIRE 17x25
- RETRACTION MECHANICS — T LOOP AND TEAR DROP
- INTRUSION MECHANICS — K-SIR AND THREE PIECE

8. CEPHALOMETRIC TRACING

LATERAL CEPHALOMETRIC TRACING AND ANALYSIS OF CLASS I & CLASS II

1) ANALYSIS: STEINER'S

MCNAMARA

RICKETS

BJORK

TWEED'S

WIT'S

DOWN

2) COG'S- CLASS III

3) FRONTAL CEPHALOMETRIC ANALYSIS -GRUMMON'S ANALYSIS ASYMMETRICAL (FACIAL)

9. PREPARATION OF STUDY MODELS as per specifications of 'Indian board of Orthodontics' standards.

10. COMPUTERISED DIGITAL TRACING: using computer softwares and treatment predictions using softwares

11. PREPARATION OF SURGICAL SPLINT

12. VACUUM FORMED CAPSPLINT

Writing Thesis/Research papers:

Attitudes including Communication Skills

A. 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

B. 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

Training in Research Methodology, Biostatistics, Ethics / Bioethics in Dentistry, Jurisprudence and Audits

All MDS candidates shall compulsorily attend the Research Methodology Workshop conducted by the University within 6 months from the date of joining the course. In this regard, the candidates will be issued a completion Certificate by the University.

EVERY POST GRADUATE STUDENT MUST UNDERGO A TRAINING IN RESEARCH METHODOLOGY, BIostatISTICS, ETHICS, BIOETHICS IN RESEARCH, JURISPRUDENCE AND AUDITS, WITHIN THE FIRST SIX MONTHS OF COURSE, WHICH WILL HELP THEM TO DECIDE THEIR DISSERTATION TOPIC AND METHODOLOGY

Health Informatics - Usage of Information technology (Computer)

STUDENTS SHOULD BE MADE WELL FAMILIAR WITH THE REQUIRED COMPUTER AND INFORMATICS SKILLS .

4. THEORY SYLLABUS

I. APPLIED ANATOMY:

Prenatal growth of head:

Stages of embryonic development, origin of head, origin of face, origin of teeth.

- Postnatal growth of head:

Bones of skull, the oral cavity, development of chin, the hyoid bone, general growth of head, face growth.

- Bone growth:

Origin of bone, composition of bone, units of bone structure, schedule of Ossification, mechanical properties of bone, roentgen graphic appearance of bone

- Assessment of growth and development:

Growth prediction, growth spurts, the concept of normality and growth increments of growth, differential growth, gradient of growth, methods of gathering growth data. Theories of growth and recent advances, factors affecting physical growth.

- Muscles of mastication:

Development of muscles, muscle change during growth, muscle function and facial development, muscle function and malocclusion

- Development of dentition and occlusion:

Dental development periods, order of tooth eruption, chronology of permanent tooth formation, periods of occlusal development, pattern of occlusion.

- Assessment of skeletal age

The carpal bones, carpal x - rays, cervical vertebrae

II PHYSIOLOGY:

Endocrinology and its disorders

(Growth hormone, thyroid hormone, parathyroid hormone, ACTH) pituitary gland hormones, thyroid gland hormones, parathyroid gland hormones

- **Calcium and its metabolism**

- **Nutrition-metabolism and their disorders:**

proteins, carbohydrates, fats, vitamins and minerals.

- **Muscle physiology**
- **Craniofacial Biology:** cell adhesion molecules and mechanism of adhesion
- **Bleeding disorders in orthodontics: Hemophilia**

III

DENTAL MATERIALS:

- **Gypsum products:** dental plaster, dental stone and their properties, setting reaction etc.
- **Impression materials:** impression materials in general and particularly of alginate impression material.
- **Acrylics:** chemistry, composition physical properties
- **Composites:** composition types, properties setting reaction
- **Banding and bonding cements:** Zn (PO₄)₂, zinc silicophosphate, Zinc polycarboxylate, resin cements and glass ionomer cements
- **Wrought metal alloys:** deformation, strain hardening, annealing, recovery, recrystallization, grain growth, properties of metal alloys
- **Orthodontic arch wires:** stainless steel gold, wrought cobalt chromium nickel alloys, alpha&beta titanium alloys.
- **Elastics:** Latex and non-latex elastics.
- **Applied physics, Bioengineering and metallurgy.**
- **Specification and tests methods** used for materials used in Orthodontics
- **Survey of all contemporary literature and Recent advances** in above mentioned materials.

IV

GENETICS:

- Cell structure, DNA, RNA, protein synthesis, cell division
- Chromosomal abnormalities
- Principles of orofacial genetics
- Genetics in malocclusion
- 5 Molecular basis of genetics
- Studies related to malocclusion
- Recent advances in genetics related to malocclusion
- Genetics counseling
- Bioethics and relationship to Orthodontic management of patients.

V

PHYSICAL ANTHROPOLOGY:

- Evolutionary development of dentition
- Evolutionary development of jaws.

VI

PATHOLOGY:

- Inflammation
- Necrosis

VII

BIOSTATISTICS:

- Statistical principles
- Data Collection

- o Method of presentation
- o Method of Summarizing
- o Methods of analysis – different tests / errors
- Sampling and Sampling technique
- Experimental models, design and interpretation
- Development of skills for preparing clear concise and cogent scientific abstracts and publication

VIII **APPLIED RESEARCH METHODOLOGY IN ORTHODONTICS:**

- Experimental design
- Animal experimental protocol
- Principles in the development, execution and interpretation of methodologies in Orthodontics
- Critical Scientific appraisal of literature.

IX **APPLIED PHARMACOLOGY**

X **ORTHODONTIC HISTORY:**

- Historical perspective,
- Evolution of orthodontic appliances,
- Pencil sketch history of Orthodontic peers
- History of Orthodontics in India

XI **CONCEPTS OF OCCLUSION AND ESTHETICS:**

- Structure and function of all anatomic components of occlusion,
- Mechanics of articulation,
- Recording of masticatory function
- Diagnosis of Occlusal dysfunction,
- Relationship of TMJ anatomy and pathology and related neuromuscular physiology.

XII **ETIOLOGY AND CLASSIFICATION OF MALOCCLUSION:**

- A comprehensive review of the local and systemic factors in the causation of malocclusion
- Various classifications of malocclusion

XIII **DENTOFACIAL ANOMALIES:**

- Anatomical, physiological and pathological characteristics of major groups of developmental defects of the orofacial structures.

XIV **CHILD AND ADULT PSYCHOLOGY:**

- Stages of child development.
- Theories of psychological development.
- Management of child in orthodontics treatment.
- Management of handicapped child.
- Motivation and Psychological problems related to malocclusion / orthodontics
- Adolescent psychology
- Behavioral psychology and communication

XV **DIAGNOSTIC PROCEDURES AND TREATMENT PLANNING IN ORTHODONTICS**

- Emphasis on the process of data gathering, synthesis and translating it into a treatment plan

7. Cephalometric tracing and various Analyses, also superimposition methods –
8. Fixed appliance typhodont exercises.
- a) Training shall be imparted in one basic technique i.e. Standard Edgewise / Begg technique or its derivative / Straight wire etc., with adequate exposure to other techniques.
- b) Typhodont exercise
 - i. Band making
 - ii. Bracket positioning and placement
 - iii. Different stages in treatment appropriate to technique taught
9. Clinical photography
10. Computerized imaging
11. Preparation of surgical splints, and splints for TMJ problems
12. Handling of equipments like vacuum forming appliances and hydro solder etc.

5. LEARNING METHODS (including Clinical Study)

(a) LECTURES:

There shall be some didactic lectures in the speciality and in the allied fields. The departments shall encourage guest lectures in the required areas and integrated lectures by multi-disciplinary teams on selected topics, to strengthen the training programmes.

(b) JOURNAL REVIEW:

The journal review meetings shall be held at least once a week. All trainees, associate and staff associated with the post-graduate programme are expected to participate actively and enter relevant details in the logbook. The trainee shall make presentations from the allotted journals of selected articles.

(c) SEMINARS:

The seminars shall be held at least twice a week in each department. All trainees are expected to participate actively and enter relevant details in logbook.

(d) SYMPOSIUM:

It is recommended to hold symposium on topics covering multiple disciplines.

(e) CLINICAL POSTINGS:

Each trainee shall work in the clinics on regular basis to acquire adequate professional skills and competency in managing various cases.

(f) CLINICO-PATHOLOGICAL CONFERENCE:

The clinico pathological conference shall be held once a month involving the faculties of Oral Medicine and Radiology, Oral Pathology and allied clinical departments. The trainees

shall be encouraged to present the clinical details, radiological and histo-pathological interpretations and participation in the discussions.

(g) INTER-DEPARTMENTAL MEETINGS:

To encourage integration among various specialities, there shall be inter-departmental meeting chaired by the Dean with all heads of post-graduate departments at least once a month.

(h) TEACHING SKILLS:

All the trainees shall be encouraged to take part in undergraduate teaching programmes either in the form of lectures or group discussion.

(i) DENTAL EDUCATION PROGRAMMES:

Each department shall organise dental education programmes on regular basis involving other institutions. The trainees shall also be encouraged to attend such programmes conducted outside their university or institute.

(j) CONFERENCES/WORKSHOPS/ADVANCED COURSES:

The trainees shall be encouraged to attend conference/workshops/advanced courses and also to present at least two scientific papers and two posters at State/national level speciality and allied conferences/conventions during the training period.

(k) ROTATION AND POSTING IN OTHER DEPARTMENTS:

To bring in more integration among the specialities and allied fields, each department shall workout a programme to rotate the trainees in related disciplines.

6. STRUCTURED TRAINING PROGRAMME :

FIRST YEAR PG COURSE

- PRECLINICAL EXERCISES & THEORY CLASSES :

Preclinical exercises – first six months

- basic medical science Theory classes:

Theory classes / practicals etc taken by basic medical science departments covering on the applied aspects pertaining to the specialty subjects

- Have a training on record maintenance

(i)Horizontal teaching : lectures by same specialists

(ii)Vertical teaching : for selected topics , a comprehensive teaching where different specialists will brief on various aspects of the disease

Eg: for TMJ topic-

Anatomy by anatomists,

Normal working by Physiologists

Etiopathogenesis by Oral Pathologists

Diagnosis by Oral medicine and radiologists

Surgical management by Oral surgeons

Orthodontic management by orthodontists

- Clinical : patient treatment – can be taken up under guidance of guide .
- Each student must maintain log book for work done every day.

- Present seminars
- Present journal reviews
- Field surveys /visits
- Interdepartmental meetings: once a month
- Internal assessment – term paper

SECOND YER PG COURSE

CLINICAL POSTINGS:

Each trainee shall work in the clinics on regular basis to acquire adequate professional skills and competency in managing various cases.

- Minimum of 50 self cases should be started by each Pg student.
- Should complete and submit the library dissertation within eighteen months from the date of commencement of the course.
- A model check list for evaluation of clinical postings is annexed (DCI FORMAT)
- During the second year of PG course the students should be deputed to related departments like oral surgery / plastic surgery to attend the special clinics and / or watch the orthognathic surgeries , cleft lip and palate repair and craniofacial deformities surgeries at plastic surgery departments in medical colleges .
- Dissertation : approval should be obtained from the university and dissertation should be started and continuously evaluated by the guide / co -guide / IEC.
- Each student must maintain log book for work done every day.
- Case discussions
- Field surveys /visits
- Present seminars
- Present journal reviews
- Field surveys /visits
- Interdepartmental meetings; once a month
- Internal assessment – term paper

THIRD YEAR PG COURSE

- Clinicals – should have taken up different kinds of malocclusion patients for treatment .
- Should be able to take over the Transferred cases
- Should complete and submit dissertation six months prior to taking up final examinations
- Each student must maintain log book for work done every day.
- Present seminars
- Present journal reviews
- Field surveys /visits
- Preparation of finished cases and presenting the cases (to be presented for the examinations)
- Mock written and clinical examinations

7. DISSERTATION

Every candidate appearing for the post-graduate degree examination shall at least six months prior to the examinations, submit with his form for examination, four typewritten copies of the dissertation undertaken by the candidate, prepared under the direction and guidance of his/her guide.

It must be approved by the Institutional Review Board consisting of Principal, all the HOD's, an advocate, medical specialties and social worker within the first six months after the commencement of the course. The application for registration of dissertation topic must be sent through the Principal duly forwarded by the Professor/ HOD. The University will register such dissertation topic. In case the students want to change the topic of dissertation, they can do it within the next three months. No change in the Guide/dissertation topic shall be made without prior approval of the University.

The aim of dissertation is to train a postgraduate student in research methodology. It includes identification of a problem with recent advances, designing of research study on collection of data, practical analysis and comparison of results and drawing conclusions. The dissertation should be written under the following headings.

Introduction / Aims and objective / Review and literature / Materials & Methods / Results / Discussion

Conclusion/Summary

The written text of dissertation shall not be less than 100pages. It should be neatly typed in double line spacing on one side (A4 size, 8. 27"x 11.69") and bounded properly. Photos, charts, tables, tables and graphs can be attached where ever necessary. Spiral binding should not be used. The dissertation shall be certified by the Guide and Head of the department and forwarded by the Principal to the University.

The dissertation so submitted shall be referred to the examiners for their examination and acceptance of it shall be a condition precedent to allow the candidate to appear for the written part of the examination,

Provided that a candidate whose dissertation has been accepted by the examiner, but declared failed at the examination, shall be permitted to re-appear at the subsequent examination without a new dissertation.

Provided further that if the dissertation is rejected by the examiner, the examiner shall assign reasons thereof with suggestions for its improvement to the candidate and such candidate shall re-submit his/ her dissertation to the examiner who shall accept it before appearing in the examination.

8. THEORY EXAMINATION:

Part – I : Paper-I : Applied Basic Sciences: Applied anatomy, Physiology, Dental Materials, Genetics, Pathology, Physical Anthropology, Applied Research methodology, Bio-Statistics and Applied Pharmacology.

Part – II : Paper-I : Orthodontic history, Concepts of occlusion and esthetics, Child and Adult Psychology, Etiology and classification of malocclusion, Dentofacial Anomalies, Diagnostic procedures and treatment planning in Orthodontics, Practice management in Orthodontic

Paper II : Clinical Orthodontics

Paper III: Descriptive and analysing type question

DISTRIBUTION OF MARKS:

Theory : Total 400 Marks

Practical and Clinical Examination : 200 Marks

- and by attending courses, conferences and seminars pertaining to speciality;
- To undertake audit, use information technology and carry out research in both basic and clinical with the aim of publishing or presenting the work at various scientific gathering.

(B) ATTITUDE

- To adopt ethical principles while practicing Oral Pathology.
- To inculcate professional honesty and exhibit integrity.
- To treat patients regardless of social status, caste, creed or religion.
- To share knowledge and clinical experience with professional colleagues.
- To adopt new scientific methods and techniques in Oral Pathology while delivering patient care.
- To respect patients right and privileges including patients right to information.
- To render all possible help if the patient wish to seek second opinion.

(C) SKILLS

- Take proper clinical history, examine the patient, perform essential diagnostic procedures and order relevant tests and interpret them to come to a reasonable diagnosis about the condition.
- Acquire adequate skills and competence in performing various procedures as required in the speciality.

3. COMPONENTS OF THE POSTGRADUATE CURRICULUM

a) Theoretical Knowledge

- Advanced histological and histopathological study of dental and oral tissues including embryonic considerations, clinical considerations, biology, histology, and pathology, concept of oral premalignancy, prognosis and management of oral oncology.
- Applied and theoretical biochemical basis of histochemistry as related to oral pathology.
- Study of special and applied pathology of oral tissues as well as relation of local pathologic and clinical findings to systemic conditions.
- Oral microbiology and their relationship to various branches of dentistry.
- Oral microbiology affecting hard and soft tissues. Study of clinical changes and their significance to dental and oral diseases as related to oral pathology
- Forensic odontology
- Inter institutional postings such as cancer hospital, dermatology clinics, regional HIV detection centers, sophisticated instrumentation centers for electron microscopy and other techniques.
- Library assignment.
- University Dissertation
- Maintenance of records of all postgraduates' activities.

b) Practical and Clinical Skills

- Study of principles of routine and special techniques such as special stains,

histochemistry and immunohistochemistry.

- To study the relevant laboratory methods used to prepare the tissue specimen for histopathological examination and the research tools used to practice of diagnostic oral pathology.
- To examine the patients, record pertinent clinical information, clinical photos and radiological images.
- To study the biopsy tissue by performing grossing procedure in relation to the clinical, radiological and surgical findings.

c) Writing Thesis/Research papers

- As postgraduate training in Oral Pathology is not limited to diagnostic pathology, learning the art of writing is essential for the effective dissemination of knowledge either for the purpose of writing thesis or scientific research papers, both of which eventually leads to better patient care.

d) Attitudes including Communication Skills

- To develop positive attitudes towards colleagues, teachers and patients in order to maintain the decorum of the department/institution.
- To abide by the rules and regulations of the institution.
- Display good communication skills to provide suitable instructions to the patients.
- Display empathy and sympathy for the sufferings of the patient.
- Express and defend their scientific ideas to the fellow students, teachers and examiners.
- Obtain informed consent from the patient whenever necessary.

e) Training in Research Methodology, Biostatistics, Ethics / Bioethics in Dentistry, Jurisprudence and Audits

Research methodology

- Acquiring basic knowledge in the research methodologies are central to postgraduate curriculum for the purpose design, conduct of independent research and writing research proposal for grant.

Biostatistics

- No research is complete unless the data makes sense. Therefore, for proper scientific dissemination and consequential judgement, the data has to be rigorously analysed by the application of basic principles of biostatistics.

Research Methodology Workshop

All MDS candidates shall compulsorily attend the Research Methodology Workshop conducted by the University within 6 months from the date of joining the course. In this regard, the candidates will be issued a completion Certificate by the University.

Ethics/Bioethics

- Must sign declaration of code of ethics.
- As a health care provider, it is paramount to practice honesty and integrity, are for the concerns and needs of the patients, maintain good clinical practice, maintain dental / medical records and maintain strict confidentiality.
- Apply high moral and ethical standards while carrying out human or animal research.
- Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.

(b) JOURNAL REVIEW:

The journal review meetings shall be held at least once a week. All trainees, associate and staff associated with the post-graduate programme are expected to participate actively and enter relevant details in the logbook. The trainee shall make presentations from the allotted journals of selected articles.

(c) SEMINARS:

The seminars shall be held at least twice a week in each department. All trainees are expected to participate actively and enter relevant details in logbook.

(d) SYMPOSIUM:

It is recommended to hold symposium on topics covering multiple disciplines.

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Each trainee shall work in the clinics on regular basis to acquire adequate professional skills and competency in managing various cases.

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The clinico pathological conference shall be held once a month involving the faculties of Oral Medicine and Radiology, Oral Pathology and allied clinical departments. The trainees shall be encouraged to present the clinical details, radiological and histo-pathological interpretations and participation in the discussions.

(g) INTER-DEPARTMENTAL MEETINGS:

To encourage integration among various specialities, there shall be inter-departmental meeting chaired by the Dean with all heads of post-graduate departments at least once a month.

(h) TEACHING SKILLS:

All the trainees shall be encourages to take part in undergraduate teaching programmes either in the form of lectures or group discussion.

(i) DENTAL EDUCATION PROGRAMMES:

Each department shall organise dental education programmes on regular basis involving other institutions. The trainees shall also be encouraged to attend such programmes conducted outside their university or institute.

(j) CONFERENCES/WORKSHOPS/ADVANCED COURSES:

The trainees shall be encouraged to attend conference/workshops/advanced courses and also to present at least two scientific papers and two posters at State/national level speciality and allied conferences/conventions during the training period.

(k) ROTATION AND POSTING IN OTHER DEPARTMENTS:

To bring in more integration among the specialities and allied fields, each department shall workout a programme to rotate the trainees in related disciplines.

6. STRUCTURED TRAINING PROGRAMME

Clinical Postings year-wise Rotations and postings in other departments/institutions.

FIRST YEAR

- Oral Medicine – minimum of six months.
- Microbiology – minimum of 15 days in General Microbiology Department of a Medical College.
- Hematology – minimum of 15 days in a Medical College.
- Clinical Pathology - minimum of 15 days in a Medical College.

SECOND YEAR

- Oral Surgery – minimum of two months.
- Immuno histo chemistry – minimum of 15-days in any standard laboratory / institutions.
- Animal experiment – minimum of 15 days in a Veterinary College or animal experiment laboratory.

THIRD YEAR

- Cancer Institute – minimum of 15 days in a Regional cancer centre or Oncology departments of a Medical College.
- Dermatology – minimum of 15 days in a Medical College.
- Forensic Odontology – minimum of 15 days in the Forensic Medicine Department of a Medical College.

7. DISSERTATION

Every candidate appearing for the post-graduate degree examination shall at least six months prior to the examinations, submit with his form for examination, four typewritten copies of the dissertation undertaken by the candidate, prepared under the direction and guidance of his/her guide.

It must be approved by the Institutional Review Board consisting of Principal, all the HOD's, an advocate, medical specialties and social worker within the first six months after the commencement of the course. The application for registration of dissertation topic must be sent through the Principal duly forwarded by the Professor/ HOD. The University will register such dissertation topic. In case the students want to change the topic of dissertation, they can do it within the next three months. No change in the Guide/dissertation topic shall be made without prior approval of the University.

The aim of dissertation is to train a postgraduate student in research methodology. It includes identification of a problem with recent advances, designing of research study on

(C) SKILLS

Take history, conduct clinical examination including all diagnostic procedures to arrive at diagnosis at the individual level and conduct survey of the community at a state and national level of all conditions related to oral health to arrive at community diagnosis.

Plan and perform all necessary treatment, prevention, and promotion of Oral Health at the individual and community level.

Plan appropriate Community Oral Health Programme, conduct the programme and evaluate, at the community level.

Ability to make use of knowledge of epidemiology to identify causes and plan appropriate preventive and control measures.

Develop appropriate person power at various levels and their effective utilization.

Conduct survey and use appropriate methods to impart Oral Health Education

Develop ways of helping the community towards easy payment plan, followed by evaluation of their oral health care needs.

Develop the planning, implementation, evaluation and administrative skills to carry out successful Community oral Health programmes

3. COMPONENTS OF THE POSTGRADUATE CURRICULUM

Theoretical knowledge

Practical and clinical skills

Teaching and learning experience

Training in Research methodology, Biostatistics, Ethics/Bioethics in Dentistry, Dental Jurisprudence , Exposure to human behavioural sciences and Audit.

Communication skills-verbal and written

Health Informatics- usage of Information technology

Education technology and pedagogy

Organization and administration of hospital/clinic

Evaluation – scheme, schedules, model, question papers and criteria for pass

Learning material recommended (books, journals etc)

Training in Research Methodology, Biostatistics, Ethics / Bioethics in Dentistry, Jurisprudence and Audits

Training in Research Methodology:

All MDS candidates shall compulsorily attend the Research Methodology workshop

conducted by the University within 6 months from the date of joining the course. In this regard, the candidates will be issued a completion Certificate by the University.

Introduction to Ethics

What is ethics? What are values and norms? How to form a value system in one's personal and professional life? Hippocratic oath, Declaration of Helsinki, WHO declaration of Geneva, International code of ethics, D.C.I. Code of ethics.

Ethics of the Individual

The patient as a person, right to be respected, Truth and confidentiality, Autonomy of decision, Doctor Patient relationship.

Professional Ethics

Code of conduct, Contract and confidentiality, charging of fees, fee splitting, Prescription of drugs, Over-investigating the patient, Malpractice and negligence

Research Ethics

Animal and experimental research/humanness, Human experimentation, Human volunteer research, informed consent, Drug trials, Ethical workshop of cases, gathering all scientific factors, gathering all value factors, identifying areas of value-conflict, setting of priorities, Working out criteria towards decisions

Basic principles of law

Contract laws- dentist - patient relationships & Legal forms of practice, Dental malpractice , Person identification through dentistry , Legal protection for practicing dentist. , Consumer protection act

Health Informatics usage of Information technology (Computer):

Students should utilize a combination of traditional classroom courses, and online courses. The following validation is required and must be completed during the first year of study.

- Technological Requirements for all Graduate Students
- A laptop or desktop computer that supports the following requirements
 1. Operating system requirements
 2. Internet browser requirements
 3. Reliable and consistent access to the internet
 4. Virus software which is current and consistently updated
 5. Microsoft Office
 6. Adobe Reader (or equivalent to view PDF files)

PRACTICE MANAGEMENT	Ethical and legal issues in dental practice Current trends	Definition Principles of management of dental practice and types Organization and administration of dental practice	
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5. TEACHING LEARNING METHODS (including Clinical Study)

PERIOD OF TRAINING.

The period of training for the award of the MDS course shall be of three years duration for three academic years as full time candidates in an institution including the period of examination:

Provided that the time period required for passing out of the MDS course shall be a maximum of six years from the date of admission in said course:

Provided further that the duration of the post-graduate course for the post-graduate Diploma holders shall be of two years in the respective specialty. The syllabus and curriculum shall be the same as MDS Course in the concerned specialty except that they are not required

- (i) to undergo study and training in Basic Sciences and
- (ii) pass the PART-I Examination of MDS Course.

However, they have to submit the dissertation work, as part of the post-graduate programme.

During the period, each student shall take part actively in learning and teaching activities design of training, by the institution or the University. The teaching and learning activities in each specialty, shall be as under:—

(a) LECTURES:

There shall be some didactic lectures in the speciality and in the allied fields. The departments shall encourage guest lectures in the required areas and integrated lectures by multi-disciplinary teams on selected topics, to strengthen the training programmes.

(b) JOURNAL REVIEW:

The journal review meetings shall be held at least once a week. All trainees, associate and staff associated with the post-graduate programme are expected to participate actively and enter relevant details in the logbook. The trainee shall make presentations from the allotted journals of selected articles.

(c) SEMINARS:

The seminars shall be held at least twice a week in each department. All trainees are expected to participate actively and enter relevant details in logbook.

(d) SYMPOSIUM:

It is recommended to hold symposium on topics covering multiple disciplines.

(e) CLINICAL POSTINGS:

Each trainee shall work in the clinics on regular basis to acquire adequate professional skills and competency in managing various cases.

(f) CLINICO-PATHOLOGICAL CONFERENCE:

The clinico pathological conference shall be held once a month involving the faculties of Oral Medicine and Radiology, Oral Pathology and allied clinical departments. The trainees shall be encouraged to present the clinical details, radiological and histo-pathological interpretations and participation in the discussions.

(g) INTER-DEPARTMENTAL MEETINGS:

To encourage integration among various specialities, there shall be inter-departmental meeting chaired by the Dean with all heads of post-graduate departments at least once a month.

(h) TEACHING SKILLS:

All the trainees shall be encouraged to take part in undergraduate teaching programmes either in the form of lectures or group discussion.

(i) DENTAL EDUCATION PROGRAMMES:

Each department shall organise dental education programmes on regular basis involving other institutions. The trainees shall also be encouraged to attend such programmes conducted outside their university or institute.

(j) CONFERENCES/WORKSHOPS/ADVANCED COURSES:

The trainees shall be encouraged to attend conference/workshops/advanced courses and also to present at least two scientific papers and two posters at State/national level speciality and allied conferences/conventions during the training period.

(k) ROTATION AND POSTING IN OTHER DEPARTMENTS:

To bring in more integration among the specialities and allied fields, each department shall workout a programme to rotate the trainees in related disciplines.

6. STRUCTURED TRAINING PROGRAMME

All the students of the specialty departments shall complete the minimum quota for the teaching and learning activities, as follows:—

lesions, viral infections etc.

26. Congenital Abnormalities in Children: Definition, Classification, Clinical features of Management.

27. Dental Emergencies in Children and their Management.

28. Dental Materials used in Pediatric Dentistry.

29. Preventive Dentistry:

- Definition
- Principles and Scope
- Types of prevention
- Different preventive measures used in Pediatric Dentistry including fissure sealants and caries vaccine.

30. Dental Health Education 8s School Dental Health Programmes

31. Dental health concepts, Effects of civilization and environment, Dental Health delivery system, Public Health measures related to children along with principles of Pediatric Preventive Dentistry

32. Fluorides:

- Historical background
- Systemic & Topical fluorides
- Mechanism of action
- Toxicity & Management.
- Defluoridation techniques.

33. Medicolegal aspects in Paediatric Dentistry with emphasis on informed concept.

34. Counseling in Pediatric Dentistry

35. Case History Recording, Outline of principles of examination, diagnosis & treatment planning.

36. Epidemiology: Concepts, Methods of recording & evaluation of various oral diseases. Various national & global trends of epidemiology of oral diseases

37. Comprehensive Infant Oral Health Care.

38. Principles of Bio-Statistics & Research Methodology & Understanding of Computers and Photography

39. Comprehensive cleft care management with emphasis on counseling, feeding, nasoalveolarbone remodeling, speech rehabilitation.

40. Setting up of pediatric dental clinic.

41. Emerging concept in Paediatric Dentistry - scope of laser/minimal invasive dentistry

5. TEACHING LEARNING METHODS (including Clinical Study)

(a) LECTURES:

There shall be some didactic lectures in the speciality and in the allied fields. The departments shall encourage guest lectures in the required areas and integrated lectures by multi-disciplinary teams on selected topics, to strengthen the training programmes.

(b) JOURNAL REVIEW:

The journal review meetings shall be held at least once a week. All trainees, associate and staff associated with the post-graduate programme are expected to participate actively and enter relevant details in the logbook. The trainee shall make presentations from the allotted journals of selected articles.

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(i) DENTAL EDUCATION PROGRAMMES:

Each department shall organise dental education programmes on regular basis involving other institutions. The trainees shall also be encouraged to attend such programmes conducted outside their university or institute.

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The trainees shall be encouraged to attend conference/workshops/advanced courses and also to present at least two scientific papers and two posters at State/national level speciality and allied conferences/conventions during the training period.

procedures and order relevant tests and interpret them to come to a reasonable diagnosis about the condition;

(ii) acquire adequate skills and competence in performing various procedures as required in the speciality.

- **Writing Thesis / Research Papers**

All Post Graduate students shall prepare a dissertation based on the clinical or experimental work or any other study conducted by them under the supervision of the The Head of Department and guide.

Submission of Synopsis related to the dissertation work:

One synopsis within six months from the date of commencement of the course

Submission of Dissertation months:

One dissertation within six before appearing for the university examination

- **Attitudes including Communication Skills**

Develop adequate communication skills particularly with the patients giving them 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.

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

Training in Research Methodology, Biostatistics, Ethics/Bioethics in Dentistry , Jurisprudence and Adults

- **Research methodology-**

All MDS candidates shall compulsorily attend the Research Methodology Workshop conducted by the University within 6 months from the date of joining the course. In this regard, the candidates will be issued a completion Certificate by the University.

Definitions types of research, designing written protocol for research, objectivity in methodology, quantification, records and analysis.

Biostatistics-introduction, applications, uses and limitations of bio-statistics in Public Health dentistry, collection of data, presentation of data, measures of central tendency, measures of dispersion, methods of summarizing, parametric and non parametric tests of significance, correlation and regression, multivariate analysis sampling and sampling techniques – types, errors, bias, trial and calibration.

- **Bioethics**

1. Respect human life and the dignity of every individual

2. Refrain from supporting or committing crimes against humanity
 3. Treat the sick and injured with competence and compassion
 4. Protect the privacy and confidentiality of those for whom we care and breach that confidence only when keeping it would seriously threaten their health and safety or that of others
 5. Work freely with colleagues to discover, develop, and promote advances in medicine and public health that ameliorate suffering and contribute to human well being
 6. Educate the public about present and future threats to the health of humanity
 7. Advocate for social, economic, educational and political changes that ameliorate suffering and contribute to human well being.
 8. Teach and mentor those who follow US, for they are the future of our caring profession.
- Health informatics- usage of information technology (Computer)

basic understanding of computers and its components, operating software (Windows), Microsoft office, preparation of teaching materials like slides, project, multimedia knowledge.

4. THEORY SYLLABUS

Applied Anatomy

1. Gross anatomy of the face:
 - a. Muscles of Facial Expression And Muscles Of Mastication
 - b. Facial nerve
 - c. Facial artery
 - d. Facial vein
 - e. Parotid gland and its relations
2. Neck region:
 - a. Triangles of the neck with special reference to Carotid, Digastric triangles and midline structures
 - b. Facial spaces
 - c. Carotid system of arteries, Vertebral Artery, and Subclavian arteries
 - d. Jugular system
 - Internal jugular
 - External jugular
 - e. Lymphatic drainage
 - f. Cervical plane
 - g. Muscles derived from Pharyngeal arches
 - h. Infratemporal fossa in detail and temporomandibular joint
 - i. Endocrine glands Pituitary
 - j. Sympathetic chain
 - k. Cranial nerves-V, VII, IX, XI, & XII
 - Thyroid
 - Parathyroid
 - l. Exocrine glands
 - Parotid
 - Thyroid

- Parathyroid
- 3. Oral Cavity:
 - a. Vestibule and oral cavity proper
 - b. Tongue and teeth
 - c. Palate - soft and hard
- 4. Nasal Cavity
 - a. Nasal septum
 - b. Lateral wall of nasal cavity
 - c. Paranasal air sinuses

5. Pharynx:

Gross salient features of brain and spinal cord with references to attachment of cranial nerves to the brainstem.

Detailed study of the cranial nerve nuclei of V, VII, IX, X, XI, XII Osteology: Comparative study of fetal and adult skull Mandible:

Development, ossification, age changes and evaluation of mandible in detail

Embryology

1. Development of face, palate, nasal septum and nasal cavity, paranasal air sinuses
2. Pharyngeal apparatus in detail including the floor of the primitive pharynx
3. Development of tooth in detail and the age changes
4. Development of salivary glands
5. Congenital anomalies of face must be dealt in detail.

Histology:

1. Study of epithelium of oral cavity and the respiratory tract
2. Connective tissue
3. Muscular tissue
4. Nervous tissue
5. Blood vessels
6. Cartilage
7. Bone and tooth
8. Tongue
9. Salivary glands
10. Tonsil, thymus, lymph nodes

Physiology:

1. General Physiology:
 - Cell
 - Body Fluid Compartments
 - Classification
 - Composition
 - Cellular transport
 - RMP and action potential Muscle Nerve Physiology
2. Structure of a neuron and properties of nerve fibers
3. Structure of muscle fibers and properties of muscle fibers
4. Neuromuscular transmission
5. Mechanism of muscle contraction

Blood:

1. RBC and Hb
2. WBC - Structure and functions
3. Platelets - functions and applied aspects
4. Plasma proteins
5. Blood Coagulation with applied aspects
6. Blood groups
7. Lymph and applied aspects

Respiratory System:

- Air passages, composition of air, dead space, mechanics of respiration with pressure and volume changes
- Lung volumes and capacities and applied aspects
- Oxygen and carbon dioxide transport
- Neural regulation of respiration
- Chemical regulation of respiration
- Hypoxia, effects of increased barometric pressure and decreased barometric pressure
- Cardio-Vascular System:
- Cardiac Cycle
- Regulation of heart rate/ Stroke volume / cardiac output / blood flow
- Regulation of blood pressure
- Shock, hypertension, cardiac failure

Excretory system

- Renal function tests

Gastro - intestinal tract:

- Composition, functions and regulation of:
- Saliva
- Gastric juice
- Pancreatic juice
- Bile and intestinal juice
- Mastication and deglutition

Endocrine system:

- Hormones - classification and mechanism of action
- Hypothalamic and pituitary hormones
- Thyroid hormones
- Parathyroid hormones and calcium homeostasis
- Pancreatic hormones
- Adrenal hormones

Central Nervous System:

- Ascending tract with special references to pain pathway

Special Senses:

- Gustation and Olfaction

Biochemistry

1. Carbohydrates - Disaccharides specifically maltose, lactose, sucrose

- Digestion of starch/absorption of glucose
- Metabolism of glucose, specifically glycolysis, TCA cycle, gluconeogenesis
- Blood sugar regulation
- Glycogen storage regulation
- Glycogen storage diseases
- Galactosemia and fructosemia

2. Lipids

- Fatty acids- Essential/non essential
- Metabolism of fatty acids- oxidation, ketone body formation, utilization ketosis
- Outline of cholesterol metabolism- synthesis and products formed from cholesterol

3. Protein

- Amino acids- essential/non essential, complete/ incomplete proteins
- Transamination/ Deamination (Definition with examples)
- Urea cycle
- Tyrosine- Hormones synthesized from tyrosine
- In born errors of amino acid metabolism
- Methionine and transmethylation

4. Nucleic Acids

- Purines/Pyrimidines Purine analogs in medicine
- DNA/RNA-Outline of structure
- Transcription / translation Steps of protein synthesis Inhibitors of protein synthesis Regulation of gene function

5. Minerals

- Calcium/Phosphorus metabolism specifically regulation of serum calcium levels
- Iron metabolism
- Iodine metabolism
- Trace elements in nutrition

6. Energy Metabolism

- Basal metabolic rate
- Specific dynamic action (SDA) of foods

7. Vitamins

- Mainly these vitamins and their metabolic role- specifically vitamin A, Vitamin C, Vitamin D, Thiamin, Riboflavin, Niacin, Pyridoxine

Pathology:

1. Inflammation:

- Repair and regeneration, necrosis and gangrene
- Role of complement system in acute inflammation
- Role of arachidonic acid and its metabolites in acute inflammation

- Growth factors in acute inflammation
- Role of molecular events in cell growth and intercellular signaling cell surface receptors
- Role of NSAIDS in inflammation
- Cellular changes in radiation injury and its manifestations

Homeostasis

- Role of Endothelium in thrombo - genesis
- Arterial and venous thrombi
- Disseminated Intravascular Coagulation

Shock

- Pathogenesis of hemorrhagic, neurogenic, septic, cardiogenic shock, circulatory disturbances, ischemic hyperemia, venous congestion, edema, infarction
- Chromosomal Abnormalities:
 - Marfan's syndrome
 - Ehler's Danlos Syndrome
 - Fragile X Syndrome

Hypersensitivity:

- Anaphylaxis
- Type II Hypersensitivity
- Type III Hypersensitivity
- Cell mediated Reaction and its clinical importance
- Systemic Lupus Erythmatosus
- Infection and infective granulomas

Neoplasia:

- Classification of Tumors
- Carcinogenesis & Carcinogens - Chemical, Viral and Microbial
- Grading and Staging of Cancer, tumor Angiogenesis, Paraneoplastic Syndrome
- Spread of tumors
- Characteristics of benign and malignant tumors

Others:

- Sex linked agamaglobulinemia
- AIDS
- Management of Immune deficiency patients requiring surgical procedures
- De George's Syndrome
- Ghons complex, post primary pulmonary tuberculosis - pathology and pathogenesis

Pharmacology:

1. Definition of terminologies used
1. Dosage and mode of administration of drugs
3. Action and fate of drugs in the body
4. Drugs acting on the CNS
5. Drug addiction, tolerance and hypersensitive reactions
6. General and local anesthetics, hypnotics, analeptics, and & tranquilizers

1. Administration of oxygen and life saving drugs to the patients

3. Performing basic CPR and certification by Red Cross

3rd Year

All the above

Performed independently-Case history: Routine cases -25

Interesting Cases - 25

Intra - oral Radiographs - 100

Periapical view - 50

Bitewing view - 25

- Occlusal view - 25

Extra-oral radiographs of different views - 50

Monitoring Learning Progress

It is essential to monitor the learning progress to each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring to be done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects.

5. TEACHING LEARNING METHODS (including Clinical Study)

(a) LECTURES:

There shall be some didactic lectures in the speciality and in the allied fields. The departments shall encourage guest lectures in the required areas and integrated lectures by multi-disciplinary teams on selected topics, to strengthen the training programmes.

(b) JOURNAL REVIEW:

The journal review meetings shall be held at least once a week. All trainees, associate and staff associated with the post-graduate programme are expected to participate actively and enter relevant details in the logbook. The trainee shall make presentations from the allotted journals of selected articles.

(c) SEMINARS:

The seminars shall be held at least twice a week in each department. All trainees are expected to participate actively and enter relevant details in logbook.

(d) SYMPOSIUM:

It is recommended to hold symposium on topics covering multiple disciplines.

(e) **CLINICAL POSTINGS:**

Each trainee shall work in the clinics on regular basis to acquire adequate professional skills and competency in managing various cases.

(f) **CLINICO-PATHOLOGICAL CONFERENCE:**

The clinico pathological conference shall be held once a month involving the faculties of Oral Medicine and Radiology, Oral Pathology and allied clinical departments. The trainees shall be encouraged to present the clinical details, radiological and histo-pathological interpretations and participation in the discussions.

(g) **INTER-DEPARTMENTAL MEETINGS:**

To encourage integration among various specialities, there shall be inter-departmental meeting chaired by the Dean with all heads of post-graduate departments at least once a month.

(h) **TEACHING SKILLS:**

All the trainees shall be encouraged to take part in undergraduate teaching programmes either in the form of lectures or group discussion.

(i) **DENTAL EDUCATION PROGRAMMES:**

Each department shall organise dental education programmes on regular basis involving other institutions. The trainees shall also be encouraged to attend such programmes conducted outside their university or institute.

(j) **CONFERENCES/WORKSHOPS/ADVANCED COURSES:**

The trainees shall be encouraged to attend conference/workshops/advanced courses and also to present at least two scientific papers and two posters at State/national level speciality and allied conferences/conventions during the training period.

(k) **ROTATION AND POSTING IN OTHER DEPARTMENTS:**

To bring in more integration among the specialities and allied fields, each department shall workout a programme to rotate the trainees in related disciplines.

6. Structured Training Programme – Clinical Postings yearwise Rotations and Posting in other Departments/institutions.

To bring in more integration among the specialities and allied fields, departments shall workout a programme to rotate All Post Graduate students. They should be posted in following departments for 15 days in 2nd year of training period on Rotation basis to acquire clinical and Diagnostic skills.:

Oral and Maxillofacial Surgery (15 days)

Oral and Maxillofacial Pathology (15 days)