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

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 courseto

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

B.D.S. - DEGREE COURSE

FINAL YEAR SUBJECTS

12. ORAL MEDICINE AND RADIOLOGY

1. **GOAL**

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

2. **OBJECTIVES**

a. Knowledge and Understanding :

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

b. Skills :

i. Able to diagnose and manage various common dental problems encountered in general dental practice, keeping in mind the expectations and the right of the society to receive the best possible treatment available wherever possible.
ii. Acquire skill to prevent and manage complications if encountered while carrying out various dental surgical and other procedures.

iii. Possess skill to carry out required investigative procedures including clinical and radiological investigations and ability to interpret laboratory findings.
iv. Promote oral health and help to prevent oral diseases wherever possible.
v. Accurate planning of treatment
vi. Competent in control of pain and anxiety during dental treatment.

c. Attitude:

A graduate should develop during the training period the following attitudes.
i. Willing to apply current knowledge of dentistry in the best interest of the patients and the community.
ii. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
iii. Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.
iv. Willingness to participate in the continuing education programmes to update knowledge and professional skills from time to time.
v. To help and to participate in the implementation of national health programmes.

d. Integration:

From the integrated teaching, the student shall be able to describe the various signs and symptoms and interpret the clinical manifestation of disease processes.
Horizontal integration can be done in common with basic science departments, and vertical integration can be done with clinical departments.

e. Knowledge about infection and cross infection in dentistry:

Knowledge about asepsis – disinfection and sterilization of instruments, clinical area/ personal care as per universal protection, and disposal of medical wastes in the appropriate modes. Students should be aware of the rules and regulations pertaining to maintenance of clinical set up and waste disposal.

f. Computer Proficiency:

Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes. Basic operative skills in analysis of data and knowledge of multimedia. Students should utilize a combination of traditional classroom courses, and online courses. The following validation is required and must be completed.

i. Technological Requirements for all Graduate Students
ii. A laptop or desktop computer that supports the following requirements
    a. Operating system requirements
    b. Internet browser requirements
    c. Reliable and consistent access to the internet
    d. Antivirus software which is current and consistently updated
    e. Microsoft Office
    f. Adobe Reader (or equivalent to view PDF files)

3. **COMPETENCIES**

1. General skills
2. Practice Management
3. Communication and Community Resources
4. Patient Care – Diagnosis
5. Patient Care - Treatment Planning
6. Competencies specific to the subject

- Should be able to Identify precancerous and cancerous lesions of the oral cavity and refer to the concerned speciality for their management
- Should have an adequate knowledge about common laboratory investigation and Interpretation of their results.
- Should have adequate knowledge about medical complications that can arise while treating systemically compromised patients and take prior precautions, consent from the concerned medical specialists.
- Have adequate knowledge about radiation health hazards, radiation safety and protection.
- Competent to take intra-oral radiographs and interpret the radiographic findings
- Gain adequate knowledge of various extra-oral radiographic procedures, TMJ radiography And Sialography
- Be aware of the importance of intra- and extra-oral radiograph in forensic identification and age estimation

- Should be familiar with jurisprudence, ethical and understand the significance or dental records with respect to law

4. **TEACHING HOURS**

MINIMUM WORKING HOURSE FOR SUBJECT OF STUDY

Subject	Lecture Hours	Clinical Hours	Total Hours
Oral Medicine and Radiology	65	170	235

Minimum Working Hours- 3rd BDS

Subject	Lecture Hours	Clinical Hours	Total Hours
Oral Medicine and Radiology	20	70	90

Minimum Working Hours- 4th BDS

Subject	Lecture Hours	Clinical Hours	Total Hours
Oral Medicine and Radiology	45	100	145

Forensic Odontology shall be covered in the department of Oral Pathology and Oral Medicine during 3rd Year BDS and Final BDS Respectively

5. **TEACHING METHODOLOGY**

Interactive and Group teaching, Demonstrations and Teaching with LCD (Advanced audiovisual System), microphone and facilities for slide, overhead and multi-media projection

The objectives of teaching Oral Medicine and Radiology can be achieved by various teaching techniques such as :
a) Lectures

b) Lecture Demonstrations
c) Practical exercises
d) Audio visual aids
e) Small group discussions with regular feed back from the students
f) Integrated Teaching
g) Symposium and continuing medical education programmes.

6. **THEORY SYLLABUS**

III BDS ORAL MEDICINE AND RADIOLOGY
PRACTICALS: 70 HOURS THEORY: 20 HOURS
III YEAR ORAL MEDICINE THEORY
SYSTEMIC PHARMACOLOGY

TOPIC	MUST KNOW	DESIRABLE TO KNOW	NICE TO KNOW
Oral medicine and diagnostic aids Diagnostic Methods	(1) Definition and importance of Diagnosis and various types of diagnosis (2) Method of clinical examinations. (a) General Physical examination by inspection. (b) Oro-facial region by inspection, palpation and other means (c) To train the students about the importance, role, use of saliva and techniques of diagnosis of saliva as part of oral disease (d) Examination of lesions like swellings, ulcers, erosions, sinus, fistula, growths, pigmented lesions, white and red patches (e) Examination of lymph nodes (3) Investigations (a) Biopsy and exfoliative cytology (b) Hematological, Microbiological and other tests and investigations necessary for diagnosis and prognosis		

Diagnosis, Differential Diagnosis	(1) Teeth: Developmental abnormalities, causes of destruction of teeth and their sequelae and discoloration of teeth (2) Inflamation - Injury, infection and spread of infection, fascial space infections, osteoradionecrosis. (3) Temparomandibular joint: Developmental abnormalities of the condyle. Rheumatoid arthritis, Osteoarthritis, Subluxation and luxation. (4) Periodontal diseases: Gingival hyperplasia, gingivitis, periodontitis, pyogenic granuloma (5) Common cysts and Tumors:		
Common cysts and Tumors: (I)CYSTS:	• Cysts of soft tissue: Mucocele and Ranula • Cysts of bone: Odontogenic and nonodontogenic.		
(II)TUMORS:	Soft Tissue: • Epithelial: Papilloma, Carcinoma, Melanoma • Connective tissue: Fibroma, Lipoma, Fibrosarcoma • Vascular·: Haemangiorna, Lymphangioma • Nerve Tissue: Neurofibroma, Traumatic Neuroma, Neurofibromatosis • Salivary Glands: Pleomorphic adenoma, Adenocarcinoma, Warthin's Tumor, Adenoid cystic carcinoma.		
Teeth	Developmental abnormalities, causes of destruction of teeth and their sequelae and discoloration of teeth		
Inflamation	Injury, infection and sperad of infection, fascial space infections, osteoradionecrosis.		
Temparomandibular joint	Developmental abnormalities of the condyle. Rheumatoid arthritis, Osteoarthritis, Subluxation and luxation.		

Periodontal diseases	Gingival hyperplasia, gingivitis, periodontitis, pyogenic granuloma		
Common cysts and Tumors: CYSTS:	Cysts of soft tissue: Mucocele and Ranula Cysts of bone: Odontogenic and nonodontogenic.		
Soft Tissue:	• Epithelial: Papilloma, Carcinoma, Melanoma • Connective tissue: Fibroma, Lipoma, Fibrosarcoma • Vascular: Haemangioma, Lymphangioma • Nerve Tissue: Neurofibroma, Traumatic Neuroma, Neurofibromatosis • Salivary Glands: Pleomorphic adenoma, Adenocarcinoma, Warthin's Tumor, Adenoid cystic carcinoma.		
Hard Tissue:	• Non Odontogenic: Osteoma, Osteosarcoma, Osteoclastoma, Chondroma, Chandrosarcoma, Central giant cell rumor, and Central haemangioma • Odontogenic: Enameloma, Ameloblastoma, Calcifying Epithelial Odontogenic tumor, Adenomatoid Odontogenic tumor, Periapical cemental dysphasia and Odontomas		
Oral medicines and therapeutics Bacterial	Streptococcal, tuberculosis, syphillis, vincents, leprosy, actinomycosis, diphtheria and tetanus Fungal: Candida albicans		
Virus	Herpes simplex, herpes zoster, ramsay hunt syndrome, measles, herpangina, mumps, infectious mononucleosis, AIDS and hepatitis-B		
Important common mucosal lesions	• White lesions: Chemical burns, leukodema, leukoplakia, fordyce spots, stomatitis nicotina palatinus, white sponge nevus,		

	candidiasis, lichen planus, discoid lupus erythematosis • Veiculo-bullous lesions: Herpes simplex, herpes zoster, herpangina, bullous lichen planus, pemphigus, cicatricial pemphigoid erythema multiforme. • Ulcers: Acute and chronic ulcers Pigmented lesions: Exogenous and endogenous • Red lesions: Erythroplakia, stomatitis venenata and medicamentosa, erosive lesions and denture sore mouth. • Cervico-facial lymphadenopathy		
Facial pain: Organic pain:	Pain arising from the diseases of orofacial tissues like teeth, pulp, gingival, periodontal tissue, mucosa, tongue, muscles, blood vessels, lymph tissue, bone, paranasal sinus, salivary glands etc., Tongue in local and systemic disorders: (Aglossia, ankyloglossia, bifid tongue, fissured tongue, scrotal tongue, macroglossia, microglossia, geographic tongue, median rhomboid glossitis, depapillation of tongue, hairy tongue, atrophic tongue, reactive lymphoid hyperplasia, glossodynia, glossopyrosis, ulcers, white and red patches etc.)		
Oral manifestations of: (i) Metabolic disorders:	a) Porphyria (b) Haemochromatosis (c) Histocytosis X diseases		
(ii) Endocrine disorders:	(a) Pituitary: Gigantism, acromegaly, hypopitutarism (b) Adrenal cortex: Addison's disease (Hypofunction) Cushing's syndrome (Hyperfunction) (c) Parathyroid glands: Hyperparathyroidism. (d) Thyroid gland: (Hypothyroidism) Cretinism,		

	myxedema (e) Pancreas: Diabetes		
(iii) Nutritional deficiency:	Vitamins: riboflavin, nicotinic acid, folic acid Vitamin B12, Vitamin C (Scurvy)		
(iv) Blood disorders:	(a) Red blood cell diseases Deficiency anemias: (Iron deficiency, plummer – vinson syndrome, pernicious anemia) Haemolytic anemias: (Thalassemia, sickle cell anemia, erythroblastosis fetalis) Aplastic anemia, Polycythemia (b) White Blood cell diseases Neutropenia, cyclic neutropenia, agranulocytosis, infectious mononeucleosis and leukemias (c) Haemorrhagic disorders: Thrombocytopenia, purpura, hemophillia, chrismas disease and von willebrand's disease		
Disease of salivary glands:	(i) Development distrubances: Aplasia, atresia and aberration (ii) Functional disturbances:Xerostomia, ptyalism (iii) Inflammatory conditions: Nonspecific sialadenitis, mumps, sarcoidosis, heerdfort's syndrome (Uveoparotid fever), Necrotising sialometaplasia (iv) Cysts and tumors: Mucocele, ranula, pleomorphic adenoma, mucoepidermoid carcinoma (v) Miscellaneous: Sialolithiasis, Sjogren's syndrome, mikuliez's disease and sialosis		
Dermatological diseases with oral manifestations:	(a)Ectodermal dysplasia (b)Hyperkerotosis palmarplantaris with periodontopathy (c)Scleroderma (d)Lichen planus including ginspan's syndrome (e)Lupus erythematosus		

	(f)Pemphigus (g)Erythema multiforme (h)Psoriasis (8) Immunological diseases with oral manifestations (a) Leukemia (b) Lymphomas (c) Multiple mycloma (d) AIDS clinical manifestations, opportunistic infections, neoplasms (e) Thrombcytopenia (f) Lupus erythematosus (g) Scleroderma (h) dermatomyositis (i) Submucous fibrosis (j) Rhemtoid arthritis (k) Recurrent oral ulcerations including behcet's syndrome and reiter's syndrome		
Allergy:	Local allergic reactions, anaphylaxis, serum sickness (local and systemic allergic manifestations to food drugs and chemicals)		
Foci of oral infection and their ill effects on general health			
Management of dental problems in medically comrpomised persons:	i) Physiological changes: Puberty, pregnancy and menopause (ii) The patients suffering with cardiac, respiratory, liver, kidney and bleeding disorders, hypertension, diabetes and AIDS. Post-irradiated patients.		
	Precancerous lesions and conditions		
	Neuralgic pain due to unknown causes: Trigeminal neuralgia		
	Myofacial Pain Dysfunction Syndrome (MPDS), Bell's		

	palsy		
Diseases of bone and Osteodystrophies:		• Development disorders: Anomalies, Exostosis and tori, infantile cortical hyperostosis, osteogenisis imperfecta, Marfans syndrome, osteopetrosis. Metabolic disorders – Histiocytosis • Endocrine – Acro-megaly and hyperparathyroidism Miscellaneous – Paget's disease, Mono and polyostotic fibrous dysplasia, Cherubism. • Granulomatous diseases: Tuberculosis, Sarcoidosis, Midline lethal granuloma, Crohn's Disease and Histiocytosis X • Miscellaneous Disorders: Burkitt lymphoma, sturge – Weber syndrome, CREST syndrome, renduosler-weber disease	
Pain arising due to C.N.S. diseases:		(a) Pain due to intracranial and extracranial involvement	

		of cranial nerves. (Multiple sclerosis, cerebrovascular diseases, trotter's syndrome etc.) (b) Neuralgic pain due to unknown causes:, glossopharyngeal neuralgia, sphenopalatine ganglion neuralgia, periodic migrainous neuralgia and atypical facial pain (c) Referred pain: Pain arising from distant tissues like heart, spine etc (d) Altered sensations: paresthesia, halitosis	

Nerve and muscle diseases:		(i) Nerves: (a) Neuropraxia (b) Neurotemesis (c) Neuritis (d) Facial nerve paralysis including Heerfordt's syndrome, Melkerson Rosenthel syndrome and ramsay hunt syndrome (e) Neuroma (f) Neurofibromatosis (g) Frey'syndrome (ii) Muscles: (a) Myositis ossificans (b) Myofascial pain dysfunction syndrome (c) Trismus	
Therapeutics		• General therapeutic measures – drugs commonly used in oral medicine viz., antibiotics, chemotherapeutic agents, anti-inflammatory and analgesic drugs, astringents, mouth washes, styptics, demelucents, local surface anaesthetic, sialogogues, antisialogogues and	

		drugs used in the treatment of malignancy	
Recent advancements in Field of Oral Medicine and Oral Diagnosis Clinical significance of laboratory values Forensic examination			Procedures for post-mortem dental examination; maintaining dental records and their use in dental practice and post-mortem identification; jurisprudence and ethics Forensic odontology: (a) Medicolegal aspects of orofacial injuries (b) Identification of bite marks (c) Determination of age and sex (d) Identification of cadavers by dental appliances, Restorations

			and tissue remanants
ORAL RADIOLOGY Scope of the subject and history of origin			
Physics of radiation:	(a) Nature and types of radiations (b) Source of radiations (c) Production of X-rays (d) Properties of X-rays (e) Compton effect (f) Photoelectric effect (g) Radiation measuring units		
Biological effects of radiation			
Radiation safety and protection measures			
Principles of image production			
Radiographic techniques	(i) Intra-Oral: (a) Periapical radiographs (Bisecting and parallel technics) (b) Bite wing radiographs (c) Occlusal radiographs (ii) Extra-oral: (a) Lateral projections of skull and jaw bones and paranasal sinuses (c) Cephalograms (d) Orthopantomograph (e) Projections of temperomandibular joint and condyle of mandible (f) Projections for Zygomatic arches (iii) Specialised techniques: (a) Sialography		

	(b) Xeroradiography (c) Tomography		
Factors in production of good radiographs:	(a) K.V.P. and mAs of X-ray machine (b) Filters (c) Collimations (d) Intensifying screens (e) Grids (f) Xray films (g) Exposure time (h) Techniques (i) Dark room (j) Developer and fixer solutions (k) Film processing		
Radiographic normal anatomical landmarks			
Faculty radiographs and artefacts in radiographs			
Interpretation of radiographs in various abnormalities of teeth, bones and other orofacial tissue.			
		Principles of radiotherapy of orofacial malignancies and complications of radiotherapy Contrast radiography and basic knowledge of radio-active isotopes	
Radiography in			Radiographic

Forensic Odontology			age estimation and post-mortem radiographic methods Recent advancements in Field of Oral and Maxillofacial Radiology

Bioethics

Bioethics is the application of ethics to the field of medicine and healthcare. Bioethics includes medical ethics, which focuses on issues in health care; research ethics, which focuses issues in the conduct of research; environmental ethics, which focuses on issues pertaining to the relationship between human activities and the environment, and public health ethics.

7. **PRACTICALS/ CLINICS**

Orientation Postings in Oral Medicine and Radiology
Introduction to clinical armamentarium
Demonstration of Patient registration
Orientation and visit to paramedical departments like Laboratory and Pharmacy
Writing of case sheets
Methods of arriving at Diagnosis
Treatment planing
Follow up
Demonstration of Intraoral, extraoral and Digital radiography
Training in Radiation protection methods
Interpretation of Pathology

Student should undergo Basic Life Support and Biomedical waste management training

8. **THEORY EXAMINATION (3 Hours)**

Elaborate on 2 X 10 = 20 marks
Write Notes on 10X 5 = 50 marks
---
70 marks
---

9. **PRACTICAL / CLINICAL EXAMINATIONS**

I. Clinicals in Oral Medicine: 60 Marks (recording of Long Case)
   a. Case History taking : 30 Marks
   b. Diagnosis & Differential Diagnosis: 10 Marks
   c. Investigations : 10 Marks
   d. Management : 10 Marks

II. Clinicals in Radiology: 30 Marks (One Intra Oral Periapical Radiograph to be taken)
   a. Technique: 10 Marks
   b. Processing: 10 Marks
   c. Interpretation: 10 Marks

Viva 20 Marks

	Examination	Internal Assessment	Viva	Total
Theory	70	10	20	100
Practicals	90	10	-	100
Total				200

10. FORMATIVE/INTERNAL ASSESSMENT

The continuing assessment examination (both Theory/Practical) held at least 3times in a particular year and best of two examinations should be considered. The Internal Assessment marks to be submitted to the University, once in every three months. The marks scored by the students shall be displayed on the Notice board and a copy forwarded by HOD shall be sent to the University once in every 3 months of which shall be sent to the University once in every 3months after obtaining signature from the candidate and faculty and forwarded by HOD.

11. RECORD NOTE /LOG BOOK:

Record shall be maintained and assessed periodically by faculty and HOD. Institution shall provide adequate number of cases/teaching materials as specified in Dental Council of India regulation for the students during clinical/practical training and examinations.

12. TEXT BOOKS

1. Burket's Oral Medicine 12th Edition
2. Differential Diagnosis of Oral and Maxillofacial Lesions, 5e.(Norman K Wood , Paul W Goaz)
3. White and Pharoah, Oral Radiology Principles and Interpretation: First South Asia Edition
4. Essentials of Dental Radiography and Radiology, 4e. by Eric Whaites
5. Oral and Maxillolfacial Pathology: First South Asia Edition by Neville
6. Shafer's Textbook of Oral Pathology - 8th Edition

13. REFERENCE BOOKS

a) Oral Diagnosis, Oral Medicine & Oral Pathology

i. Burkit – Oral Medicine – J.B. Lippincott Company
ii. Principles of Oral Diagnosis, Coleman, Mosby Year Book
iii. Oral Manifestations of Systemic Diseases, Jones, W.B. Saunders company
iv. Oral Diagnosis & Oral Medicine, Mitchell
v. Oral Diagnosis, Kerr
vi. Oral Diagnosis & Treatment ,Miller
vii. Clinical Methods, Hutchinson

viii. Oral Pathology, Shafers
ix. Principles and practice of Oral Medicine, Sonis.S.T., Fazio.R.C. and Fang.L

b) Oral Radiology
i. Oral Radiology White & Goaz, Mosby year Book
ii. Dental Radiology, Weahrman,C.V. Mosby Company
iii. Oral Roentgenographs Diagnosis, Stafne ,W.B. Saunders Co
iv. Fundementals of Dental radiology, Sikri, CBS Publishing.

(c) Forensic Odontology
i. Practical Forensic Odontology, Derek H. Clark ,Butterworth-Heinemann
ii. Manual of Forensic Odontology, C Michael Bowers, Gary Bell

14. CRI POSTING SCHEDULE AND ORIENTATION

1. Standardized examination of patients	25 cases
2. Exposure to clinical, pathological laboratory procedures and biopsies	5 cases
3. Effective training in taking of Radiographs	2 full month
(Intra-oral)I.O. (Extra oral) E.O.	1
Cephalogram	1
4. Effective management of cases in wards	2 cases

Period of Postings
Oral Medicine & Radiology - 1 Month

13. PAEDIATRIC AND PREVENTIVE DENTISTRY

1. **GOAL**

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

2. **OBJECTIVES**

a. Knowledge and understanding:

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

b. Skills:

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

- Diagnose and manage various common dental problems encountered in general dental practice keeping in mind the expectations and the right of' the society to receive the best possible treatment available wherever possible.
- Prevent and manage complications if encountered while carrying out various surgical and other procedures.
- Carry out certain investigative procedures and ability to interpret laboratory findings.

- Promote oral health and help prevent oral diseases where possible.
- Control pain and anxiety among the patients during dental treatment**.**

c. Attitude:

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

- Willingness to apply the current knowledge of dentistry in the best interest of the patient and community.
- Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
- Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.
- Willingness to participate in the CPED Programmes to update knowledge and professional skill from time to time.
- Help and participate in the implementation of the national oral health policy

d. Integration:

A graduate should have good knowledge and should be able to apply the different concepts and manage the patient as a whole.

e. Knowledge about Infection and cross infection in dentistry:

Knowledge about asepsis – disinfection and sterilization of instruments, clinical area/ personal care as per universal protection, and disposal of medical wastes in the appropriate modes. Students should be aware of the rules and regulations pertaining to maintenance of clinical set up and waste disposal.

f. Computer proficiency:

Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes. Basic operative skills in analysis of data and knowledge of multimedia. Students should utilize a combination of traditional classroom courses, and online courses. The following validation is required and must be completed.

i. Technological Requirements for all Graduate Students
ii. A laptop or desktop computer that supports the following requirements
    a. Operating system requirements
    b. Internet browser requirements

c. Reliable and consistent access to the internet
d. Antivirus software which is current and consistently updated
e. Microsoft Office
f. Adobe Reader (or equivalent to view PDF files)

3. **COMPETENCIES**

1. General skill
2. Practice Management
3. Communication and Community Resources
4. Patient Care – Diagnosis
5. Patient Care - Treatment Planning
6. Competencies specific to the subject
    - Able to instill a positive attitude and behaviour in children towards oral health and understand the principles of prevention and preventive dentistry- right from birth to adolescence.
    - Able to guide and counsel the guardian/parents with regard to various treatment modalities including different facets of preventive dentistry.
    - Able to treat dental diseases occurring in the child patient.
    - Able to manage t physically and mentally challenged/disabled children effectively and efficiently, tailored to the needs of individual requirement and conditions.

4**. TEACHING HOURS**

	Lecture Hours	**Clinical Hours**
Third BDS	20	70
Fourth BDS	45	100
Total	65	170

5. **TEACHING METHODOLOGY**

- Lectures- powerpoint presentations,ohp sheets,interactive sessions
- Seminars
- Evaluation of clinical skills during their practical hours
- CDE programs

- Evaluation of clinical case presentations

6. **THEORY SYLLABUS**

Topic	MUST KNOW	DESIRABLE TO KNOW	NICE TO KNOW
1. Introduction to Pedodontics And Preventive Dentistry.	Definition, Scope, Objectives And Importance		
2. Growth And Development	• Importance of Study of Growth and Development In Pedodontics • Prenatal and Postnatal Factors In Growth and Development • Theories Of Growth And Development • Development Of Maxilla And Mandible and Related Age Changes		
3. Development of Occlusion From Birth Through Adolescence	Study Of Variations And Abnormalities		
4. Dental Anatomy And Histology	• Development of Teeth and Associated Structures • Eruption and Shedding of Teeth • Teething Disorders and their Management • Chronology Of Eruption Of Teeth • Differences Between Deciduous And Permanent Teeth • Importance Of First Permanent Molar		
5. Dental Radiology	Dental Radiology Related To Pedodontics		

Related To Pedodontics			
6. Oral Surgical Procedures In Children	• Indications And Contraindications of Extractions Of Primary And Permanent Teeth In Children • Knowledge Of Local And General Anesthesia • Minor Surgical Procedures In Children		
7. Dental Caries	• Historical Background • Definition, Etiology And Pathogenesis • Caries Pattern In Primary, Young Permanent And Permanent Teeth In Children • Rampant Caries, Early Childhood Caries and Extensive Caries: Definition, Etiology, Pathogenesis, Clinical Features, Complications And Management • Role of Diet and Nutrition In Dental Caries • Dietary Modifications and Diet Counseling • Caries Activity Tests, Caries Prediction, Caries Susceptibility And Their Clinical Application		
8. Gingival And Periodontal Diseases In Children	• Normal Gingiva and Periodontium In Children • Definition, Etiology and Pathogenesis • Prevention And Management of Gingival and Periodontal Diseases		
9. Child Psychology	• Definition		

	• Theories of Child Psychology • Psychological Development of Children With Age • Principles of Psychological Growth and Development While Managing Child Patient • Dental Fear And Its Management • Factors Affecting Child's Reaction To Dental Treatment		
10. Behaviour Management	• Definitions • Types of Behavior Encountered In The Dental Clinic • Non-Pharmacological And Pharmacological Methods Of Behavior Management		
11. Pediatric Operative Dentistry	• Principles of Pediatric operative Dentistry • Modifications Required For Cavity Preparation In Primary And Young Permanent Teeth • Various Isolation Procedures • Restorations Of Decayed Primary, Young Permanent And Permanent Teeth In Children Using Various Restorative Materials Like Glass Ionomer, Composites And Silver Amalgam. • Stainless Steel, Polycarbonate And Resin Crowns		
12. Pediatric Endodontics	• Principles And Diagnosis • Classification Of Pulpal Pathology In Primary, Young Permanent And Permanent Teeth		

	• Management of Pulpally Involved Primary, Young Permanent and Permanent Teeth: Direct And Indirect Pulp Capping, Pulpotomy, Pulpectomy, Apexogenesis And Apexification • Obturation Techniques And Materials Used For Primary, Young Permanent and Permanent Teeth In Children		
13. Traumatic Injuries In Children	• Classification And Importance • Sequelae And Reaction of Teeth To Trauma • Management Of Traumatized Teeth		
14. Preventive and Interceptive Orthodontics	• Definitions • Problems Encountered During Primary and Mixed Dentition Phases and their Management • Serial Extractions • Space Management		
15. Oral Habits In Children	• Definition, Etiology And Classification • Clinical Features Of Digit Sucking, Tongue Thrusting, Mouth Breathing and Various Secondary Habits • Management Of Oral Habits In Children		
16. Dental Care Of Children With Special Needs	Definition, Etiology, Classification, Behavioural and Clinical Features and Management of Children With: Physically Handicapping Conditions, Mentally Handicapping Conditions, Medically Compromising Conditions And Genetic Disorders.		
17. Congenital	Definition, Classification, Clinical Features And		

Abnormalities In Children	Management		
18. Dental Emergencies In Children And Their Management	Dental Emergencies In Children and their Management		
19. Dental Materials Used In Pediatric Dentistry	Dental Materials Used In Pediatric Dentistry		
20. Preventive Dentistry	• Definition • Principles And Scope • Types Of Prevention • Different Preventive Measures Used In Pediatric Dentistry Including Pit and Fissure Sealants and Caries Vaccine		
21. Dental Health Education And School Dental Health Programs	Dental Health Education And School Dental Health Programs		
22. Fluorides	• Historical Background • Systemic And Topical Fluorides • Mechanism Of Action • Toxicity And Management • Defluoridation Techniques		
23. Case History Recording	Outline Of Principles Of Examination, Diagnosis And Treatment Planning		
24. Setting up of Pedodontics Clinic		• Genetics • Growth and development with regard to advanced theory and its applications to	• Pediatric dental implants in children • Applications of lasers in pediatric Dentistry • Regenerative

		patient management • Management of child abuse and neglect • Modifications of spacemaintainers and space management in children • Advanced Oral surgical considerations in young child • Advanced behavior management strategies • Ethics- Introduction, ethics of an individual, profession ethics, research ethics, gathering all scientific factors, gathering all value factors, identifying areas of value conflict, setting of priorities and working our criteria towards decisions.	Endodontics for primary teeth • Orthopaedic appliances for children • Management and Corrective surgical procedures for children with cleft lip and palate

Bioethics

Bioethics is the application of ethics to the field of medicine and healthcare. Bioethics includes medical ethics, which focuses on issues in health care; research ethics, which focuses issues in the conduct of research; environmental ethics, which focuses on issues pertaining to the relationship between human activities and the environment, and public health ethics.

7. PRACTICALS

Following is the recommended clinical quota for under-graduate students in the subject of pediatric& preventive dentistry,

1. Restorations - Class I & II only : 45
2. Preventive measures e.g. Oral Prophylaxis - 20
3. Fluoride applications - 10
4. Extractions - 25
5. Case History Recording & Treatment Planning – 10
6. Education & motivation of the patients using disclosing agents. Educating patients about oral hygiene measures like tooth brushing, flossing etc.

8. THEORY EXAMINATION (3 Hours)

Elaborate on 2 x 10 = 20 Marks
Write notes on 10 x 5 = 50 Marks
---
70 Marks
_____

9. PRACTICAL EXAMINATION- (90 marks)

MANAGEMENT OF CHILD PATIENT IN THE DENTAL CLINIC
Case history - 30 marks
Diagnosis - 20 marks
Treatment plan - 10 marks
Treatment - 30 marks

	Examination	Internal Assessment	Viva	Total
Theory	70	10	20	100
Practicals	90	10	-	100
Total				200

10. FORMATIVE /INTERNAL ASSESSMENT:

The continuing assessment examination (both Theory/Practical) held at least 3times in a particular year and best of two examinations should be considered. The Internal Assessment marks to be submitted to the University, once in every three months. The marks scored by the students shall be displayed on the Notice board and a copy forwarded by HOD shall be sent to the University once in every 3 months.

Theory Internal assessment - 10 Marks
Practical Internal assessment -10 Marks

To assess the clinical knowledge of the student and to understand their ability to manage child patients efficiently.

11. RECORD NOTE/LOG BOOK

Record shall be maintained and assessed periodically by faculty and HOD. Institution shall provide adequate number of cases/teaching materials as specified in Dental Council of India regulation for the students during clinical/practical training and examinations.

12. TEXT BOOKS

1. Pediatric Dentistry (Infancy through Adoleseences) - Pinkharn.
2. Clinical Use of Fluorides - Stephen H. Wei.
3. Understanding of Dental Caries - NikiForuk.
4. Handbook of Clinical Pedodonties - Kenneth. D.

5. Dentistry for the Child and Adolescence - McDonald.
6. Pediatric Dentistry -Damle S. G.
7. Behaviour Management - Wright
8. Traumatic Injuries - Andreason.
9. Textbook of Pedodontios – ShobhaTandon

13. REFERENCE BOOKS

1. Paediatric Dentistry (Infancy through Adolescences) – Pinkham.
2. Kennedy's Pediatric Operative Dentistry - Kennedy & Curzon.
3. Occlusalguidaince in Paediatric Dentistry -- Stephen H. Wei.
4. Clinical Use of Fluorides - Stephen H. Wei.
5. Paediatric Oral & Maxillofacial Surgery - Kaban.
6. Paediatric Medical Emergencies - P. S. Whatt.
7. Understanding of Dental Caries – Niki Forutk.
8. An Atlas of Glass lonomer cements - G. J. Mount.
9. Clinical Pedodontics - Finn.
10. Textbook of Pediatric Dentistry - Braham Morris.
11. Primary Preventive Dentistry - Norman 0. Harris
12. Handbook of Clinical Pedodontics – Kenneth.D
13. Preventive Dentistry - Forrester.
14. The Metabolism and Toxicity of Fluoride Garry M. Whitford.
15. Dentistry for the Child and Adolescent – Mc. Donald.
16. Pediatric Dentistry – Damle S.G.
17. Behaviour Mangement – Wright.
18. Pediatric Dentistry - Mathewson.
19. Traumatic Injuries – Andreason
20. Occlusal guidance in Pediatric Dentistry - Nakata.
21. Pediatric Drug Therapy - Tomare
22. Contemporary Ortodontics - Profitt.
23. Preventive Dentistry - Depaola.
24. Metabolism & Toxicity. of Fluoride - Whitford. G. M.
25. Endodontic Practice - Grossman.

26. Principles of Endodontics - Munford.
27. Endodontics - Ingle.
28. Pathways of Pulp - Cohen.
29. Management of Traumatized anterior Teeth - Hargreaves.

14. CRI POSTING SCHEDULE AND ORIENTATION

During their posting in Pedodontics the Dental graduates shall perform:

1. Topical application of fluorides including varnish	5Cases
2. Restorative procedures of carious deciduous teeth in Children.	10Cases
3. Pulpotomy	2Cases
4. PuIpectomy	2Cases
5. Fabrication and insertion of space mainteners	1Case
6. Oral habits breaking appliances	1Case

Period of Postings

Pedodontics - 1 Month

14. ORTHODONTICS AND DENTOFACIAL ORTHOPAEDICS

1. **GOAL**

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 professional education in the speciality and allied specialities whether in teaching or practice;
- willing to share the knowledge and skills with any learner, junior or a colleague;
- to develop the faculty for critical analysis and evaluation of various concepts and views and to adopt the most rational approach

2. **OBJECTIVES**

The objective of the Under graduate training is to train a student so as to ensure higher competence in both general and special area of interest and prepare him or her for a career in teaching, research and speciality practice. A student must achieve a high degree of clinical proficiency in the subject and develop competence in research and its methodology in the concerned field. The objectives to be achieved by the candidate on completion of the course may be classified as under :

- Knowledge and Understanding
- Skills
- Attitude
- Knowledge about infections and cross infections in Dental Practice – HIV and Hepatits control
- Computer Proficiency

a. <u>KNOWLEDGE:</u>

(i) Demonstrate understanding of basic sciences relevant to speciality;
(ii) Describe aetiology, 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) 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. SKILLS:

I. take a 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;
II. acquire adequate skills and competence in performing various procedures as required in the speciality.

c. ATTITUDE:

HUMAN VALUES, ETHICAL PRACTICE AND COMMUNICATION ABILITIES.

I. adopt ethical principles in all aspects of practice;
II. foster professional honesty and integrity;
III. deliver patient care irrespective of social status, caste, creed, or religion of the patient;
IV. develop communication skills, to explain various options available and obtain a true informed consent from the patient;
V. provide leadership and get the best out of his team in a congenial working atmosphere;
VI. apply high moral and ethical standards while carrying out human or animal research;
VII. be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed;
VIII. respect patient's rights and privileges including patient's right to information and right to seek a second opinion

d. INTEGRATION:

Students should have a holistic understanding of each of the pathological situation and be able to frame a comprehensive treatment plan and deliver treatment to the limitations of what she/ he is trained and efficient and at the same time refer to the concerned specialists thereafter for opinion / further management .

e. KNOWLEDGE ABOUT INFECTION AND CROSS INFECTION IN DENTISTRY :

Knowledge about asepsis – disinfection and sterilization of instruments, clinical area/ personal care as per universal protection, and disposal of medical wastes in the appropriate modes. Students should be aware of the rules and regulations pertaining to maintenance of clinical set up and waste disposal.

f. COMPUTER PROFICIENCY

Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes. Basic operative skills in analysis of data and knowledge of multimedia. Students should utilize a combination of traditional classroom courses, and online courses. The following validation is required and must be completed.

i. Technological Requirements for all Graduate Students
ii. A laptop or desktop computer that supports the following requirements
    a. Operating system requirements
    b. Internet browser requirements
    c. Reliable and consistent access to the internet
    d. Antivirus software which is current and consistently updated
    e. Microsoft Office
    f. Adobe Reader (or equivalent to view PDF files)

3. **COMPETENCIES**

1. General skills
2. Practice Management
3. Communication and Community Resources
4. Patient Care – Diagnosis
5. Patient Care - Treatment Planning
6. Competencies specific to the subject

4. **TEACHING HOURS**

	Lecture Hours	Clinical Hours
3rd Year	20	70
4th Year	30	100

5**. TEACHING METHODOLOGY**

Use of active methods of learning should be encouraged, which would enable students to develop personality, communication skills and other qualities which are necessary, such as:

1. Group discussions,
2. Seminars,
3. Role play,
4. Field visits,
5. Demonstrations,
6. Peer interactions etc.,

Make maximum efforts to encourage integrated teaching and de-emphasize compartmentalisation of disciplines so as to achieve horizontal and vertical integration in different phases

6. **THEORY SYLLABUS**

Undergraduate program in Orthodontics is designed to enable the qualifying dental surgeon to diagnose, analyse and treat common orthodontic problems by preventive, interceptive and corrective orthodontic procedures. The following basic instructional procedures will be adapted to achieve the above objectives.

TOPIC	MUST KNOW	DESIRABLE TO KNOW	NICE TO KNOW
Growth and Development: In general	1. Definition 2. Growth spurts and differential growth 3. Factors influencing growth and development 4. Methods of measuring growth		

	5. Growth theories (Genetic, Sicher's, Scott's, Moss's, Petrovics, Multifactorial) 6. Genetic and Epigenetic factors in growth 7. Cephalocaudal gradient in growth		
Morphologic development of craniofacial structures	Methods of bone growth Prenatal growth of craniofacial structures Postnatal growth and development of: Cranialbase, Maxilla, Mandible, Dental arches and occlusion.		
Functional development of dental arches and occlusion	Factors influencing functional development of dental arches and occlusion Forces of occlusion Wolfe's law of transformation of bone Trajectories of forces		
Clinical application of growth and development Malocclusion – In general	Concept of normal occlusion Definition of Malocclusion Description of different types of dental, skeletal and functional malocclusion		
Classification of Malocclusion: Principle, description, advantages and disadvantages of classification of malocclusion by Angle's, Simon's, Lischer's and Ackerman and Proffitt's. Normal and abnormal function of	Definition, importance, classification, local and general etiological factors. Etiology of following different types of malocclusion		

Stomatognathic system Aetiology of malocclusion			
Midline diastema Spacing Crowding Cross bite: anterior/posterior Class III malocclusion Class II malocclusion Deep bite Open bite Diagnosis and diagnostic aids	Definition, importance and classification of diagnostic aids Importance of case history and clinical examination in orthodontics Study models: - importance and uses – preparation and prevention of study models Importance of intraoral X-rays in orthodontics Cephalometrics: Its advantage and disadvantage		
Definition Description and use of cephalostat Description and use of anatomic landmarks lines and angles used in cephaometric analysis Analysis – Steiner's, Down's, Tweed's, Ricket's-E-line	Panoramic radiograph- Principles, advantage, disadvantage and uses Electromyography and its uses in orthodontics Wrist X-rays and its importance in orthodontics		
General principles in orthodontic treatment planning of dental and skeletal malocclusion Anchorage in	Different types of tooth movement Tissue response to orthodontic force application Age factor in orthodontic tooth movement		

orthodontics – definition, classification, types and stability of anchorage Biomechanical principles in orthodontic tooth movement			
Preventive orthodontics	Definition Different procedures undertaken in preventive orthodontics and their limitation		
Interceptive orthodontics	Definition Different procedures undertaken in interceptive orthodontics and their limitations Serial extractions: Definition, indication, contra indication, technique, advantages and disadvantages Role of muscle exercises as an interceptive procedures		
Corrective orthodontics	Definition, factors to be considered during treatment planning Model analysis: Pont's, Ashley Howe's, Bolton, Carey's, Moyer's mixed dentition Analysis. Methods of gaining space in the arch: Indications, relative merits and demerits of proximal stripping, arch expansion and extractions, molar distalisation. Extractions in orthodontics- indications and selection of teeth for extraction.		
Orthodontic appliances: General	Requisites for orthodontic appliances Classification, indications of removable and functional appliances Methods of force applications Material used in construction of various orthodontic appliances – uses of		

	stainless steel, technical consideration in curing of acrylic, principles of welding and soldering, fluxes and antifluxes Preliminary knowledge of acid etching and direct bonding		
Ethics in practice of dentistry and patient care Removable Orthodontic Appliances	Components of removable appliances Different types of clasps and their uses Different types of labial bows and their uses Different types of springs and their uses Expansion appliances in orthodontics *Principles *Indications of arch expansion *Descriptions of expansion appliances and different types of expansion devices and their uses *Rapid maxillary expansion		
Fixed Orthodontic Appliances	Definition, Indications and Contraindications Component parts and their uses Basic principles of different techniques: Edgewise, Begg's, straight wire		
Extra Oral Appliances	Headgears Chin cups Reverse pull headgear		
Myo Functional Appliances	Definition and principles Muscle exercises and their uses in orthodontics Functional appliances * Activator, Oral screens, Frankel's functional regulator, Bionator, Twin block, Lip bumper * Inclined planes – upper and lower		
Orthodontic management of Cleft lip and palate Principles of surgical orthodontics	Brief knowledge of correction of : Mandibular Prognathism and Retrognathism Maxillary prognathism and retrognathism Anterior open bite and deep bite Cross bite		
Principles, differential diagnosis	Midline diastema Cross bite Deep bite Open bite Spacing Crowding Class II - Division 1,Division 2		

and the methods of treatment of :	Class III Malocclusion–True and Pseudo class III		
Retention and Relapse	Definition Need for retention Cause of relapse Methods of retention Different types of retention devices Duration of retention Theories of retention		
Clinicals and Practicals in Orthodontics		Model Analysis Pont's Ashley Howe's Carey's Boltons Moyers	
Cephalometric Analysis		Down's Steiners Tweeds	Implants In Orthodontics Cbct – Applications Hand Wrist Xray Tracing Digital Records Orthodontic Clinical Set Up Sterilisation In Orthodontics Soft Wares Applications In Orthodontics Accelerated Orthodontics Adult Orthodontics

Bioethics

Bioethics is the application of ethics to the field of medicine and healthcare. Bioethics includes medical ethics, which focuses on issues in health care; research ethics, which focuses issues in the conduct of research; environmental ethics, which focuses on issues pertaining to the relationship between human activities and the environment, and public health ethics.

7. PRACTICAL TRAINING

1. Discussion of 5 Clinical Cases – Each Of Different Types:
   Dentoalveolar Malocclusion : Class I/II/III Malocclusion With :Proclination/Spacingdeep Bite/Open Bite, Etc
   Skeletal Class II: Growing Individuals Requiring Growth Modification
   Skeletal Class II: Non Growing Requiring Surgical Correction
   Skeletal Class III: Growing Individuals Requiring Growth Modification
   Skeletal Class III: Non Growing Requiring Surgical Correction

2. Fabrication And Delivery Of 5 Removable Appliances
3. Mixed Dentition Analysis
4. Permanent Dentition Space Analysis
5. Demostration Of Welding And Soldering
6. Demostration Of Cephalometric Tracing
7. Demostration Of Fixed appliance

PROCEDURES: practical exercises required to be proficient about as given below
DEMONSTRATION: Teaching faculty should demonstrate each of the exercises and guide students to understand the properties of the components, their use and method of activating and adjusting them when incorporated in the orthodontics appliances.

PRACTICAL EXERCISES REQUIRED TO BE PROFICIENT ABOUT :

- Basic wire bending exercise Gauge 22 or 0.7mm

1. Straightening of wire (4 Nos)
2. Bending of a equilateral triangle
3. Bending of a rectangle
4. Bending of a square
5. Bending of a circle
6. Bending of U.V.

Labial bows:

1. Short labial bow
2. Long labial bow

3. Robert's retractor
4. Split labial bow
5. High labial bow with apron spring

CLASPS:

- Construction of clasps (Both sides upper / lower) Gauge 22 or 0.7mm
- ¾ clasp (C-Clasp)
- Full clasp (Jackson's Crib)
- Adam's clasp
- Triangular clasp

Construction of springs (on upper both sides) Gauge 24 or 0.5mm

A) Finger spring

B) Single cantilever spring

C) Double cantilever spring (Z- spring)

- Construction of canine retractors

A. Buccal canine retractor
B. Helical canine retractor
C. U loop cnine retractor
D. Palatal canine retractor

Appliances:

A. Upper hawley's appliance
B. Upper hawley's appliance with anterior bite plane
C. Upper hawley's appliance
D. With tongue spikes
E. Upper hawley's retainer appliance

8. **THEORY EXAMINATIONS**

Elaborate on 2 X 10 = 20 Marks
Write Notes on 10 X 5 = 50 Marks
---
70 Marks
---

9. **PRACTICAL EXAMINATIONS**

	Marks	Total
1. Clinicals/OSCE/OSPE/Spotters: 10 Stations	10 X 3 Marks	30 Marks
2. Clinical Case Discussion Intra & Extra Oral		
Findings :	10 Marks	
Diagnosis:	10 Marks	
Treatment Plan:	10 Marks	30 Marks
3. Working Skill Wire Bending Skill		
Adam's Clasp:	10 Marks	
Labial Bow :	10 Marks	
Spring :	10 Marks	30 Marks
		90 Marks

	Examination	Internal Assessment	Viva	Total
Theory	70	10	20	100
Practicals	90	10	-	100
Total				200

10. FORMATIVE/INTERNAL ASSESSMENT

The continuing assessment examination (both Theory/Practical) held at least 3times in a particular year and best of two examinations should be considered. The Internal Assessment marks to be submitted to the University, once in every three months. The marks scored by the students shall be displayed on the Notice board and a copy forwarded by HOD shall be sent to the University once in every 3 months.

IA will be based on :

1) wire bending exercise/ assignment completion

2) Attendance in Lab classes and clinical
3) clinical assignment completion on time
4) patient care – ethics , communication, behaviour , responsibility

11. RECORD NOTE / LOG BOOK

Record shall be maintained as per University norms and assessed periodically by faculty and HOD. Institution shall provide adequate number of cases/teaching materials as specified in Dental Council of India regulation for the students during clinical/practical training and examinations.

12. TEXT BOOKS

1. Essentials Of Orthodontics By Neil T Reske
2. Removable Orthodontic Appliances By Philip Adams
3. Text Bookm Of Orthodontics By Samir E Bishara
4. Wire Bending By Dickson
5. Dental Materials By Anu Savice
6. Understanding Orthodontics By Perry
7. Orthodontic Notes By Walter & Houston
8. Handbook Of Facial Growth By Enlow & Hans
9. A Text Book Of Orthodontics By Wjb Houston , Stephans ,Tilley
10. Removable Orthodontic Appliance By Isaacson
11. Principles And Practice Of Orthodontics By J R E Mills

13. **Reference Books**

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

14. CRI POSTING SCHEDULE AND ORIENTATION

A. The internees shall observe the following procedures during their posting in Orthodontics:

1. Detailed diagnostic procedures for 5 patients
2. Laboratory techniques including wire-bending for removable appliances, soldering and processing of myo-functional appliances.
3. Treatment of plan options and decisions.
4. Making of bands, bonding procedures and wire insertions.
5. Use of extra oral anchorage and observation of force values.
6. Retainers.
7. Observe handling of patients with oral habits causing malocclusions.

The dental graduates shall do the following laboratory work:-

1. Wire bending for removable appliances and space maintainers including weldoing and heat treatment procedure. -5Cases
2. Soldering exercises, banding &bonding procedures -2Cases
3. Cold-cure and heat-cure acrylisation of simple Orthodontics appliances -5Cases

Period of Postings
Orthodontics - 1 Month

15. PERIODONTOLOGY

1. **GOAL**

To impart optimal knowledge to the students within the preview of the curriculum designed by the DCI- under the following guidelines-must know – desirable to know –nice to know.

2. **OBJECTIVES**

a. Knowledge and understanding:

To have adequate knowledge and understanding of the basic periodontal tissues, etiology, pathophysiology, diagnosis and treatment planning for various periodontal disease/ problem.

b. Skill:

To chart a proper clinical history after thorough examination of the patient, able to perform diagnostic procedure; able to interpret laboratory investigation; arrive at a provisional / definitive diagnosis regarding the periodontal problem in question.

c. Attitude:

To develop the right attitude to store his knowledge and the willingness to learn newer concept so as to keep pace with current technology and development; also to seek opinion from an allied Medical Dental specialist as and when required.

d. Integration:

From the integrated teaching of other clinical sciences, the students shall be able to describe the various signs, and symptoms and interpret the clinical manifestations of disease processes.

e. Knowledge about infection and cross infection in dentistry:

Knowledge about asepsis – disinfection and sterilization of instruments, clinical area/ personal care as per universal protection, and disposal of medical wastes in the appropriate modes. Students should be aware of the rules and regulations pertaining to maintenance of clinical set up and waste disposal.

f. Computer proficiency :

Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes. Basic operative skills in analysis of data and knowledge of multimedia. Students should utilize a combination of traditional classroom courses, and online courses. The following validation is required and must be completed.

i. Technological Requirements for all Graduate Students
ii. A laptop or desktop computer that supports the following requirements
    a. Operating system requirements
    b. Internet browser requirements
    c. Reliable and consistent access to the internet
    d. Virus software which is current and consistently updated
    e. Microsoft Office
    f. Adobe Reader (or equivalent to view PDF files)

3. **COMPETENCIES**

1. General skills
2. Practice Management
3. Communication and Community Resources
4. Patient Care – Diagnosis
5. Patient Care - Treatment Planning
6. Competencies specific to the subject

4. **TEACHING HOURS**

LECTURE CLASSES:

III BDS- 30 Hours
Final BDS- 50 Hours
Total: 80 hours

CLINICAL HOURS:

III BDS- 70 Hours
Final BDS- 100 Hours
Total - 170hours

5. **TEACHING METHODOLOGY**

THIRD BDS (DURING CLINICAL POSTING)

i. Infection control
ii. Periodontal instruments and instrumentation
iii. Chair position, ergonomics, principles of instrumentation; maintenance of instruments
iv. Basic tissues- gingiva , periodontal ligament, cementum, alveolar bone.
v. Plaque control- both mechanical and chemical
vi. Motivation of patients- oral hygiene instructions & education with typhodont

FINAL BDS(DURING CLINICAL POSTING)

i. Revision of third BDS tutorial
ii. Diagnosis / classification of periodontal disease
iii. Determination of prognosis and treatment plan
iv. Radiographic interpretation and lab diagnosis
v. Ultrasonic instrumentation
vi. Principles of periodontal surgery
vii. Periodontal surgical procedure and suturing technique
viii. Concepts of local drug delivery
ix. Occlusion – correction & management.
x. Splinting techniques

xi. Treatment of dental hypersensitivity
xii. Implants- basics.

6. THEORY SYLLABUS

TOPIC	MUST KNOW	DESIRABLE TO KNOW	NICE TO KNOW
Third BDS lecture classes : 40 hours	1.Instruments and instructions 2. Gingiva 3. Junctional epithelium, gingival pigmentation 4. GCF & saliva 5. Cementum 6. Periodontal ligament 7. Ageing and the periodontal & alveolar bone 8. Classification of periodontal disease 9. Epidemiology of gingival and periodontal disease 10. Plaque – introduction, properties, structure and formation 11. Plaque – Microbial specificity, micro organisms associated with periodontal disease 12. Calculus 13. Immunology – basic concepts 14. Immunology – microbial host interaction 15.Gingivitis 16. Acute lesions of gingiva 17.Gingival enlargements 18. Gingival bleeding 19. Gingival recession 20. Gingival disease in childhood 21. Mechanical plaque control	Genetic factors associated with periodontal disease.	1. Desqumative gingivitis 2. Influence of endocrine disorders& hormonal changes on the periodontium 3. Influence of haematological disorders& immune deficiencies on the periodontium 4. Stress & psychosomatic disorders and the periodontium 5. Nutritional influences on the periodontium 6. Smoking and periodontal disease.

	22. Chemical plaque control 23. Systemic administration of drugs in periodontal therapy 24. Chronic &aggressive periodontitis 25. Periodontal pocket 26. Abscesses of the periodontium – gingival, periodontal &pericoronal 27. HIV & the periodontium 28. Bone loss and patterns of bone destruction 29. Trauma from occlusion 30. Furcation involvement 31. Tooth mobility 32.Halitosis& Hypersensitivity		
Final B.D.S.	1.Periodontal medicine 2.Clinical diagnosis 3.Radiograhic and diagnostic aids in the diagnosis of periodontal disease 4. Risk factors & risk assessment 5. Determination of prognosis 6. Treatment plan 7. Periodontal treatment of medically compromised patient 8. Iatrogenic factors in the etiology of periodontitis 9. Orthoperio inter –relationship 10.Endo- perio inter – relationship 11.Prostho- perio inter – relationship 12.Host modulation & therapy 13.non-surgical therapy 14. Local drug delivery 15. Splinting 16. Surgical anatomy & general principles of	1. Advanced regenerative procedure in periodontics 2. Recent advances in periodontal surgery 3. Periodontal plastic and esthetic surgery 4. Application of micro surgery in periodontics. 5. Implants – surgical concepts. 6. Supportive implant treatment	1. Advanced diagnostic technique-microbiological,immunological & radiographic 2. Mucogingival surgery. 3. Lasers in periodontics.

	periodontal surgery 17.Gingival surgical techniques –periodontal dressing 18.Periodontal flap surgery 19.Gingivectomy and gingivoplasty 20.Resective osseous surgery 21.Regeneration in periodontal therapy 22. Healing in periodontal therapy 23.Failures in periodontal therapy 24.Supportive periodontal therapy 25.Periodontal plastic and esthetic surgery 26.Multi- disciplinary approach for the management of periodontal disease 27.Diagnosis and treatment of periodontal emergencies 28. Implant basics and diagnosis , treatment planning 29. Peri-implant disease and management.		

Bioethics

Bioethics is the application of ethics to the field of medicine and healthcare. Bioethics includes medical ethics, which focuses on issues in health care; research ethics, which focuses issues in the conduct of research; environmental ethics, which focuses on issues pertaining to the relationship between human activities and the environment, and public health ethics.

7. PRACTICALS / CLINICALS

Case history taking followed by discussion

Final BDS :	5 long cases
	10 short cases
Oral prophylaxis - Handscaling -	75 cases

Demonstration of surgical procedure

Maintenance therapy

8. THEORY EXAMINATION (3 Hours0

Elaborate on 2x10 marks = 20 marks
Write notes on 10 x5 marks = 50 marks

Total = 70 marks
---

9. PRACTICALS/ CLINICALS EXAMINATIONS

Clinical procedures
1. Case sheet writing for the given case
2. Scaling
3. Spotters-Instruments, Radiographic interpretation chair side clinical diagnosis

Scheme for Clinical /Practical Examination
Practical - 90 marks
Case Sheet Writing - 10 marks
Scaling - 50 marks
Spotters - 20 marks
Chairside viva - 10 marks

Viva = 20 marks

	Examination	Internal Assessment	Viva	Total
Theory	70	10	20	100
Practicals	90	10	-	100
Total				200

10. FORMATIVE/ INTERNAL ASSESSMENT

The continuing assessment examination (both Theory/Practical) held at least 3times in a particular year and best of two examinations should be considered. The Internal Assessment marks to be submitted to the University, once in every three months. The marks scored by the students shall be displayed on the Notice board and a copy forwarded by HOD shall be sent to the university once in every 3 months.

11. RECORD NOTE /LOG BOOK

Record shall be maintained and assessed periodically by faculty and HOD. Institution shall provide adequate number of cases as specified in Dental Council of India regulation for the students during clinical training and examinations.

12. TEXT BOOKS

Carranza ‘s Clinical Periodontology

13. REFERENCE BOOKS

i. ClinicalPeriodontology & implantology by Jan Lindhe
ii. Contemporary Peridontics by Robert Genco Henry Goldman
iii.Essentials of Periodontology and periodontics – Torquil MacPhee
iv. Contemporary Periodontics – Cohen
v. Periodontal therapy – Goldman
vi. Orbans’ periodontics – Orban
vii. Oral Health Survey – W.H.O.
viii.Preventive Periodontics – Yound and Stiffler
ix. Public Health Dentistry – Slack
x. Advanced Periodontal Disease – John Prichard
xi. Preventive Dentistry – Forrest
xii. Periodontics – Baer & Morris.

14. CRI POSTING SCHEDULE AND ORIENTATION

A. The dental graduates shall perform the following procedures

1. Prophylaxis	15cases
2. FlapOperation	2cases
3. RootPlanning	1case
4. Currettage	1case
5. Gingivectomy	1case
6. Perio-Endo cases	1case

B. During their one week posting in the community health centers, the internees shall educate the public in prevention of Periodontal diseases.

Period of Postings

Periodontics - 1 Month

16. PROSTHODONTICS AND CROWN AND BRIDGE

1. GOAL

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

2. OBJECTIVES

a. KNOWLEDGE:

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

b. ATTITUDE:

During the training period, a graduate should develop the following attitudes.

1. Willingness to apply the current knowledge of dentistry in the best interest of the patient and community.
2. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
3. Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.

4. Willingness to participate in the CPED programmes to update knowledge and professional skill time to time.
5. Help and participate in the implementation of the National Oral Health Policy.

c. SKILLS:

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

1. Diagnose and mange various common dental problems encountered in general dental practice keeping in mind the expectations and the right of the society to receive the best possible treatment available wherever possible.
2. Prevent and manage complications if encountered while carrying out various surgical and other procedures.
3. Carry out certain investigative procedures and ability to interpret laboratory findings.
4. Promote oral health and help prevent oral disease where possible.
5. Control pain and anxiety among the patients during dental treatment.

d. INTEGRATION:

Integrated knowledge about all the divisions in Prosthodontics(CD,RPD,FPD,IMPLANTS etc)

e. KNOWLEDGE ABOUT INFECTION AND CROSS INFECTION IN DENTISTRY:

Knowledge about asepsis – disinfection and sterilization of instruments, clinical area/ personal care as per universal protection, and disposal of medical wastes in the appropriate modes. Students should be aware of the rules and regulations pertaining to maintenance of clinical set up and waste disposal.

f. COMPUTER PROFICIENCY:

Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes. Basic operative skills in analysis of data and knowledge of multimedia. Students should utilize a combination of traditional classroom courses, and online courses. The following validation is required and must be completed.

i. Technological Requirements for all Graduate Students
ii. A laptop or desktop computer that supports the following requirements
    a. Operating system requirements
    b. Internet browser requirements

c. Reliable and consistent access to the internet
d. Antivirus software which is current and consistently updated
e. Microsoft Office
f. Adobe Reader (or equivalent to view PDF files)

3. **COMPETENCIES**

1. General skills
2. Practice Management
3. Communication and Community Resources
4. Patient Care – Diagnosis
5. Patient Care - Treatment Planning
6. Competencies specific to the subject

4. TEACHING HOURS

III BDS

Subject	**Lecture Hours**	**Practical Hours**	**Clinical Hours**
Prosthodontics & Crown & Bridge	30		70

IV BDS

Subject	**Lecture Hours**	**Practical Hours**	**Clinical Hours**
Prosthodontics & Crown & Bridge	80		300
Total Hours	**110**		**370**

5. TEACHING METHODOLOGY

The objectives of teaching methodology can be achieved by various teaching techniques such as :
a) Lectures
b) Lecture Demonstrations
c) Practical exercises
d) Audio visual aids
e) Small group discussions with regular feed back from the students
f) Integrated Teaching
g) Symposium and continuing medical education programmes and Computer Aided Study

6. **THEORY SYLLABUS INCLUDING BIO-ETHICS, DENTAL JURISPRUDENCE.**

TOPIC	MUST KNOW	DESIRABLE TO KNOW	NICE TO KNOW
Under graduate student must have the following knowledge	• Diagnosis and Treatment Planning in Complete Denture. • History and Patient Evaluation in Complete Denture. • Anatomical Landmarks in Maxilla and Mandible. • Principles and Objectives of Impression Making. • Special Tray Fabrication and Secondary Impression. • Record Base Fabrication and Occlusal Rims. • Recording Centric Jaw Relation. • Articulators. • Arrangement of Artificial Teeth. • Fabrication of Complete Denture –Lab Procedure • Relining and Rebasing Procedures.	• Mouth Preparation in Complete Denture Fabrication. • Single Complete Denture. • Over Dentures. • Recording Neutral Zone. • Surveying in RPD • Cast Partial Dentures. • Attachments in RPD. • Principles in RPD. • Immediate Dentures. • Materials in FPD. • Fluid Control and Soft Tissue Management.	• Balancing in Complete Dentures • Semi Adjustable and Fully Adjustable Articulators. • Interocclusal Records in Complete Denture. • Implant Supported Complete Denture. • RPI concept in RPD. • Occlusion in FPD. • Implant Abutments. • Laminate and Veneers. • Obturators. • Implant retained Prosthesis. • Cleft Lip and Cleft Palate Management. • Implant Prosthesis • Grating Techniques in

	• Classification of Partially Edentulous Arch. • Major Connectors and Minor Connectors. • Retainers in RPD. • Construction of Removable Denture. • Indication and Contraindication of FPD. • Parts of Fixed Partial Denture. • Principles of Tooth Preparation. • Types of FPD. • Impression Making in FPD. • Soldering and Welding Techniques. • Luting Cements. • Types of Maxillofacial Defects. • Materials Used in Maxillofacial Prosthesis. • Diagnosis and Treatment Planing for Implant • Oseointegration. • Titanium. • Classification of Implants. • Temporomandibular joint Anatomy. Temporomandiibular joint Disorders.	• Resin Bonded Bridges. • Lab Proceduresin FPD Fabrication. • Extraoral defects ,Intra oral defects and its Managements. • Stents in Implant Placement. • Instruments and Parts of Implant. • Surgical Procedures in Implant Placement.	Implant.Surgery. Loading Protocol in Implants.
Bio-Ethics	1. Respect human life and the dignity of every individual. 2. Refrain from supporting or committing crimes against humanity and codemn all such acts. 3. Treat the sick and injured with		

	competence and compassion and without prejudice and apply the knowledge and skills when needed. 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.		

7. PRACTICALS

Procedures

It includes fabrication of the following

Complete Dentures - 5

Removable Partial Dentures -30

Demonstrations
It includes Demonstration of steps in Complete Denture Fabrication . Demonstration of tooth preparation in artificial teeth.

8. THEORY EXAMINATION (3 Hours)

Elaborate on : 2 x 10 marks = 20 Marks
Write notes on: 10 x 5 marks = 50 Marks
---
70 Marks
---

9. PRACTICAL / CLINICAL EXAMINATIONS – OSCE/OSPE

PRACTICALS: 90 marks

FINAL YEAR:
COMPLETE DENTURE:

1. Case history and Discussion with Instrumentation: 10 Marks -15 Minutes
2. Border molding with special tray: 15 Marks - 30 Minutes
3. Master impression (patient may be completely edentulous or single edentulous arch) 20Marks -15 Minutes

FIXED PROSTHODONTICS:

1. Articulated Model and Instrumentation: 10 Marks -10 Minutes
2. Tooth preparation in Articulated artificial teeth: 25 Marks -45 Minutes

SPOTTERS 10 Marks-20 Minutes
Cast partial denture
Identification of Kennedys Class in RPD
Elastomeric materials
Semi Adjustable Articulators
Mean Value and Hinge Articulators
Face Bow

Surgical Obturator
Feeding Plate
Abrasives and Polishing agents
Acrylic ,Metal Ceramic ,Full metal Crowns and Bridges

Total: 90 Marks

VIVA -20 Marks

	Examination	Internal Assessment	Viva	Total
Theory	70	10	20	100
Practicals	90	10	-	100
Total				200

10. FORMATIVE/INTERNAL ASSESSMENT

The continuing assessment examination (both Theory/Practical) held at least 3times in a particular year and best of two examinations should be considered. The Internal Assessment marks to be submitted to the University, once in every three months. The marks scored by the students shall be displayed on the Notice board and a copy forwarded by HOD shall be sent to the University once in every 3 months.

Theory Internal Assessment - 10 marks
Practical /Clinical Internal Assessment-10 marks

11. RECORD NOTE / LOG BOOK

Record shall be maintained and assessed periodically by faculty and HOD. Institution shall provide adequate number of cases/teaching materials as specified in Dental Council of India regulation for the students during clinical/practical training and examinations.

12. TEXT BOOKS

1. Essential of Complete Denture Prosthodontics - Winkler
2. Prosthodontic Treatment for Edentluous Patients - Zarb Bolender
3. Clinical Removable Partial Denture - Stewart
4. Fundamentals of Fixed Prosthodontics - Shillingburg
5. Text Book of Prosthodontics - Deepak Nallaswam

13. REFERENCE BOOKS

1. Impression Techniques for Complete Denture - Bernard Levin
2. Removable Partial Prosthodontics - Mc Cracken
3. Contemporary Fixed Partial Denture - Rosenstiel
4. Syllabus of Complete denture by – Charles M. Heartwell Jr. and Arthur O. Rahn.
5. Boucher's "Prosthodontic treatment for edentulous patients"
6. Essentials of complete denture prosthodontics by – Sheldon Winkler
7. Maxillofacial prosthetics by – Willam R. Laney
8. McCraken"s Removable partial prosthodontics
9. Removable partial prosthdontics by – Ernest L.Miller and Joseph E. Grasso.

14. CRI POSTING SCHEDULE AND ORIENTATION

The dental graduates during their internship posting in Prosthodontics shall make:-

1. Complete denture(upper&lower) 2
2. Removable Partial Denture 4
3. Fixed Partial Denture 1
4. Planned cast partial denture 1
5. Miscellaneous-like reline/overdenture/repairs of Maxillofacial Prosthesis 1
6. Learning use of Face bow and Semi anatomic articulator technique
7. Crowns
8. Introduction of implants

Period of Postings

Prosthodontics - 1 ½ Months

17. CONSERVATIVE DENTISTRY AND ENDODONTICS

1. **GOAL**

- To acquire adequate knowledge, necessary skills and 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.
- To provide critical knowledge and understanding of conservative dentistry and endodontics.
- To train the undergraduate students and equip with knowledge, attitude and skills necessary to carry out procedures in conservative dentistry and endodontics.

2. **OBJECTIVES**

a. KNOWLEDGE AND UNDERSTANDING:

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

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

b. SKILLS:

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

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

c. ATTITUDE:

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

- Have empathy for the patient and do the best possible as situation demands
- Willing to apply current knowledge of dentistry in the best interest of the patients and the community.
- Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
- Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.
- Willingness to participate in the continuing education programmes to update knowledge and professional skills from time to time.
- To help and to participate in the implementation of national health programmes.

d. INTEGRATION:

- At the conclusion of the course the student should be able to diagnose and treat the disease efficiently.
- Should integrate interdisciplinary approach and management

e. KNOWLEDGE ABOUT INFECTION AND CROSS INFECTION IN DENTISTRY:

Knowledge about asepsis – disinfection and sterilization of instruments, clinical area / personal care as per universal protection, and disposal of medical wastes in the appropriate modes. Students should be aware of the rules and regulations pertaining to maintenance of clinical set up and waste disposal.

f. COMPUTER PROFICIENCY:

Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes. Basic operative skills in analysis of data and knowledge of multimedia. Students should utilize a combination of traditional classroom courses, and online courses. The following validation is required and must be completed.

i. Technological Requirements for all Graduate Students
ii. A laptop or desktop computer that supports the following requirements
    a. Operating system requirements
    b. Internet browser requirements
    c. Reliable and consistent access to the internet
    d. Antivirus software which is current and consistently updated
    e. Microsoft Office
    f. Adobe Reader (or equivalent to view PDF files)

3. **COMPETENCIES**

1. General skills
2. Practice Management
3. Communication and Community Resources
4. Patient Care – Diagnosis
5. Patient Care - Treatment Planning
6. Competencies specific to the subject

- Competent to diagnose all carious lesions
- Competent to perform class 1 and class 2 cavities and restoration with amalgam
- Competent to perform class 3 and class 4 cavities and restoration with glass ionomer cement
- Competent to perform anterior root canal treatment.
- Take proper chair side history, examine the patient and perform medical and dental diagnostic procedures and order as well as perform relevant tests and interpret them
- To come to a reasonable diagnosis about the dental condition in general and Conservative Dentistry - Endodontics in particular and undertake complete patient monitoring including preoperative as well as post operative care of the patient.

4. **TEACHING HOURS**

MAXIMUM WORKING HOURS FOR BDS

SUBJECT	LECTURE HOURS	CLINICAL HOURS
CONSERVATIVE DENTISTRYAND ENDODONTICS	110	370

MINIMUM WORKING HOURS FOR BDS

YEAR	SUBECT	LECTURE HOURS	CLINICAL HOURS
3rd BDS	CONSERVATIVE DENTISTRY AND ENDODONTICS	30	70
4TH BDS	CONSERVATIVE DENTISTRY AND ENDODONTICS	80	300
TOTAL HOURS		110	370

Lecture hours-conservative topics class 1 ,2 amalgam, inlay ,class V can be taught in 3rd BDS.

Practical hours/clinical hours -4th year student to observe other procedures like

- Rotary endodontics
- RVG
- Thermoplasticized gutta percha
- Rubber dam application

- Bleaching of vital/non vital teeth
- Cast post
- Diastema closure
- Rubber base impression

5. **TEACHING METHODOLOGY**

- To be more interactive
- Student should come with sufficient information to be able to receive the applied concepts and skills better.
- Student should be keen to learn and demonstrate

The objectives of teaching Conservative dentistry can be achieved by various teaching techniques such as:

a) Lectures
b) Lecture Demonstrations
c) Practical exercises
d) Audio visual aids
e) Small group discussions with regular feedback from the students
f) Integrated Teaching
g) Symposium and continuing medical education programmes.

6**. THEORY SYLLABUS INCLUDING BIO-ETHICS AND JURISPRUDENCE**

Topic	Must Know	Desirable To Know	Nice To Know
1.	• Class 1 Amalgam • Class 1amalgam With Buccal and Palatal Extensions • Class 2 Amalgam • Class 3 And Class 5 Gic Management Of Deep Caries-Temporary Restorations	• Anterior Root Canal Treatment • Class 4 Composite • Observations/Demonstrations of Vitality Assessment-Ept W L Assessment –Apex Locators Periapical Surgery Midline Diastema Bleaching Cast /Fibre Post Avulsed	• Indirect Restorations-Casting Procedures • Observations/ Demonstrations of Magnification-Loupes Rvg Rotary Endodontics Thermoplastisized Gutta Percha Ceramic

		Tooth Management - Holding Medium -Splinting • Rubber Dam Application	Processing Management of Trauma Rubber Base Impression Procedures
2.Additional Topics		• Biofilms • Magnification-Microscopes, Microscopic Surgery,Loupes • Recent Classification Of Trauma • Newer Concepts In Caries • Rotary Endodontic Techniques • Veneers • Light Cure Lamps, Bleaching Lights • Core Build Up Materials	
3.	1. Anterior Rct 2.Class Iv Composite 3. Midline Diastema and Space Management 4.Bls Course(Basic Life Support)-3 Days	1. Premolar Rct 2. Full Crown	1. Magnification Loupes 2. Management of Avulsed/Subluxated Tooth
Lecture Classes:	1. Introduction To Operative Dentistry 2. Glossary & Its Significance. 3. Tooth Designation & System Followed. 4. Classification of Caries 5. Basic Principles In Cavity Preparation 6. Instruments & Equipment for Tooth Preparation. 7. Cavity Preparation for Amalgam. 8. Cavity Preparation for Inlay		

	9. Tooth Preparation for Tooth Colored Materials 10. Matrices and Retainers 11. Deep Caries Management 12. Introduction to Root Canal Treatment and Pulpotomy. 13. Operators Position, and Chair Position for the Patient. 14. Basic aspects of Sterilization of Instruments and Equipment 15. Basic aspects of Management of Various Restorative Materials. (Amalgam, Cement, Glass Ionomer, Composites)		
Conservative Dentistry	• Definition & Scope, Oral Hygiene in Relation to Conservative Dentistry. Instruments - Nomenclature, Design and Formulae, Care and Sterilization, Examination, Diagnosis and Treatment Planning, Charting and Recording of Cases, Cavities Classification and Nomenclature, Choice of Filling Materials. • Principles of Cavity Preparation, • Control of Pain, Prevention of Damages to Hard		

	and Soft Tissues During Operative Procedures. • Methods Employed for Exclusion of Saliva. • Bio Mechanics of Cavity Design and Restoration with Filling Materials, Pulp and Soft Tissue Protection. • Airotors and High Speed Equipment. • Cavity Preparation for Various Types of Restorations Including Inlays and Onlays. Restorative Procedures, Matrices, Drugs Used In The Conservative Dentistry Fractured Teeth and Their Treatment Hypersensitivity and its Treatment, Ceramics In Conservative Dentistry.		
Endodontics	• Rationale of Endodontic Therapy, Diagnostic Aids In Endodontics Care and Sterilization of Instrument for Endodonic Treatment of Vital and Non-Vital Pulp, Tests for Sterility of the Root Canal. Drugs Used In Root Canal Therapy. • Bleaching of Teeth. • Restoration of Endodontically Treated Teeth,Surgical Endodontics.		

Biomedical Ethics	• Respect Human Life and the Dignity of Human Individual • Refrain From Supporting or Commiting Crimes against Humanity and Condemn all such acts • 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		

7. PRACTICALS

EXERCISES FOR PRECLINICAL TRAINING - II YEAR B.D.S.

Exercise I
- Excavation of Deep Caries&
- Indirect Pulp capping

Exercise II :
- Excavation of Deep Caries
- &Direct Pulp capping

Exercise III
- Pulpotomy

Exercise IV
- Class preparations to

receive

- Silver Amalgam
- One Lower Molar with Buccal Extension – 1
- One Lower Premolar - 1. One Upper Molar -1.

Exercise V

- Class II preparation for Silver Amalgam.
- One Lower Molar (Mesio Occlusal) - 1
  One Lower Premolar (Disto Occlusal) - 1

- One Upper Molar (Disto Occlusal) -1

Exercise VI: Class III preparation for tooth ColouredMaterial
One Upper Central Incisor (Palatal Approach) -1
One Lower Central Incisor (Labial Approach) -1

Exercise VII: Class V Preparations One Upper Canine -(Tooth coloured Material) -1
One Lower Molar (Amalgam)

Exercise VIII: Inlay Preparation
One Lower Molar (Mesio Occluso Distal) -1. One Upper Molar (Occlusal) -1

Exercise IX: Access cavity preparation One Upper Lateral Incisor-1

Exercise X: observation on Fractured teeth

8. **THEORY EXAMINATIONS (3 Hours)**

ELABORATE ON 2 x 10	=	20 MARKS
WRITE NOTES ON 10 X 5	=	50 MARKS
		70 MARKS

Note: Elaborate On : One Essay in Conservative Dentistry and One Essay in endodontics
Write Notes on: Four questions in conservative Dentistry, Four questions in Endodontics, One question in Dental Materials and One question in Esthetic Dentistry.

9. **PRACTICAL/CLINICAL EXAMINATIONS**

Clinical Exercises

I. Preparation for class II amalgam and restoration
Or
Preparation for Class I amalgam with buccal / palatal extension
Or
II. Anterior composite restoration
Or
III. Root canal treatment for anterior tooth up to WL determination

Mark distribution for the clinical examinations

I. CLASS I / CLASS II amalgam restoration

Case history recording, examination, diagnosis and treatment planning	: 10 marks
Tooth preparation	: 35 marks
Base and matrix	: 15 marks
Restoration and carving	: 30 marks
Total	90 marks

Or

II. Anterior composite restoration

Case history recording, examination, diagnosis and treatment planning	: 10 marks
Tooth preparation	: 35 marks
Lining and matrix	: 15 marks
Restoration	: 20 marks
Finishing	: 10 marks
Total	: 90 marks

Or

III. Anterior RCT

• Case history recording, examination, diagnosis and treatment planning	: 10 marks
• Access preparation	: 35 marks
• Working length	: 15 marks
• Cleaning and shaping	
• Master cone selection	: 30 marks
Total	90 marks

Viva 20 marks

	Examination	Internal Assessment	Viva	Total
Theory	70	10	20	100
Practicals	90	10	-	100
Total				200

10. FORMATIVE/INTERNAL ASSESSMENT

The continuing assessment examination (both Theory/Practical) held at least 3times in a particular year and best of two examinations should be considered. The Internal Assessment marks to be submitted to the University, once in every three months. The marks scored by the students shall be displayed on the Notice board and a copy forwarded by HOD shall be sent to the University once in every 3months.

IA Marks
Theory IA Marks : 10
Practical IA Marks: 10

11. RECORD BOOK

Record shall be maintained and assessed periodically by faculty and HOD. Institution shall provide adequate number of cases/teaching materials as specified in Dental Council of India regulation for the students during clinical/practical training and examinations.

12. TEXT BOOKS

DENTAL MATERIALS

1. Restorative Dental Materials -Robert G.Craig
2. Notes on Dental Materials - E.C.Combe

CONSERVATIVE DENTISTRY AND ENDODONTICS

1. The Art & Science of Operative Dentistry, Sturdevant, MosbyU.S.A
2. Pickard's manual of operative dentistry
3. Principle & Practice of Operative Dentistry, Charbeneu,Varghese Publishing, Mumbai.
4. Grossman's Endodontic Practice, B. Suresh Chandra & V. GopiKrishna, WoltersKluwer

13. REFERENCE BOOKS

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

3) Ingle’s textbook of endodontics
4) Cohen’s Pathways of Pulp
5) Fundamentals of Operative Dentistry: A Contemporary Approach-James b.Summit

14. CRI POSTING SCHEDULE AND ORIENTATION

To facilitate reinforcement of learning and achievement of basic skills, the Interns shall perform atleast the following procedures independently or under the guidance of supervisors:

1. Restoration of extensively mutilated teeth	5 Cases
2. Inlay and onlay preparations	1Case
3. Use of tooth coloured restorative materials	4Cases
4. Treatment of discoloured Vital and non-vital teeth	1Case
5. Management of dento alveolar fracture	1Case
6. Management of pulpless, single-rooted teeth without periapical lesion	4Cases
7. Management of acute dento alveolar infections	2Cases
8. Management of pulpless, single-rooted teeth with peripheral lesion period	1Case
9. Non-surgical management of traumatized teeth during formative period.	

.

Period of Postings
Conservative Dentistry - 1 Month

18. ORAL AND MAXILLOFACIAL SURGERY

1. GOAL

To produce a graduate who is competent in performing extraction of teeth under both local and general anaesthesia, prevent and manage related complications, acquire a reasonable knowledge and understanding of the various diseases, injuries, infections occurring in the Oral & Maxillofacial region and offer solutions to such of those common conditions and has an exposure into the in-patient management of maxillofacial problems.

2. OBJECTIVES

a. Knowledge and Understanding:

At the end of the course and clinical training the graduate is expected to -

1. Apply the knowledge gained in the related medical subjects like pathology, Microbiology and general medicine in the management of patients with oral surgical problems
2. Diagnose, manage and treat (understand the principles of treatment) patients with oral surgical problems.
3. Gain Knowledge of a range of surgical treatments.
4. Be able to decide the requirement of a patient to have oral surgical specialist opinion or treatment.
5. Understand the principles of in-patient management.
6. Understand the management of major oral surgical procedures and principles involved in patient management.
7. Know the ethical issues and have communication ability.

b. Skills:

1. A graduate should have acquired the skill to examine any patient with an oral surgical problem in an orderly manner, be able to understand requisition of various clinical and laboratory investigations and is capable of formulating differential diagnosis.
2. Should be competent in the extraction of teeth under both local and general anaesthesia.
3. Should be able to carry out certain minor oral surgical procedures under LA like frenectomy, alveolar procedures & biopsy etc.
4. Ability to assess, prevent and manage various complications during and after surgery.
5. Able to provide/primary care and manage medical emergencies in the dental office.

6. Understand the management of major oral surgical problems and principles involved, in inpatient management.

c. Attitude:

A graduate should develop during the training period the following attitudes

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

d. Integration:

Horizontal integration - Provision of learning within the structure where individual departments/subject areas contribute to the development and delivery of learning in a meaningful, holistic manner. Links are made between the different subject areas and that learning is enriched by the connections and interrelationships being made explicit by this process.

Vertical integration - combination of basic and clinical sciences in such a way that the traditional divide between preclinical and clinical studies is broken down. Basic science is represented explicitly in the curriculum within the clinical environments during all the years of undergraduate education and beyond into postgraduate training and continuing professional development.

(e.g.) All the students studied a case of Oral cancer - the second-year student prepared the pathology part while the intern correlated it with the case presentation. This was followed by a first year explaining the anatomy and the final year explaining the signs, symptoms, grading and staging, The surgical part was correlated with anatomy by the postgraduate.

e. Knowledge about infection and cross infection in dentistry:

Knowledge about asepsis – disinfection and sterilization of instruments, clinical area/ personal care as per universal protection, and disposal of medical wastes in the appropriate modes. Students should be aware of the rulesand regulations pertaining to maintenance of clinical set up and waste disposal.

f. Computer Proficiency:

Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes. Basic operative skills in analysis of data and knowledge of multimedia. Students should utilize a combination of traditional classroom courses, and online courses. The following validation is required and must be completed.

i. Technological Requirements for all Graduate Students
ii. A laptop or desktop computer that supports the following requirements
    a. Operating system requirements
    b. Internet browser requirements
    c. Reliable and consistent access to the internet
    d. Antivirus software which is current and consistently updated
    e. Microsoft Office
    f. Adobe Reader (or equivalent to view PDF files)

3. **COMPETENCIES**

1. General skills
2. Practice Management
3. Communication and Community Resources
4. Patient Care – Diagnosis
5. Patient Care - Treatment Planning
6. Competencies specific to the subject

- Able to apply the knowledge gained in the basic medical and clinical subjects in the management of patients with surgical problems
- Able to diagnose, manage and treat patients with basic oral surgical problems
- Have a broad knowledge of maxillofacial surgery and oral implantology
- Should be familiar with legal, ethical and moral issues pertaining to the patient care and communication skill
- Should have acquired the skill to examine any patient with an oral surgical problem in an orderly manner
- Understand and practice the basic principles of asepsis and sterilization
- Should be competent in the extraction of the teeth under both local and general anaesthesia

- Competent to carry out certain minor oral surgical procedure under LA liketrans-alveolar extraction, frenectomy, dento alveolar procedures, simple impaction, biopsy etc
- Competent to assess, prevent and manage common complications that arise during and after minor oral surgery
- Able to provide primary care and manage medical emergencies in the dental office
- Familiar with the management of major oral surgical problems and principles involved in the in patient management

4. TEACHING HOURS

Lecture Hours
III Year – 20 hours
IV Year – 50 hours

Clinical Hours
III Year – 70 hours
IV Year – 200 hours

5. TEACHING METHODOLOGY

- Combination of lectures
- Small group seminars, tutorials
- Clinical skills laboratory sessions
- Supervised clinical activity
- Problem based curriculum in problem solving and diagnosis.

6. **THEORY SYLLABUS INCLUDING BIO-ETHICS, DENTAL JURISPRUDENCE.**

Third Year

TOPIC	MUST KNOW	DESIRABLE TO KNOW	NICE TO KNOW
Introduction	Definition, Aims & objectives and scope of Oral and Maxillofacial surgery		

Diagnosis in oral surgery	History Taking		
Clinical Examination Investigations	Infection control	Principles of infection control Asepsis: Definition, measures to prevent infection during surgery Preparation of the patient Measures to be taken by operator Sterilisation of instruments - various methods of sterilisation etc. Cross infection, HIV/AIDS and hepatitis	
	Local Anaesthesia	Neurology of facial pain Historical aspects, definition, types of LA, indications, contraindications, advantages and disadvantages, concept of LA Local anaesthetic drugs, Classification Ideal requirements of LA solutions, composition and mode of action, Types of LA Choice of particular mode of anaesthesia Complications of LA, prevention and management. Anaesthesia technique- Mandible Pterygomandibular space - boundaries and contents, Interior dental nerve block- various techniques, complications, mental foramen nerve block Anaesthesia technique- Maxilla, Infraorbital nerve block, Posterior superior alveolar nerve block Use of vasoconstrictors in local anaesthetic solution, advantages, contraindications, various vasoconstrictors used	
General anaesthesia		Concept of general anaesthesia. Indications of general anaesthesia in dentistry. Pre-anaesthetic evaluation of the patient. Pre-anaesthetic medication -	

		advantages, drugs used. Commonly used anaesthetic agents. Complications during and after G.A. I.V. sedation with Diazepam and Midazolam. Indications, mode of action, technique etc. Cardiopulmonary resuscitation. Use of oxygen and emergency drugs. Tracheostomy.	
Exodontia	Ideal extraction, Introduction, indications, contra indications, extraction in medically compromised individuals		
Methods of extraction- Forceps or intra alveolar or closed method. principles, types of movement and force, Trans alveolar, surgical or open method, indications, surgical procedure. Dental elevators - uses, classification, principles in the use of elevators, commonly used elevators			
Complications of			

exodontia, complications during exodontias, common to both maxilla and mandible, postoperative complications, Prevention and management of complications			
Medical Emergency Medical Compromised Patients	Primary care of medical emergencies in dental practice particularly – (a) Cardio vascular (b) Respiratory (c) Endocrine (d) Anaphylactic reaction (e) Epilepsy		
Painless Surgery: I. Pre-anaesthetic considerations. Pre-medication: purpose, drugs used 2. Anaesthetic considerations - a) Local b) Local with IV sedations 3. Use of general anaesthetic			

c) Access: Intra-oral: Mucoperiosteal flaps, principles, commonly used intra oral incisions. Bone Removal: Methods of bone removal. Use of Burs: Advantages & precautions Bone cutting instruments: Principles of using. Chisel & osteotome.			
Principles of oral surgery	Extra-oral: Skin incisions - principle's, various extra-oral incision to expose facial skeleton. a) Submandibular b) Pre-auricular c) Incision to expose maxilla & orbit d) Bicoronal incision e) Control of haemorrhage during surgery Normal Haemostasis Local measures available to control bleeding Hypotensive anaesthesia etc. f) Drainage and Debridement, Purpose of drainage: in surgical wounds Debridement: purpose, soft tissue as bone dement.		

	g) Closure of wounds Suturing: Principles, suture material, classification, body response to various materials etc. h) Post-operative care Post-operative instructions Physiology of cold and heat Control of pain - analgesics Control of infection - antibiotics Control of swelling - anti-inflammatory drugs Long term post-operative follow up – significance		
Ethics	**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 Geneve, 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 Autonome 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		
Dental Jurisprudence	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		
Dento-alveolar Surgery	Trans alveolar extraction, Impacted teeth: General factors, Incidence, Aetiology, Classification Indications, Assessment: clinical & radiological, Anaesthetic considerations, Surgical procedures Endodontic surgery: Introduction, classification, apiceoctomy, replantation		
Impacted teeth	Incidence, definition, aetiology. (a) Impacted mandibular third molar. Classification, reasons for removal, Assessment - both clinical as radiological Surgical procedures for removal. Complications during and after		

	removal, Prevention and management. (b) Maxillary third molar, Indications for removal, classification, Surgical procedure for removal. (c) Impacted maxillary canine Reasons for canine impaction, Localisation, indications for removal, Methods of management, labial and palatal approach, Surgical exposure, transplantation, removal etc.		
Infection of oral cavity	Introduction, factors responsible for infection, course of odontogenic infections, spread of odontogenic infections through various facial spaces. Dento-alveolar abscess- aetiology, clinical features and management. Osteomyelitis of the jaws - Definition; Aetiology, Predisposing factors, classification, clinical features and management. Ludwig's angina - definition, aetiology, clinical features, management and complications Hepatitis B and HIV		
Cystic lesions of jaws	Definition, classification, pathogenesis Diagnosis, clinical features, radiological, aspiration biopsy, use of contrast media and histopathology Management-Types of surgical procedures, rationale of the technique, indications, procedure and complications		
Tumours of the oral Cavity	General considerations, Carcinoma of oral cavity, TNM classification	Role of dental surgeons in the prevention and early detection of oral cancer	

	Non-odontogenic benign tumours - lipoma, fibroma, papilloma, ossifying fibroma, myoma etc.		
	Ameloblastoma-Clinical features, radiographic features, methods of management of Carcinoma of oral cavity		
	Biopsy – types		
	Outline of management of squamous cell carcinoma, surgery, radiotherapy,		
Fractures of the jaws	General consideration, types of the fractures, Aetiology, C/F, and general principles. Dento-alveolar Fractures, methods of management	Management of fracture of condyle - aetiology, classification, clinical features and general principles of management reduction and fixation	
	Mandibular Fractures – Applied Anatomy, Classification Diagnosis – Clinical and Radiological Features Management- open and closed Fixation, Immobilisation methods, outline of rigid and semi rigid internal fixation	Orbital fractures & fractures of Zygomatic complex	
	Fractures of middle third of the face, Definition of mid-face, applied surgical anatomy, classification, clinical features and outline of management	Surgical anatomy, Dislocation - Types, aetiology, clinical features and management	
	Classification, clinical features, Indications for treatment, Various methods of reduction and fixation Alveolar fractures- methods of management		
	Ankylosis- definition, aetiology, clinical features and management		
TMJ disorders			Myofunctional pain

			dysfunction syndrome- aetiology, clinical features management, nonsurgical and surgical
			Internal derangement & Arthritis and other disorders
Diseases of maxillary Sinus	Surgical anatomy, Acute & chronic sinusitis Surgical approach of sinusitis- Caldwell-luc procedure, removal of root from the sinus		
	Oro-antral fistula – aetiology, clinical features and various surgical methods of closure		
Pre-prosthetic surgery	Introduction, aims Definition, classification of procedures. (a) Corrective procedures: Alveoloplasty, Reduction of maxillary tuberosity, Frenectemies and removal of tori. (b) Ridge extension or Sulcus extension procedures Indications and various surgical procedures (c) Ridge augmentation and reconstruction.		

	Indications, use of bone grafts, hydroxyapatite Implants - concept of Osseo- integration Knowledge of various types of implants and Surgical procedure to place implants		
Salivary gland diseases	Diagnosis of salivary gland diseases, sialography, contrast media, procedure, Salivary calculi and Infections of the salivary glands, sialolithiasis- Submandibular and parotid duct- clinical features and management, salivary fistulae, common tumours of salivary glands like pleomorphic adenoma including minor salivary glands	Tumours of the salivary gland and management	
Neurological disorders	Trigeminal neuralgia - Definition, Aetiology, C/F and methods of management including surgery. Glossopharyngeal and Facial paralysis - aetiology, clinical features	Nerve injuries - classification, neurorhaphy etc.	
Cleft lip and cleft palate			Aetiology of the clefts, Incidence, classification, Role of dental surgeon in the management of cleft patients. Outline of the

			closure procedures.
Developmental deformities			Basic forms, prognathism, retrognathism and open bite. Reasons for correction, Outline of surgical methods carried out on maxilla and mandible
Oral Implantology			Principles of implantology
Medical emergency in dental practice	Primary care of medical emergencies in dental practice particularly - (a)Cardio vascular (b) Respiratory(c) Endocrine (d)Anaphylactic reaction (0) Epilepsy		
Emergency drugs	Intramuscular iv injections, applied anatomy, ideal location of giving these injections, techniques etc.		

7. PRACTICALS
Procedures & Demonstrations

Third Year
Students should learn the following exercises:

- Case history taking
- Observe Cases in the Casualty
- Examination of the patient
- Recording blood pressure

- Use of different instruments in Oral & Maxillofacial surgery
- Various local anaesthetic injection techniques on patients

Practical and Clinical Quota

Clinical exercises	Quota
Extraction of Maxillary teeth	25 cases
Wiring techniques on models	1 exercise
Suturing techniques on models.	1 exercise

Final Year
PRACTICAL AND CLINICAL: 200 HOURS

STUDENTS ARE REQUIRED TO LEARN THE FOLLOWING EXERCISES:

- Case history taking
- Examination of the patient
- Recording blood pressure
- Use of different instruments in Oral & Maxillofacial surgery
- Various local anaesthetic injection techniques on patients
- Extraction of mobile and firm teeth
- Trans-alveolar extraction of root stumps
- Surgical removal of Simple impacted teeth
- Management of dento-alveolar fractures with arch bar fixation, eyelets and inter-maxillary fixations.
- Training in basic life support skills

.

PRACTICAL AND CLINICAL QUOTA

Clinical exercises	Quota	Observe/Do/Assist
Extraction of teeth	60 cases	Do
Trans-alveolar method of extraction with suturing	5 cases	Assist
Management of dento-alveolar fractures with arch bar fixation, eyelets and inter-maxillary fixations	5 cases	Observe
IM & IV Injection techniques	5 cases	Do
Major surgical procedures under general anaesthesia	5 cases	Observe
Training in Handling medical emergencies, CPR and basic life support		Do

8. THEORY EXAMINATION (3 Hours)

Elaborate on: 2 x 10= 20 Marks
Write notes on: 10 x 5 = 50 Marks
Total Marks= 70 Marks

9. **PRACTICAL / CLINICAL EXAMINATIONS**

Clinicals in Oral Surgery: 70 + 20 = 90 Marks
A. 70 Marks
Case History : 20 Marks
Local anaesthesia technique: 30 Marks
Extraction of firm tooth : 20 Marks

(Maxillary/ Mandibular tooth) and
management of the patient

B. 20 Marks (Wiring techniques on models 10 marks) (Suturing techniques on models 10 marks)

C. Viva Voce : 20 marks

	Examination	Internal Assessment	Viva	Total
Theory	70	10	20	100
Practicals	90	10	-	100
Total				200

10. FORMATIVE/INTERNAL ASSESSMENT

The continuing assessment examination (both Theory/Practical) held at least 3times in a particular year and best of two examinations should be considered. The Internal Assessment marks to be submitted to the University, once in every three months. The marks scored by the students shall be displayed on the Notice board and a copy forwarded by HOD shall be sent to the University once in every 3 months.

Topics for each assessment
3rd Year
First Internal Assessment

Topic	**Details of the Topic**
Introduction	Definition, Aims & objectives and scope of Oral and Maxillofacial surgery
Diagnosis in oral surgery	History Taking
	Clinical Examination
	Investigations
Infection control	Principles of infection control Asepsis: Definition, measures to prevent infection during surgery Preparation of the patient Measures to be taken by operator Sterilisation of instruments - various methods of sterilisation etc. Cross infection, HIV/AIDS and hepatitis

Second Internal Assessment

Local Anaesthesia	Neurology of facial pain Historical aspects, definition, types of LA, indications, contraindications, advantages and disadvantages, concept of LA Local anaesthetic drugs, Classification Ideal requirements of LA solutions, composition and mode of action, Types of LA Choice of particular mode of anaesthesia Complications of LA, prevention and management. Anaesthesia technique- Mandible Pterygomandibular space - boundaries and contents, Interior dental nerve block- various techniques, complications, mental foramen nerve block Anaesthesia technique- Maxilla, Infraorbital nerve block, Posterior superior alveolar nerve block Use of vasoconstrictors in local anaesthetic solution, advantages, contraindications, various vasoconstrictors used
General anaesthesia	Concept of general anaesthesia. Indications of general anaesthesia in dentistry. Pre-anaesthetic evaluation of the patient. Pre-anaesthetic medication - advantages, drugs used. Commonly used anaesthetic agents. Complications during and after G.A. I.V. sedation with Diazepam and Midazolam. Indications, mode of action, technique etc. Cardiopulmonary resuscitation. Use of oxygen and emergency drugs. Tracheostomy.

Third Internal Assessment

Exodontia	Ideal extraction, Introduction, indications, contra indications, extraction in medically compromised individuals
	Methods of extraction-Forceps or intra alveolar or closed method. principles, types of movement and force, Trans alveolar, surgical or open method, indications, surgical procedure. Dental elevators - uses, classification, principles in the use of elevators, commonly used elevators
	Complications of exodontia, complications during exodontias, common to both maxilla and mandible, postoperative complications, Prevention and management of complications
Medical Emergency Medical Compromised Patients	Primary care of medical emergencies in dental practice particularly – (a)Cardio vascular (b) Respiratory (c) Endocrine (d)Anaphylactic reaction (e) Epilepsy

Final Year

First Internal Assessment

Principles of oral surgery	Painless Surgery: I. Pre-anaesthetic considerations. Pre-medication: purpose, drugs used 2. Anaesthetic considerations - a) Local b) Local with IV sedations 3. Use of general anaesthetic c) Access: Intra-oral: Mucoperiosteal flaps, principles, commonly used intra oral incisions. Bone Removal: Methods of bone removal. Use of Burs: Advantages & precautions Bone cutting instruments: Principles of using. Chisel & osteotome. Extra-oral: Skin incisions - principle's, various extra-oral incision to expose facial skeleton. a) Submandibular b) Pre-auricular c) Incision to expose maxilla & orbit d) Bicoronal incision e) Control of haemorrhage during surgery Normal Haemostasis Local measures available to control bleeding Hypotensive anaesthesia etc. f) Drainage and Debridement, Purpose of drainage: in surgical wounds Debridement: purpose, soft tissue as bone dement. g) Closure of wounds Suturing: Principles, suture material, classification, body response to various materials etc. h) Post-operative care Post-operative instructions Physiology of cold and heat Control of pain - analgesics Control of infection – antibiotics Control of swelling - anti-inflammatory drugs Long term post-operative follow up – significance
Ethics	**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
Dental Jurisprudence	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
Dento-alveolar Surgery	Trans alveolar extraction, Impacted teeth: General factors, Incidence, Aetiology, Classification Indications, Assessment: clinical & radiological, Anaesthetic considerations, Surgical procedures Endodontic surgery: Introduction, classification, apiceoctomy, replantation
Impacted teeth	Incidence, definition, aetiology. (a) Impacted mandibular third molar. Classification, reasons for removal, Assessment - both clinical as radiological Surgical procedures for removal. Complications during and after removal, Prevention and management. (b) Maxillary third molar, Indications for removal, classification, Surgical procedure for removal. (c) Impacted maxillary canine Reasons for canine impaction, Localisation, indications for removal, Methods of management, labial and palatal approach, Surgical exposure, transplantation, removal etc.

Second Internal Assessment

Infection of oral	Introduction, factors responsible for infection, course of odontogenic infections, spread of odontogenic infections through various facial spaces. Dento-alveolar

cavity	abscess- aetiology, clinical features and management. Osteomyelitis of the jaws - Definition; Aetiology, Predisposing factors, classification, clinical features and management. Ludwig's angina - definition, aetiology, clinical features, management and complications Hepatitis B and HIV
Cystic lesions of jaws	Definition, classification, pathogenesis Diagnosis, clinical features, radiological, aspiration biopsy, use of contrast media and histopathology Management-Types of surgical procedures, rationale of the technique, indications, procedure and complications
Tumours of the oral Cavity	General considerations, Carcinoma of oral cavity, TNM classification Non-odontogenic benign tumours - lipoma, fibroma, papilloma, ossifying fibroma, myoma etc. Ameloblastoma-Clinical features, radiographic features, methods of management of Carcinoma of oral cavity Biopsy – types, TNM classification Outline of management of squamous cell carcinoma, surgery, radiotherapy, chemotherapy. Role of dental surgeons in the prevention and early detection of oral cancer
Fractures of the jaws	General consideration, types of the fractures, Aetiology, C/F, and general principles. Dento-alveolar Fractures, methods of management Mandibular Fractures – Applied Anatomy, Classification Diagnosis – Clinical and Radiological Features Management- open and closed Fixation, Immobilisation methods, outline of rigid and semi rigid internal fixation Management of fracture of condyle - aetiology, classification, clinical features and general principles of management reduction and fixation Fractures of middle third of the face, Definition of mid-face, applied surgical anatomy, classification, clinical features and outline of management

	Orbital fractures & fractures of Zygomatic complex
	Classification, clinical features, Indications for treatment, Various methods of reduction and fixation Alveolar fractures- methods of management
	Complications - delayed union, non-union and malunion.
	Surgical anatomy, Dislocation- Types, aetiology, clinical features and management
	Ankylosis- definition, aetiology, clinical features and management
TMJ disorders	Myofunctional pain dysfunction syndrome-aetiology, clinical features management, nonsurgical and surgical
	Internal derangement & Arthritis and other disorders
Diseases of maxillary Sinus	Surgical anatomy, Acute & chronic sinusitis Surgical approach of sinusitis- Caldwell-luc procedure, removal of root from the sinus
	Oro-antral fistula –aetiology, clinical features and various surgical methods of closure

Third Internal Assessment

Pre-prosthetic surgery	Introduction, aims Definition, classification of procedures. (a) Corrective procedures: Alveoloplasty, Reduction of maxillary tuberosity, Frenectemies and removal of tori. (b) Ridge extension or Sulcus extension procedures Indications and various surgical procedures (c) Ridge augmentation and reconstruction. Indications, use of bone grafts, hydroxyapatite Implants - concept of Osseo- integration Knowledge of various types of implants and Surgical procedure to place implants
Salivary gland diseases	Diagnosis of salivary gland diseases, sialography, contrast media, procedure, Salivary calculi and Infections of the salivary glands,

	sialolithiasis- Submandibular and parotid duct- clinical features and management, salivary fistulae, common tumours of salivary glands like pleomorphic adenoma including minor salivary glands Tumours of the salivary gland and management
Neurological disorders	Trigeminal neuralgia - Definition, Aetiology, C/F and methods of management including surgery. Glossopharyngeal and Facial paralysis - aetiology, clinical features
	Nerve injuries - classification, neurorhaphy etc.
Cleft lip and cleft palate	Aetiology of the clefts, Incidence, classification, Role of dental surgeon in the management of cleft patients. Outline of the closure procedures.
Developmental deformities	Basic forms, prognathism, retrognathism and open bite. Reasons for correction, Outline of surgical methods carried out on maxilla and mandible
Oral Implantology	Principles of implantology
Medical emergency in dental practice	Primary care of medical emergencies in dental practice particularly - (a)Cardio vascular (b) Respiratory(c) Endocrine (d)Anaphylactic reaction (e) Epilepsy
Emergency drugs	Intramuscular iv injections, applied anatomy, ideal location of giving these injections, techniques etc.

Schedule for each assessment

First November
Second February
Third May
Model Exam July

11. RECORD NOTE/LOG BOOK

Record shall be maintained and assessed periodically by faculty and HOD. Institution shall provide adequate number of cases/teaching materials as specified in Dental Council of India regulation for the students during clinical/practical training and examinations.

12. TEXT BOOKS

i. Alling John F et al Impacted teeth
ii. Srinivasan B Textbook of Oral and Maxillofacial Surgery
iii. Malamed S F Handbook of medical emergencies in the dental office
iv. Banks P Killey's fracture of mandible
v. Banks P Killey's fracture of middle third of the facial skeleton
vi. McGovanda The Maxillary sinus and its dental implication
vii. Seward G R et al Killey and Kays outline of oral surgery Part I
viii. Mc Carthy F M Essentials of safe dentistry for the medically compromised patients
ix. Laskin D M Oral and Maxillofacial Surgery
x. Howe G L Extraction of teeth
xi. Howe G L Minor oral surgery
xii. Balaji SM Textbook of Oral & Maxillofacial Surgery

13. REFERENCE BOOKS

i. Peterson L J et al Principles of Oral and Maxillofacial Surgery Vol 1,2 & 3
ii. Peterson l J et al Contemporary Oral and Maxillofacial Surgery
iii. Topazian R G & Goldberg M H Oral and Maxillofacial infections
iv. Impacted teeth; Alling John F et al.
v. Principles of oral and maxillofacial surgery; Vol.1,2 & 3 Peterson LJ et al.
vi. Text book of oral and maxillofacial surgery: Srinivasan B.
vii. Handbook of medical emergencies in the dental office, Malamed SF.
viii. Killeys Fractures of the mandible; Banks P.
ix. Killeys fractures of the middle 3rd of the facial skeleton; Banks P.
x. The maxillary sinus and its dental implications; McGovanda
xi. Killey and Kays outline of oral surgery – Part-1: Seward GR et al
xii. Essentials of safe dentistry for the medically compromised patients; Mc Carthy FM
xiii. Oral & maxillofacial surgery, Vol 2; Laskin Dm

xiv. Extraction of teeth; Howe.Gl
xv. Minor Oral Surgery; Howe.Gl
xvi. Contemporary oral and maxillofacial surgery; Peterson I.J. et al
xvii. Oral and maxillofacial infections; Topazian RC & Goldberg MH

14. CRI POSTING SCHEDULE AND ORIENTATION

A. The internees during their posting in oral surgery shall perform the following procedures:

1. Extractions	50
2. Surgical extractions	2
3. Impactions	2
4. Simple Intra Maxillary Fixation	1
5. Cysts enucleations	1
6. Incision and drainage	2
7. Alveoloplasties, Biopsies & Frenectomies, etc.	3

B. The Internees shall perform the following on Cancer Patients:
1. Maintain file work
2. Do extractions for radiotherapy cases
3. Perform biopsies
4. Observe varied cases of oral cancers.

C. The Internees shall have 15 days posting in emergency services of a dental/general hospital with extended responsibilities in emergency dental care in the wards. During this period they shall attend to all emergencies under the direct supervision of oral surgeon during any operation.

1. Emergencies.
   (i) Toothache; (ii) trigeminal neuralgia; (iii) Bleeding from mouth due to trauma, post extraction, bleeding disorder or haemophylia; (iv) Airway obstruction due to fracture mandible and maxilla; dislocation of mandible; syncope or vasovagal attacks; ludwing's angina; tooth fracture; post intermaxillary fixation after general Anaesthesia.
2. Work in I.C.U. with particular reference to resuscitation procedures.
3. Conduct tutorials on medico-legal aspects including reporting on actual cases coming to casualty. They should have visits to law court.

Period of Postings

Oral & Maxillofacial Surgery - 1 ½ Months

19. PUBLIC HEALTH DENTISTRY

1. **GOAL**

To provide critical knowledge and understanding of public health dentistry To develop students understanding of the major oral health problems of community To equip students with the ability to critically analyze dental public health problems and develop practical solutions to protect and promote the oral health for the community To enable students to understand and undertake health services research and to apply key findings into dental public health practice

2. **OBJECTIVES**

a. KNOWLEDGE:

Apply basic sciences knowledge regarding etiology, diagnosis and management of all the oral conditions at the individual and community level Identify social, economic, environmental and emotional determinants in a given individual patient or a community for the purpose of planning and execution of community oral health programme. Ability to conduct oral health surveys in order to identify all the oral health problems affecting the community and find solutions using multi-disciplinary approach. Ability to act as a consultant in Community Oral Health and take part in research (both basic and clinical), present and publish the outcome at various scientific conferences and journals, both national and international.

b. 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

c. ATTITUDE:

Adopt ethical principles in all aspects of Community Oral Health activities. To apply ethical and moral standards while carrying out epidemiological research. Develop communication skills, in particular to explain the causes and prevention of oral health diseases to the patient. Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed and promote teamwork approach. Respect patient's rights and privileges including patient's right to information and right to seek a second opinion

d. INTEGRATION:

At the conclusions of the course the student should be able to communicate the needs of the community efficiently, inform the society of all the recent methodologies in preventing oral disease.

e. KNOWLEDGE ABOUT INFECTION AND CROSS INFECTION IN DENTISTRY :

Knowledge about asepsis – disinfection and sterilization of instruments, clinical area/ personal care as per universal protection, and disposal of medical wastes in the appropriate modes. Students should be aware of the rules and regulations pertaining to maintenance of clinical set up and waste disposal.

f. COMPUTER PROFICIENCY :

Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes Basic operative skills in analysis of data and knowledge of multimedia. Students should utilize a combination of traditional classroom courses, and online courses. The following validation is required and must be completed.

i. Technological Requirements for all Graduate Students
ii. A laptop or desktop computer that supports the following requirements
    a. Operating system requirements
    b. Internet browser requirements
    c. Reliable and consistent access to the internet
    d. Antivirus software which is current and consistently updated
    e. Microsoft Office
    f. Adobe Reader (or equivalent to view PDF files)

3. **COMPETENCIES**

i. General skills:

- Apply knowledge& skills in day to day practice
- Apply principles of ethics
- Analyze the outcome of treatment
- Evaluate the scientific literature and information to decide the treatment
- Participate and involve in professional bodies
- Self-assessment & willingness to update the knowledge & skills from time to time
- Involvement in simple research projects
- Minimum computer proficiency to enhance knowledge and skills
- Refer patients for consultation and specialized treatment
- Basic study of forensic odontology and geriatric dental problems

ii. Practice Management:

- Evaluate practice location, population dynamics & reimbursement mechanism
- Co-ordinate & supervise the activities of allied dental health personnel
- Maintain all records
- Implement & monitor infection control and environmental safety programs
- Practice within the scope of one's competence

iii. Communication and Community Resources:

- Assess patients goals, values and concerns to establish rapport and guide patient care
- Able to communicate freely, orally and In writing with all concerned
- Participate in improving the oral health Of the individuals through community activities.

iv. Patient Care – Diagnosis:

- Obtaining patient's .history in a methodical way
- Performing thorough clinical examination
- Selection and interpretation of clinical, radiological and other diagnostic information
- Obtaining appropriate consultation
- Arriving at provisional, differential and final diagnosis

v. Patient Care - Treatment Planning:

- Integrate multiple disciplines into an individual comprehensive sequence treatment plan using diagnostic and prognostic information
- Ability to order appropriate investigations
- Recognition and initial management of medical emergencies that may occur during dental treatment
- Perform basic cardiac life support
- Management of pain including post operative
- Administration of all forms of local anaesthesia
- Administration of intra muscular and venous injections
- Prescription of drags, pre operative, prophylactic and therapeutic requirements
- Uncomplicated extraction of teeth
- Transalveolar extractions and removal of simple impacted teeth
- Minor oral surgical procedures
- Management of oro-facial infections
- Simple orthodontic appliance therapy ,
- Taking, processing and interpretation of various types of intra oral radiographs
- Various kinds of motivative procedures using different materials available
- Simple endodontic procedures
- Removable and fixed prosthodontics
- Various kinds of periodontal therapy

vi. Competencies specific to the subject

4. **TEACHING HOURS**

Lecture hours - 60 hours
Clinical hours -200 hours

5. **TEACHING METHODOLOGY**

Lectures
Group discussion

6. **THEORY SYLLABUS**

TOPIC	MUST KNOW	DESIRABLE TO KNOW	NICE TO KNOW
Introduction to Dentistry	Definition of Dentistry, History of dentistry. Scope, aims and objectives of Dentistry		
Public Health	Health & Disease:- Concepts, Philogophy, Definition and Characteristics Public Health:-Definition, Concepts, History of public health, General	Screening of disease. Public Health Administration:- Priority,Establishment, Manpower, private Practice Management, Hospital management	Nutrition in oral diseases Behavioural science: Definition of sociology, anthropology and psychology and their relevance in dental practice and community.
	Epidemiology: - Definition, objectives, methods Environmental Health: - Concepts, principles, protection, sources, purification, environmental sanitation of water, disposal of waste, sanitation, role in mass disaster Health care delivery system: Centre and state, oral health policy, primary health care, national programmes, health organisations.	Ethics and Jurisprudence: Professional liabilities, negligence, malpractice, consents, evidence, contracts and methods of identification in forensic dentistry Health Education: - Definition, concepts, principles, methods, and health education aids	
Dental Public Health	Definition and difference between community and clinical health. Epidemiology of dental diseases-dental caries, periodontal diseases, malocclusion, dental fluorosis ,oral cancer & TMJ		

	Survey procedures: Planning, implementation and evaluation, WHO oral health survey methods 1997, indices for dental diseases.		
	Delivery of dental care: Dental auxiliaries, operational and non-operational, incremental and comprehensive healthcare, school dental health. Payments of dental care: Methods of payments and dental insurance, Government plans Preventive Dentistry-definition, Levels, role of individual ,Community and .profession, fluorides in dentistry, plaque control programmes.		
Bio Statistics	Bio Statistics: - Introduction, collection of data, presentation of data, Measures of Central tendency, measures of dispersion, Tests of significance, Sampling and sampling techniques -types, errors, bias, blind trials and calibration.		
Research Methodology	Research Methodology: -Definition, types of research, designing a written protocol		
Health Information	Health Information: - Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes		
Practice Management	Dentist Act 1948 Dental Council of India Indian Dental Association	Maintenance of records/accounts/audit. Consumer Protection Act.	Place and locality Premises & layout

Bioethics

Bioethics is the application of ethics to the field of medicine and healthcare. Bioethics includes medical ethics, which focuses on issues in health care; research ethics, which focuses issues in the conduct of research; environmental ethics,

which focuses on issues pertaining to the relationship between human activities and the environment, and public health ethics.

7. **PRACTICALS/CLINICALS/FIELD PROGRAMME IN PUBLIC HEALTH DENTISTRY**

These exercises designed to help the student in IV year students:

1. Understand the community aspects of dentistry
2. Take up leadership role in solving community oral health programme

Exercises:

1. Collection of statistical data (demographic) on population in India, birth rates, morbidity and mortality, literacy, per capita income
2. Incidence and prevalence of common oral diseases like dental caries, periodontal disease, oral cancer, fluorosis at national and international levels
3. Preparation of oral health education material - posters, models, slides, lectures, play acting skits etc.
4. Oral health status assessment of the community using indices and WHO basic oral health Survey methods.
5. Exploring and planning setting of private dental clinics in rural, semi urban and urban locations, availment of finances for dental practices-preparing project report.
6. Visit to primary health centre-to acquaint with activities and primary health care delivery
7. Visit to water purification plant/public health laboratory/ centre for treatment of waste and sewage water
8. Visit to schools-to assess the oral health status of school children, emergency treatment and health education including possible preventive care at school (tooth brushing technique demonstration and oral rinse programme etc.)
9. Visit to institution for the care of handicapped, physically, mentally, or medically compromised patients
10. Preventive dentistry: in the department application of pit and fissure sealants, fluoride gel application procedure, A. R. T., Comprehensive health for 5 patients at least 2 patients

I. Complete Case History
Index:

1. Oral -hygiene indices simplified and origional- Green and Vermilion
2. Plaque index by Silness and Loe
3. Gingival Index by Loe and Silness

4. Periodontal Index- CPI and Russel
5. Dental Caries index: DMF: T and S, df: t and s
6. Fluorosis index by Dean

II. Health Education
1. Make one - Audio visual aid
2. Make a health talk

III. Practical work
1. Pit and fissure sealant
2. Topical fluoride application

Attendance requirement, Progress and Conduct
75% in theory and 75% in practical/clinical in each year .

METHODS OF EVALUATION:

Evaluation may be achieved by the following tested methods:
1. Written test
2. Practicals
3. Clinical examination
4. Viva voce

8. **THEORY EXAMINATION**: **(3 Hours)**

Elaborate on 2 X 10 = 20 Marks
Write Notes on 10 X 5 = 50 Marks

Total Marks 70 Marks
---

9. PRACTICAL AND CLINICAL EXAMINATION:
Practical & Clinical Evaluation:

Complete case history with two Oral indices - 90 marks

Viva Voce- 20 marks

	Examination	Internal Assessment	Viva	Total
Theory	70	10	20	100
Practicals	90	10	-	100
Total				200

10. FORMATIVE/INTERNAL ASSESSMENT

The continuing assessment examination (both Theory/Practical) held at least 3times in a particular year and best of two examinations should be considered. The Internal Assessment marks to be submitted to the University, once in every three months. The marks scored by the students shall be displayed on the Notice board and a copy forwarded by HOD shall be sent to the University once in three months.

11. RECORD NOTE/LOG BOOK:

Record shall be maintained and assessed periodically by faculty and HOD. Institution shall provide adequate number of cases as specified in Dental Council of India regulation for the students during clinical training and examinations.

12. **TEXT BOOKS**

1. Dentistry dental practice and community by David F. Striffler and Brain A. Burt . Edn- 983 W. B. Saunders company
2. Principles of Dental public health by James Morse Dunning, IV Edition 1986,Harward University Press.
3. Dental public health and community Ed by Anthony Jong Publication by the C.V.Mosby company 1981

4. Community oral health A –system approach by Patricia P. Cormier and Joyce I. Levy published by Appleton-century-Crofts/New York,1981
5. Community dentistry – A problem oriented approach by P.C. Dental Hand book series vol .8. by Stephen L. Silverman and Ames F. Tryon, series editor –Alvin F Gardener, PSG Publishing company Inc. Littleton Massachusetts , 1980
6. Dental public health- An introduction to public health dentistry. Edition by Geoffrey L. Slack and Brain Burt Published by John Wright and sons Bristol,1980.
7. Oral health surveys – Basic methods ,2013 Published by WHO GENEVA available at the regional office New Delhi
8. Preventive Medicine and Hygiene – By Maxcy and Rosenau , Published by Appleton century crofts , 1986
9. Preventive Dentistry – By J.O. Forrest published by John Wright and Sons Bristoli ,1980
10. Preventive Dentistry by Murray , 1997
11. Introduction to Bio- statistics By B.A.Mahajan
12. Research Methodology and Bio statistics .
13. Introduction to statistical methods By Grewal.
14. Text Book of Preventive and social Medicine by Park and park, 24th edition
15. Community Dentistry by Dr.Soben Peter. 5th Edition

13. REFERENCE BOOKS:

1. Dentistry Dental Practice and Community by David F. Striffler and Brian A. Burt, Edn. -1983, W.B.Saunders company
2. Principles of Dental Public Health by James Morse Dunning, IV Edition , 1986, Harvard University Press.
3. Dental Public Health and Community Dentistry Ed by Anthony Jong publication by The C.V. Mosby Company 1981.
4. Community Oral Health- A system approach by Patricia P.Cormier and Joyce I.Levy published by Appleton – Century – Crofts/New York, 1981
5. Community Dentistry – A problem oriented approach by P.C. Dental hand book series Vol 8 by Stephen L. Silverman and Ames F. Tryon, Series editor-Alvin F. Gardner, PSG Publishing company Inc.Littleton Massachuseltts, 1980.
6. Dental Public Health – An Introduction to Community Dentistry, Editted by Geoffrey L. Slack and Brian Burt, Published by John Wright and sons Bristol, 1980.
7. Oral Health Surveys – Basic Methods, 4th edition, 1997, Published by W.H.O. Geneva Available at the regional office New Delhi.
8. Preventive Medicine and Hygiene – By Maxcy and Rosenau, published by Appleton Century Crofts, 1986.
9. Preventive Dentistry – by J.O. Forrest published by John Wright and sons Bristol, 1980.
10. Preventive Dentistry by Murray, 1997.

11.Text Book of Preventive and Social Medicine by Park and Park, 14th edition.
12. Community Dentistry by Dr. Soben Peter.
13. Introduction to Bio-statistics by B.K. Mahajan
14. Research methodology and Bio-statistics
15. Introduction to Statistical Methods by Grewal.

14. CRI POSTING SCHEDULE AND ORIENTATION

1. The internees shall conduct health education sessions for individuals and groups on oral health public health nutrition, behavioral sciences, environmental health, preventive dentistry and epidemiology.

2. They shall conduct a short term epidemiological survey in the community, or in the alternate, participate in the planning and methodology.
3.They shall arrange effective demonstrations of:
   a) Preventive and interceptive procedures for prevalent dental diseases.
   b) Mouth-rinsing and other oral hygiene demonstrations -5Cases
   c) Tooth brushing techniques -5Cases
4. Conduction of oral health education programmes at
   A) School setting 2
   B) Community setting 2
   C) Adult education programmes 2
5. Preparation of Health Education materials 5
6. Exposure to team concept and National Health Care systems:
   a) Observation of functioning of health infrastructure.
   b) Observation of functioning of health care team including multipurpose workers male and female, health educators and other workers.
   c) Observation of atleast one National Health Programme.
   d) Observation of interlinkages of delivery of oral health care with Primary Health care. Mobile dental clinics, as and when available, should be provided for this teachings.

Period of Postings
Community Dentistry / Rural Services – 3 months