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8.1.10 COURSE SPECIFIC OUTCOME

ORAL MEDICINE AND RADIOLOGY

UNDERGRADUATE STUDENT

GOALS: The dental graduates during training in the institutions should acquire adequate knowledge, 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.

OBJECTIVES: The objectives are dealt under three headings a) Knowledge and understanding and (b) Skills (c) Attitudes.

a) Knowledge and understanding

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

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

(B) SKILLS:

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

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

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3. Possess skill to carry out certain investigative procedures and ability to interpret laboratory findings.
4. Promote oral health and help prevent oral diseases where possible.
5. Competent in the control of pain and anxiety among the patients during dental treatment.

(C) ATTITUDES:

A graduate develops during the training period the following attitudes.

1. Willing to apply the current knowledge of dentistry in the best interest of the patients and the community.
2. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
3. Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.
4. Willingness to participate in the CPED (Continuing Program for Dental Education) Programs to update the knowledge and professional skill from time to time.
5. To help and participate in the implementation of the national oral health policy.
6.

POST GRADUATE STUDENT

GOALS: The dental post graduates during training in the institutions should acquire adequate knowledge, skills and reasonable attitudes which are required for carrying out all activities appropriate to diagnosis and treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues.

At the end of 3 years of training the candidate should be able to

Knowledge: Theoretical, Clinical and Practical knowledge of all mucosal lesions, Diagnostic procedures pertaining to them and latest information of imaging modules.

1. Should have the adequate knowledge about common laboratory investigations and interpretation of their results
2. Should have adequate knowledge about medical complications that can arise while treating systemically compromised patients and take prior precautions/consent from the concerned medical specialist.
3. Have adequate knowledge about radiation health hazards, Radiation safety and protection.
4. Gain adequate knowledge of various extraoral radiographic procedures, TMJ radiography and Sialography.
5. Should be familiar with jurisprudence, ethics and understand the significance of dental records with respect to law.

Skills and Attitude: Three important skills need to be imparted

1. Diagnostic skills in recognition of oral lesions and their management
2. Research skills in handling scientific problems pertaining to oral treatment

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3. Clinical and didactic skills in encouraging younger doctors to attain learning objectives

Others

4. Able to identify precancerous and cancerous lesions of the oral cavity and refer to the concerned speciality for their management
5. Be aware of the importance of intra and extra oral radiographs in forensic identification and age estimation.
6. Competent to take Intraoral and extraoral radiographs and interpret the radiographic findings.
7. Be aware of the importance of intra-oral and extraoral radiographs in forensic identification and age estimation.

Attitude

Positive mental attitude and persistence of continued learning need to be inculcated.

PUBLIC HEALTH DENTISTRY

Goals

To prevent oral diseases and promote oral health.

Objective:

The students should be able to be trained at the end of final year

Knowledge:

1. At the end of the year student should have a knowledge of the basis of public health, public health problems, preventive dentistry and public health problems in India.
2. Able to perform oral health survey
3. Plan and executive National oral health policy with emphasis on oral health policy.
4. Able to identify the nutrition, environment and their role in health
5. To able to know basic knowledge of dental statistics.

Attitude:

1. The student should be able to practice of chair side to record case history and clinical examination diagnosis of all clinical procedures. Prevention of treatment on schedule recall and maintance of records.
2. Able to prepare oral health education material posters, models, lectures, play acting skits.
3. Visit to primary health centre to acquaint with activities and primary health care delivery
4. Able to conduct survey and use appropriate methods for oral health education.

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5. Taking up leadership role in solving community oral health programme.
6. Visit to school to assess the oral health status of school children, emergency treatment and health education including possible preventive care at school.
7. The student should be able to communicate the needs of the community efficiently and inform the society of all the recent methodologies in preventing oral disease.

ORAL AND MAXILLOFACIAL SURGERY

AIMS:

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 in to the in-patient management of maxillofacial problems.

OBJECTIVES:

The training program in Oral and Maxillofacial Surgery is structured to achieve the followingobjectives-

- Knowledge
- Skills
- Attitude

Knowledge

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

1. Able to apply the knowledge gained in the related medical subjects like pathology, microbiology andgeneral medicine in the management of patients with oral surgical problem.
2. Able to diagnose, manage and treat (understand the principles of treatment of) patients with oralsurgical problems.
3. Knowledge of range of surgical treatments.
4. Ability to decide the requirement of a patient to have oral surgical specialist opinion or treatment.
5. Understand the principles of in-patient management.
6. Understanding of the management of major oral surgical procedures and principles involved inpatient management.
7. Should know ethical issues and communication ability.

Skills:

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1. A graduate should have acquired the skill to examine any patient with an oral surgical problem inan 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 L.A. 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. Understanding of the management of major oral surgical problems and principles involved ininpatient management.

Attitude:

- Develop attitude to adopt ethical principles in all aspect of surgical practice, professional honesty and integrity are to be fostered. Surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Willing to share the knowledge and clinical experience with professional colleagues.
- Willing to adopt new techniques of surgical management developed from time to timebased on scientific research which are in the best interest of the patient
- Respect patient right and privileges, including patients right to information and right toseek a second opinion.
- Develop attitude to seek opinion from an allied medical and dental specialists as andwhen required.

PROGRAM-WISE LEARNING OUTCOMES
Department of Prosthodontics and Crown & Bridge

AIMS

To train the dental graduates so as to ensure higher level of competence in both general and specialty areas of Prosthodontics and prepare candidates with teaching, research and clinical abilities including prevention and after care in Prosthodontics – removable dental prosthodontics, fixed dental prosthodontics (Crown &Bridge), implantology, maxillofacial prosthodontics and esthetic dentistry.

OBJECTIVES OF THE COURSE:

1. Training program for the dental graduates in Prosthetic dentistry– removable dental prosthodontics, fixed dental prosthodontics (Crown & Bridge),

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implantology, maxillofacial prosthodontics and esthetic dentistry and Crown & Bridge including Implantology is structured to achieve knowledge and skill in theoretical and clinical laboratory, attitude, communicative skills and ability to perform research with a good understanding of social, cultural, educational and environmental background of the society.

2. To have adequate acquired knowledge and understanding of applied basic and systemic medical sciences, both in general and in particularly of head and neck region.
3. The postgraduates should be able to provide Prosthodontic therapy for patients with competence and working knowledge with understanding of applied medical, behavioral and clinical science, that are beyond the treatment skills of the general BDS graduates and MDS graduates of other specialties,
4. To demonstrate evaluative and judgment skills in making appropriate decisions regarding prevention, treatment, after care and referrals to deliver comprehensive care to patients.

KNOWLEDGE:

The candidate should possess knowledge of applied basic and systemic medical sciences.

1. On human anatomy, embryology, histology, applied in general and particularly to head and neck, Physiology & Biochemistry, Pathology Microbiology & virology; health and diseases of various systems of the body (systemic) principles in surgery and medicine, pharmacology, nutrition, behavioral science, age changes, genetics, Immunology, Congenital defects & syndromes and Anthropology, Bioengineering, Bio-medical & Biological Principles
2. The student shall acquire knowledge of various Dental Materials used in the specialty and be able to provide appropriate indication, understand the manipulation characteristics, compare with other materials available, be adept with recent advancements of the same.
3. Students shall acquire knowledge and practice of history taking, Diagnosis, treatment planning, prognosis, record maintenance of oral, craniofacial and systemic region.
4. Ability for comprehensive rehabilitation concept with pre prosthetic treatment plan including surgical re-evaluation and prosthodontic treatment planning, impressions, jaw relations, utility of face bows, articulators, selection and positioning of teeth, teeth 43 arrangement for retention, stability, esthetics, phonation, psychological comfort, fit and insertion.
5. Instructions for patients in after care and preventive Prosthodontics and management of failed restorations shall be possessed by the students.
6. Understanding of all the applied aspects of achieving physical, psychological well-being of the patients for control of diseases and / or treatment related syndromes with the patient satisfaction and restoring function of Cranio mandibular system for a quality life of a patient.

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7. Ability to diagnose and plan treatment for patients requiring Prosthodontic therapy
8. Ability to read and interpret radiographs, and other investigations for the purpose of diagnosis and treatment planning.
9. The theoretical knowledge and clinical practice shall include principles involved for support, retention, stability, esthetics, phonation, mastication, occlusion, behavioral, psychological, preventive and social aspects of Prosthodontics science of Oral and Maxillofacial Prosthodontics and Implantology
10. Tooth and tooth surface restorations, Complete denture Prosthodontics, removable partial denture Prosthodontics, fixed prosthodontics and maxillofacial and Craniofacial Prosthodontics, implants and implant supported Prosthodontics, T.M.J. and occlusion, craniofacial esthetics, and biomaterials, craniofacial disorders, problems of psychogenic origin.
11. Should have knowledge of age changes, geriatric psychology, nutritional considerations and prosthodontic therapy in the aged population.
12. Should have ability to diagnose failed restoration and provide prosthodontic therapy and after care.
13. Should have essential knowledge on ethics, laws, and Jurisprudence and Forensic Odontology in Prosthodontics.
14. Should know general health conditions and emergency as related to prosthodontics treatment like allergy of various materials and first line management of aspiration of prosthesis
15. Should identify social, cultural, economic, environmental, educational and emotional determinants of the patient and consider them in planning the treatment.
16. Should identify cases, which are outside the area of his specialty / competence, refer them to appropriate specialistsand perform interdisciplinary case management.
17. To advice regarding case management involving surgical and interim treatment
18. Should be competent in specialization of team management in craniofacial prosthesis design.
19. To have adequate acquired knowledge, and understanding of applied basic, and systemic medical science knowledge in general and in particular to head and neck regions.
20. Should attend continuing education programmes, seminars and conferences related to Prosthodontics, thus updating himself/herself.
21. To teach and guide his/her team, colleagues and other students.
22. Should be able to use information technology tools and carry out research both in basic and clinical areas, with the aim of publishing his/ her work and presenting his/her work at various scientific forums.
23. Should have an essential knowledge of personal hygiene, infection control, prevention of cross infection and safe disposal of waste, keeping in view the risk of transmission of potential communicable and transmissible infections like Hepatitis and HIV.

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24. Should have an ability to plan and establish Prosthodontics clinic/hospital teaching department and practice management.
25. Should have a sound knowledge (of the applications in pharmacology, effects of drugs on oral tissues and systems of body and in medically compromised patients.

SKILLS

1. The candidate should be able to examine the patients requiring Prosthodontic therapy, investigate the patient systemically, analyze the investigation results, radiographs, diagnose the ailment, plan the treatment, communicate it with the patient and execute it.
2. To understand the prevalence and prevention of diseases of craniomandibular system related to prosthetic dentistry.
3. The candidate should be able to restore lost functions of stomatognathic system like mastication, speech, appearance and psychological comforts by understanding biological, biomedical, bioengineering principles and systemic conditions of the patients to provide quality health care in the craniofacial regions.
4. The candidate should be able to demonstrate good interpersonal, communication skills and team approach in interdisciplinary care by interacting with other specialties including medical specialty for planned team management of patients for craniofacial & oral acquired and congenital defects, temporomandibular joint syndromes, esthetics, Implant supported Prosthetics and problems of Psychogenic origins.
5. Should be able to demonstrate the clinical competence necessary to carry out appropriate treatment at higher level of knowledge, training and practice skills currently available in their specialty area with a patient centered approach.
6. Should be able to interpret various radiographs like IOPA, OPG, CBCT and CT. Should and be able to plan and modify treatment plan based on radiographic findings
7. Should be able to critically appraise articles published and understand various components of different types of articles and be able to gather the weight of evidence from the same
8. To identify target diseases and create awareness amongst the population regarding Prosthodontic therapy.
9. To perform Clinical and Laboratory procedures with a clear understanding of biomaterials, tissue conditions related to prosthesis and have required dexterity & skill for performing clinical and laboratory all procedures in fixed, removable, implant, maxillofacial, TMJ and esthetics Prosthodontics.
10. To carry out necessary adjunctive procedures to prepare the patient before prosthesis like tissue preparation and preprosthetic surgery and to prepare the patient before prosthesis / prosthetic procedures
11. To understand demographic distribution and target diseases of Cranio mandibular region related to Prosthodontics

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ATTITUDE

1. To adopt ethical principles in Prosthodontic practice, Professional honesty, credibility and integrity are to be fostered. Treatment to be delivered irrespective of social status, caste, creed or religion of patient.
2. Should be willing to share the knowledge and clinical experience with professional colleagues.
3. Should develop an attitude towards quality, excellence, non-compromising in treatment.
4. Should be able to self-evaluate, reflect and improve on their own.
5. Should pursue research in a goal to contribute significant, relevant and useful information, concept or methodology to the scientific fraternity.
6. Should be able to demonstrate evidence-based practice while handling cases
7. Should be willing to adopt new methods and techniques in prosthodontics from time to time based on scientific research, which are in patient's best interest.
8. Should respect patient's rights and privileges, including patient's right to information and right to seek second opinion

COMMUNICATIVE ABILITIES:

1. To develop communication skills, in particular and to explain treatment options available in the management.
2. To provide leadership and get the best out of his / her group in a congenial working atmosphere.
3. Should be able to communicate in simple understandable language with the patient and explain the principles of prosthodontics to the patient. He/She should be able to guide and counsel the patient with regard to various treatment modalities available.
4. To develop the ability to communicate with professional colleagues through various media like Internet, e-mails, videoconferences etc. to render the best possible treatment. Should demonstrate good explanatory and demonstrating ability as a teacher in order to facilitate learning among students

DEPARTMENT OF CONSERVATIVE DENTISTRY AND ENDODONTICS

VISION: To be globally recognized for our healthcare services, education and research.

MISSION:

To enhance and strengthen the knowledge, research, clinical care and service efforts of our students to inculcate social and moral values and to achieve global excellence.

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OBJECTIVES:

1. Provide students with a strong intellectual and technical knowledge of restorative dentistry.
2. Teach students to apply their knowledge to deliver comprehensive dental care within the framework of each patient's cultural, medical, social and dental conditions.
3. Instill the importance of aspiring to excellence and honest self assessment
4. Emphasize the importance of life-long learning for successful practice of dentistry
5. Teach students to put ethical considerations first in the practice of dentistry
6. Highlight the importance of research and its outcomes for enhanced healthcare services.

PEDIATRIC DENTISTRY

OBJECTIVE:

At the end of 3 years of training the candidate should be able to

1. Create not only a good oral health in the child but also a good citizen tomorrow.

2. Instill a positive attitude and behavior in children

3. Understand the principles of prevention and preventive dentistry right from birth to adolescence

4. Guide and counsel the parents in regards to various treatment modalities including different facets of preventive dentistry

5. Prevent and intercept developing malocclusion.

SKILLS

1. Obtain proper clinical history, methodological examination of the child patient, perform essential diagnostic procedures and interpret them, and arrive at a reasonable diagnosis and treat appropriately

2. Be competent to treat dental diseases which are occurring in child patient.

3. Manage to repair and restore the lost tooth structure to maintain harmony between both hard and soft tissues of the oral cavity.

4. Manage the disabled children effectively and efficiently, tailored to the needs of individual requirement and conditions.

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ATTITUDES

1. Develop an attitude to adopt ethical principles in all aspects of Pedodontic practice.

2. Professional honesty and integrity are to be fostered .

3. Treatment care is to be delivered irrespective of the social status, cast, creed, and religion of the

patients.

4. Willingness to share the knowledge and clinical experience with professional colleagues.

5. Willingness to adopt, after a critical assessment, new methods and techniques of Pedodontic management developed from time to time, based on scientific research, which are in the best interest of the child patient.

6. Respect child patient's rights and privileges, including child patients right to information and right to seek a second opinion.

7. Develop an attitude to seek opinion from allied medical and dental specialties, as and when required.

ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

OBJECTIVES:

The training programme in Orthodontics is to structure and achieve the following four objectives.

Knowledge:

1. The dynamic interaction of biologic processes and mechanical forces acting on the stomatognathic system during orthodontic treatment.

2. The etiology, pathophysiology, diagnosis and treatment planning of various common Orthodontic problems

3. Various treatment modalities in Orthodontics – preventive, interceptive and corrective.

4. Basic sciences relevant to the practice of Orthodontics

5. Interaction of social, cultural, economic, genetic and environmental factors and their relevance to management of oro – facial deformities

6. Factors affecting the long-range stability of orthodontic correction and their management.

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7. Personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste, keeping in view the high prevalence of Hepatitis and HIV and other highly contagious diseases.

Skills:

1. To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedures, and interpret them and arrive at a reasonable diagnosis about the Dento-facial deformities.

2. To be competent to fabricate and manage the most appropriate appliance – intra or extra oral, removable or fixed, mechanical or functional, and active or passive – for the treatment of any orthodontic problem to be treated singly or as a part of multidisciplinary treatment of oro-facial deformities.

Attitude:

1. Develop an attitude to adopt ethical principles in all aspects of Orthodontic practice.

2. Professional honesty and integrity are to be fostered.

3. Treatment care is to be delivered irrespective of the social status, cast, creed and religion of the patients.

4. Willingness to share the knowledge and clinical experience with professional colleagues

5. Willingness to adopt, after a critical assessment, new methods and techniques of orthodontic management developed from time to time based on scientific research, which are in the best interest of the patient

6. Respect patients' rights and privileges, including patients right to information and right to seek a second opinion

7. Develop attitude to seek opinion from allied medical and dental specialists as and when required.

Communication Skills:

1. Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular Dento-facial problem and to obtain a true informed consent from them for the most appropriate treatment available at that point of time.

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

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PERIODONTOLOGY
UG

GOALS AND OBJECTIVES

GOALS:

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 the 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.

OBJECTIVES: PERIODONTOLOGY

OBJECTIVES:

The student shall acquire the skill to perform dental scaling ,diagnostic tests of periodontal diseases; to use the instruments for periodontal therapy and maintenance of the same.

The student shall develop attitude to impart the preventive measures namely, the prevention of periodontal diseases and prevention of the progress of the disease. The student shall also develop an attitude to perform the treatment with full aseptic precautions; shall develop an attitude to prevent iatrogenic diseases; to conserve the tooth to the maximum possible time by maintaining periodontal health and to refer the patients who require specialist's care.

The objectives are dealt under three headings (a) Knowledge and understanding (b) skills and (c) Attitudes.

(A) KNOWLEDGE AND UNDERSTANDING:

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

1. Adequate knowledge of the scientific foundations on which dentistry is based and good understanding of various relevant scientific methods, principles of biological functions and be able to evaluate and analyse scientifically various established facts and data.
2. Adequate knowledge of the development, structure and function of the teeth, mouth and jaws and associated tissues both in health and disease and their relationship and effect on general state of health and also 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

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diseases of the teeth, mouth and jaws and preventive diagnostic and therapeutic aspects of dentistry.

4. Adequate clinical experience required for general dental practice.
5. Adequate knowledge of 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.

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

(C) **ATTITUDES**:

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

1. Willing to apply the current knowledge of dentistry in the best interest of the patients and thecommunity.
2. Maintain a high standard of professional ethics and conduct and apply these in all aspects ofprofessional life.
3. Seek to improve awareness and provide possible solutions for oral health problems and needsthrough out the community.
4. Willingness to participate in the CPED Programmes to update the knowledge and professionalskill from time to time.
5. To help and participate in the implementation of the national oral health policy.

PG
PERIODONTOLOGY:

OBJECTIVES: The following objectives are laid out to achieve the goals of the course

A) KNOWLEDGE:

Discuss historical perspective to advancement in the subject proper and related topics. • Describe etiology, pathogenesis, diagnosis and management of common periodontal diseases with emphasis on Indian population • Familiarize with the biochemical, microbiologic and immunologic genetic aspects of periodontal

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pathology • Describe various preventive periodontal measures • Describe various treatment modalities of periodontal disease from historical aspect to currently available ones • Describe interrelationship between periodontal disease and various systemic conditions • Describe periodontal hazards due to estrogenic causes and deleterious habits and prevention of it • Identify rarities in periodontal disease and environmental/Emotional determinates in a given case • Recognize conditions that may be outside the area of his/her Speciality/ competence and refer them to an appropriate Specialist • Decide regarding non-surgical or surgical management of the case • Update the student by attending courses, conferences and seminars relevant to periodontics or by self-learning process. • Plan out/ carry out research activity both basic and clinical aspects with the aim of publishing his/her work in scientific journals • Reach to the public to motivate and educate regarding periodontal disease, its prevention and consequences if not treated • Plan out epidemiological survey to assess prevalence and incidence of early onset periodontitis and adult periodontitis in Indian population (Region wise) • Shall develop knowledge, skill in the science and practice of Oral Implantology • Shall develop teaching skill in the field of Periodontology and Oral Implantology • Principals of Surgery and Medical Emergencies. • To sensitize students about inter disciplinary approach towards the soft tissues of the oral cavity with the help of specialist from other departments.

B) SKILLS:

• Take a proper clinical history, thorough examination of intra oral, extra oral, medical history evaluation, advice essential diagnostic procedures and interpret them to come to a reasonable diagnosis • Effective motivation and education regarding periodontal disease maintenance after the treatment • Perform both non-surgical & education regarding periodontal disease, maintenance after the treatment • Perform both non-surgical and surgical procedures independently • Provide Basic Life Support Service (BLS) recognizes the need for advance life support and does the immediate need for that. • Human values, ethical practice to communication abilities 68 68 • Adopt ethical principles in all aspects of treatment modalities; Professional honesty & integrity are to be fostered. Develop Communication skills to make awareness regarding periodontal disease Apply high moral and ethical standards while carrying out human or animal research, Be humble, accept the limitations in his/her knowledge and skill, and ask for help from colleagues when needed, Respect patients rights and privileges, including patients right to information and right to seek a second opinion. • To learn the principal of lip repositioning and perio esthetics surgeries.

C) ATTITUDE:

• Develop attitude to adopt ethical principles in all aspect of surgical practice, professional honesty and integrity are to be fostered. Surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient. • Willing to share the knowledge and clinical experience with professional colleagues. • Willing to adopt new techniques of surgical management developed from time to time based on scientific research which are in the best interest of the patient • Respect patient right and privileges, including patients right to information and right to seek a second

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opinion. • Develop attitude to seek opinion from an allied medical and dental specialists as and when required.

D). Communication Skills: • Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular surgical problem and obtain a true informed consent from them for the most appropriate treatment available at that point of time • Develop the ability to communicate with professional colleagues. • Develop ability to teach undergraduates.

COURSE OUTCOME DETAILS FROM DEPARTMENT OF ORAL PATHOLOGY

Objectives:

1. To train the students so as to ensure that he/she is competent in diagnosis of general and special pathology pertaining to head and neck
2. To train the students adequately in histopathological diagnosis of common oral lesions
3. To train the students in conducting oral and dental awareness program for the society at large
4. To train the students adequately in designing and conducting research projects
5. To involve students in community based programs actively

Knowledge and Skill:

1. To impart skill and knowledge to undergraduates and post graduates in the areas of surgical and clinical oral and Maxillofacial Pathology
2. To Foster research in areas of Oral and Maxillofacial Pathology to increase understanding of Oral and paraoral disease, its recognition, its treatment and its prevention
3. To provide service to community, college, university, state and national dental organization and their constituents and other health care professions.

1. HUMAN ANATOMY, EMBRYOLOGY, HISTOLOGY & MEDICAL GENETICS

A) GOAL

The students should gain the knowledge and insight into, the functional anatomy of the normal human head and neck, functional histology and an appreciation of the genetic basis of inheritance and disease, and the embryological development of clinically important structures. So that relevant anatomical & scientific foundations are laid down for the clinical years of the BDS course.

B) OBJECTIVES :

a) KNOWLEDGE & UNDERSTANDING:

At the end of the 1st year BDS course in Anatomical Sciences the undergraduate student is Expected to:

1. Know the normal disposition of the structures in the body

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while clinically examining apatient and while conducting clinical procedures.
2. Know the anatomical basis of disease and injury.
3. Know the microscopic structure of the various tissues, a pre-requisite for understanding ofthe disease processes.
4. Know the nervous system to locate the site of lesions according to the sensory and or motordeficits encountered.
5. Have an idea about the basis of abnormal development, critical stages of development, effectsof teratogens, genetic mutations and environmental hazards.
6. Know the sectional anatomy of head neck and brain to read the features in radiographs andpictures taken by modern imaging techniques.
7. Know the anatomy of cardio-pulmonary resuscitation.

b) **SKILLS**

1. To locate various structures of the body and to mark the topography of the living anatomy.
2. To identify various tissues under microscope.
3. To identify the features in radiographs and modern imaging techniques.
4. To detect various congenital abnormalities.

c) **INTEGRATION**

By emphasising on the relevant information and avoiding unwanted details, the anatomy taught integrally with other basic sciences & clinical subjects not only keeps the curiosity alive in the learner but also lays down the scientific foundation for making a better doctor, a benefit to the society.

This insight is gained in a variety of ways:

1) Lectures & small group teaching
2) Demonstrations
3) Dissection of the human cadaver
4) Study of dissected specimens
5) Osteology
6) Surface anatomy on living individual
7) Study of radiographs & other modern imaging techniques.
8) Study of Histology slides.
9) Study of embryology models
10) Audio-visual aids

Throughout the course, particular emphasis is placed on the functional correlation, clinical application& on integration with teaching in other bio dental disciplines.

D) **AN OUTLINE OF THE COURSE CONTENT:**

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1. General anatomy: Introduction of anatomical terms and brief outline of various systems ofthe body.
2. Regional anatomy of head & neck with osteology of bones of head & neck, with emphasis ontopics of dental importance.
3. General disposition of thoracic, abdominal & pelvic organs.
4. The regional anatomy of the sites of intramuscular & intra vascular injections, & lumbarpuncture.
5. General embryology & systemic embryology with respect to development of head & neck.
6. Histology of basic tissues and of the organs of gastroinstenstinal, respiratory, Endocrine,excretory systems & gonads.
7. Medical genetics.

BIOCHEMISTRY

AIMS AND SCOPE OF THE COURSE IN BIOCHEMISTRY

The major aim is to provide a sound but crisp knowledge on the biochemical basis of the life processes relevant to the human system and to dental/medical practice. The contents should be organised to build on the already existing information available to the students in the pre-university stage and reorienting. A mere rehash should be avoided.

The chemistry portion should strive towards providing information on the functional groups, hydrophobic and hydrophilic moieties and weak valence forces that organise macromolecules. Details on structure need not be emphasised.

Discussion on metabolic processes should put emphasis on the overall change, interdependence and molecular turnover. While details of the steps may be given, the student should not be expected to memorise them. An introduction to biochemical genetics and molecular biology is a must but details should be avoided. The exposure to antivitamins, antimetabolites and enzyme inhibitors at this stage, will provide a basis for the future study of medical subjects. An overview of metabolic regulation is to be taught by covering hormonal action, second messengers and regulation of enzyme activities. Medical aspects of biochemistry should avoid describing innumerable functional tests, most of which are not in vogue. Cataloguing genetic disorders under each head of metabolism is unnecessary. A few examples which correlate genotype change to functional changes should be adequate.

At the end of the course the student would be able to acquire a useful core of information, which can be retained for a long time. Typical

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acid tests can be used to determine what is to be taught or what is to be learnt. A few examples are given below.

1. Need not know the structure of cholesterol. Should know why it cannot be carried free inplasma.
2. Mutarotation should not be taught. Student should know why amylase will not hydrolysecellulose.
3. Need not know the details of alpha - helix and beta - pleats in proteins. Should know why haemoglobin is globular and keratin is fibrous.
4. Need not know mechanism of oxidative phosphorylation. Should know more than 90 % of ATP is formed by this process.
5. Need not know details of the conversion of pepsinogen to pepsin. Should know hydrochloric acid cannot break a peptide bond at room temperature.
6. Need not remember the steps of glycogenesis. Should know that excess intake of carbohydrate will not increase glycogen level in liver or muscle.
7. Need not know about urea or cretinine clearance tests. Should know the basis of increase of urea and creatinine in blood in renal insufficiency.
8. Need not know the structure of insulin. Should know why insulin level in circulation is normal in most cases of maturity onset diabetes.
9. Need not know the structural details of ATP. Should know why about 10 g of ATP in the body at any given time meets all the energy needs.
10. Need not know the mechanism of action of prolylhydroxylase. Should know why the gum bleeds in scurvy.
11. Need not know the structure of Vitamin K. Should know the basis of internal bleeding arising due to its deficiency.
12. Need not remember the structure of HMGCoA. Should know why it does not lead to increased cholesterol synthesis in starvation.

GENERAL MEDICINE

GUIDELINES:

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Special emphasis should be given throughout on the importance of various diseases as applicable todentistry.

1. Special precautions/ contraindication of anaesthesia and various dental proced
2. Oral manifestations of systemic diseases.
3. Medical emergencies in dental practice.

A dental student should be taught in such a manner he/she is able to record the arterial pulse, blood pressure and be capable of suspecting by sight and superficial examination of the body – diseases of the heart, lungs, kidneys, blood etc. He should be capable of handling medical emergencies encountered in dental practice.

CLINICAL TRAINING:

The student must be able to take history, do general physical examination (including build, nourishment, pulse, BP, respiration, clubbing, cyanosis, jaundice, lymphadenopathy, oral cavity) and be able to examine CVS, RS and abdomen and facial nerve.

GENERAL PATHOLOGY

AIM:

At the end of the course the student should be competent to: Apply the scientific study of disease processes, which result in morphological and functional alterationsin cells, tissues and organs to the study of pathology and the practice of dentistry.

OBJECTIVES:

Enabling the student

1. To demonstrate and apply basic facts, concepts and theories in the field of Pathology.
2. To recognize and analyze pathological changes at macroscopically and microscopical levels andexplain their observations in terms of disease processes.
3. To Integrate knowledge from the basic sciences, clinical medicine and dentistry in the study ofPathology.
4. To demonstrate understanding of the capabilities and limitations of morphological Pathology in itscontribution to medicine, dentistry and biological research.
5. To demonstrate ability to consult resource materials outside lectures, laboratory and tutorialclasses.

GENERAL SURGERY

AIMS:

To acquaint the student with various diseases, which may require surgical expertise and to train the student to analyze the history and be able to do a thorough physical examination of the patient. The diseases as

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related to head and neck region are to be given due importance, at the same time other relevant surgical problems are also to be addressed. At the end of one year of study the student should have a good theoretical knowledge of various ailments, and be practically trained to differentiate benign and malignant diseases and be able to decide which patient requires further evaluation.

MICROBIOLOGY

AIM:

To introduce the students to the exciting world of microbes. To make the students aware of various branches of microbiology, importance, significance and contribution of each branch to mankind and other fields of medicine. The objectives of teaching microbiology 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.

OBJECTIVES:

A. KNOWLEDGE AND UNDERSTANDING

At the end of the Microbiology course the student is expected to :

1. Understand the basics of various branches of microbiology and able to apply the knowledgerelevantly.
2. Apply the knowledge gained in related medical subjects like General Medicine and
   General Surgery and Dental subjects like Oral Pathology, Community Dentistry, Periodontics, Oral Surgery, Pedodontics, Conservative Dentistry and Oral medicine in higher classes.
3. Understand and practice various methods of Sterilisation and disinfection in dental clinics.
4. Have a sound understanding of various infectious diseases and lesions in the oral cavity.

A. SKILLS

1. Student should have acquired the skill to diagnose, differentiate various oral lesions.
2. Should be able to select, collect and transport clinical specimens to the laboratory.
3. Should be able to carry out proper aseptic procedures in the dental clinic.

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GENERAL AND DENTAL PHARMACOLOGY AND THERAPEUTICS

GOAL:

The broad goal of teaching under graduate students in pharmacology is to inculcate rational andscientific basis of therapeutics keeping in view of dental curriculum and Profession.

OBJECTIVES:

At the end of the course the student shall be able to:

i) Describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs in general and in dentistry in particular.

ii) List the indications, contraindications; interactions, and adverse reactions of commonly used drugs with reason.

iii) Tailor the use of appropriate drugs in disease with consideration to its cost, efficacy, safety for individual and mass therapy needs.

iv) Indicate special care in prescribing common and essential drugs in special medical situations such as pregnancy, lactation, old age, renal, hepatic damage and immuno compromised patients.

v) Integrate the rational drug therapy in clinical pharmacology.

vi) Indicate the principles underlying the concepts of "Essential drugs".

SKILLS:

At the end of the course the student shall be able to:

1) Prescribe drugs for common dental and medical ailments.
2) To appreciate adverse reactions and drug interactions of commonly used drugs.
3) Observe experiments designed for study of effects of drugs.
4) Critically evaluate drug formulations and be able to inte

INTEGRATION:

Practical knowledge of use of drugs in clinical practice will be acquired throughintegrated teaching with clinical departments.

HUMAN PHYSIOLOGY

A) GOAL

The broad goal of the teaching undergraduate students in Human Physiology aims at providing the student comprehensive knowledge of the normal functions of the organ systems of the body to facilitate an understanding of the physiological basis of health and disease.

OBJECTIVES

a) KNOWLEDGE

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At the end of the course, the student will be able to:

1. Explain the normal functioning of all the organ systems and their interactions for well co-ordinatedtotal body function.
2. Assess the relative contribution of each organ system towards the maintenance of the milieuinterior.
3. List the physiological principles underlying the pathogenesis and treatment of disease.

b) **SKILLS**

At the end of the course, the student shall be able to :

1. Conduct experiments designed for the study of physiological phenomena.
2. Interprete experimental and investigative data
3. Distinguish between normal and abnormal data derived as a result of tests which he/she hasperformed and observed in the laboratory.

c) **INTEGRATION**

At the end of the integrated teaching the student shall acquire an integrated knowledge of organstructure and function and its regulatory mechanisms.

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Methods of Assessment of Learning Outcomes:

Learning outcomes	Technique of assessment
Adequate knowledge base attained	3 Continuous Internal assessments theory and viva. 10 marks for theory internal marks which takes care of students' knowledge base. 10 marks practical marks are based on clinical performance on patients.
Recording of case history -both history taking and clinical examination	UG- Log books for recording case history and evaluation PG- recording case history and evaluation
Attaining adequate practical skills	UG-Preclinical work in non-clinical and treatment on patients in clinical departments. Log books PG- Clinical work in their respective departments. Log books
Attaining oration skills and communication skills	UG- case history presentation and Viva PG- seminar presentation, Case history and viva. Evaluation forms.
Ability to carry out research	UG-Research is presented and evaluated internally by the ethical committee. PG-Dissertation submitted to university for evaluation.
Ability to search for and use scientific literature	UG- Search for small topics for extempore presentation. (seminars) PG-Journal clubs choose the article for critical appraisal -presentation

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Revised Ordinance Governing

BACHELOR OF DENTAL SURGERY (BDS)

Degree Course 2011

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RAJIV GANDHI UNIVERSITY OF
HEALTH SCIENCES KARNATAKA

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Revised Ordinance Governing

Bachelor of Dental Surgery (BDS)

Degree Course 2011

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SECTION II: Aims and Objectives of BDS Course
SECTION III: Regulation Relating to BDS Course
SECTION IV: B. D.S course Syllabus

I BDS

I. General Human Anatomy including Embryology and Histology.
ii. General Human Physiology , Biochemistry, Nutrition and Deities.
iii. Dental Anatomy, Embryology and Oral Histology.
iv. Dental Materials.
v. Preclinical Prosthodontics and Crown & Bridge.

II BDS

I. General Pathology and Microbiology.
ii. General and Dental Pharmacology and Therapeutics.
iii. Dental Materials.
iv. Preclinical Conservative Dentistry.
v. Preclinical Prosthodontics and Crown & Bridge.
vi. Oral Pathology & Oral Microbiology.

III BDS

I. General Medicine.
ii. General Surgery.
iii. Oral Pathology and Oral Microbiology.
iv. Conservative Dentistry & Endodontics.
v. Oral & Maxillofacial Surgery.
vi. Oral Medicine and Radiology
vii. Orthodontics & Dentofacial Orthopaedics.
viii. Paediatric & Preventive Dentistry.
ix. Periodontology.
x. Prosthodontics and Crown & Bridge.
xi. Public Health Dentistry.

IV BDS

I. Orthodontics & Dentofacial Orthopaedics.
ii. Oral Medicine and Radiology.
iii. Paediatric & Preventive Dentistry.
iv. Periodontology.
v. Oral & Maxillofacial Surgery.
vi. Prosthodontics and Crown and Bridge.
vii. Conservative Dentistry & Endodontics.
viii. Public Health Dentistry.

SECTION V: Ethics in Dentistry

ರಾಜೀವ್ ಗಾಂಧಿ ಆರೋಗ್ಯ ವಿಜ್ಞಾನಗಳ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಕರ್ನಾಟಕ
4ನೇ ಟಿ ಬ್ಲಾಕ್, ಜಯನಗರ, ಬೆಂಗಳೂರು - 560 041.
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website : www.rguhs.ac.in, E-mail : rguhsregistrar@gmail.com

AUTH/BDS-Regulation/172/2011-12 27/01/2012

Ref. : ..... **NOTIFICATION** Date : .....

Sub: Implementation of DCI Revised BDS Regulations 2011 – Reg.
Ref:1) RGUHS Notification No.AUTH/Revised BDS Regulation-317/2008-09, dated:04/08/2008
2) DCI Notification in Gazette of India extraordinary No.DE-130-2011, dated:25/08/2011.
3) DCI letter No.DE-130-2011/B.2211, dated:26/08/2011.
4) Letter of Dean, Faculty of Dentistry, RGUHS, Bangalore No.DAPM RVDC/928/2011-12, dated: 27/01/2012.
5) Orders of Hon'ble Vice-Chancellor dated:28/01/2011.

In exercise of the powers conferred under Section 13(2) of RGUHS Act, 1994, Hon'ble Vice-Chancellor is pleased to order the "Implementation of DCI Revised BDS Course (3rd Amendment) Regulations, 2011" applicable to the students admitted from the year 2008-09. The students appearing the for IV BDS examination are required to appear for examination in the following subjects.

1. Oral Medicine & Radiology
2. Oral & Maxillofacial Surgery
3. Periodontics
4. Prosthodontics Crown & Bridge
5. Conservative Dentistry & Endodontics
6. Community Dentistry
7. Orthodontics
8. Pedodontics

The above Ordinance shall come into force with immediate effect.

By Order,

REGISTRAR

To

Principals of all Dental Colleges affiliated to RGUHS.

Copy to:

1. The Secretary to Governor, Governor's Secretariat, Raj Bhavan, Bangalore – 560 001.
2. Principal Secretary to Government, Health & Family Welfare Department, (Medical Education), Vikasa Soudha, Bangalore –560 001.
3. The Director, Department of Medical Education, Anand Rao Circle, Bangalore – 560 009.
4. Secretary, DCI, Aiwan-E-Galib Marg, Kotla Road, New Delhi - 110002
5. Dean, Faculty of Dentistry, RGUHS, Bangalore
6. Director, Curriculum Development Cell, RGUHS, Bangalore
7. PA to Vice-Chancellor / Registrar / Registrar (Eva.) / Finance Officer.
8. The Home Page of RGUHS Website– http://www.rguhs.ac.in/Authoritysection/Fellowship.html.
9. Office Copy/Guard File.

Annexure to University Notification dated :Auth/BDS-Regulation/172/2011-12,Dated 27/1/2012.

SECTION *I*

GOALS OF EDUCATION AND TRAINING IN DENTAL SCIENCE OF RGUHS

The Dental curriculum shall be oriented towards educating students of B.D.S. Course to:

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

Regular periodic assessment be done throughout the course. Examinations be designed with a view to assess not merely the knowledge but also practical and clinical skills, habits and values which are necessary for a graduate to carry out professional day to day work competently.

Towards achieving these goals every Dental College should:

- Evolve institutional objectives, which would be in consonance with the national goals and health policy. The institutional objectives should describe the attributes of their product.

- Shift the role of Dental teachers from merely imparting knowledge to that of a facilitator and motivator of student learning.

- Establish a Dental Education Unit for faculty development, preparation of learning resource materials and for improving evaluation methods.

SECTION *II*

AIMS AND OBJECTIVE OF BDS COURSE

Aims

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

Objectives

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

a. Knowledge and understanding

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

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

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

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

4. Adequate clinical experience required for general dental practice.

5. Adequate knowledge of biological function and 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
A graduate should be able to demonstrate the following skills necessary for practice of dentistry.

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

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

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

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

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

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

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

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

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

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

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

SECTION *III*

REGULATION RELATING TO BDS COURSE

I. ELIGIBILITY:

1.1 Qualifying Examination:

A candidate seeking admission to first BDS course:

a. Shall have passed the two years Pre-University Examination of Pre-University Board of Karnataka with English and Physics Chemistry and Biology as optional subjects. The candidate shall have passed subjects of English, Physics, Chemistry and Biology individually* also
OR

b. Shall have passed any other examination conducted by Boards/Councils/Intermediate Education established by State Governments/ Central Government and recognised as equivalent to two year Pre University examination by the Rajiv Gandhi University of Health Sciences/Association of Indian Universities (AIU), with English as one of the subjects and Physics, Chemistry and Biology as optional subjects and the candidate shall have passed subjects of English, Physics, Chemistry and Biology individually.
OR

c. Shall have passed Intermediate examination in Science of an Indian University/Board/Council or other recognised examining bodies with Physics, Chemistry and Biology, which shall include a practical test in these subjects and also English as compulsory subject. The candidate shall have passed subjects of English, Physics, Chemistry and Biology individually.
OR

d. Shall have passed pre- professional/ pre- medical examination with Physics, Chemistry and Biology, after passing either the higher secondary school examination. The pre-professional/ pre-medical examination, shall include a practical test in Physics, Chemistry and Biology and also English as compulsory subject.
OR

e. Shall have passed first year of the three year degree course of a recognised University with Physics, Chemistry and Biology including a practical test in these subjects provided the Examination is an 'University Examination' provided that the candidate shall have passed subjects of English,Physics, Chemistry and Biology individually in the pre university or other examinations mentioned in the clauses above.
OR

f. Shall have passed B.Sc. Examination of an Indian University, provided that he/she has passed the B.Sc. examination with not less than two of the following subjects: Physics, Chemistry, Biology (Botany, Zoology) provided the candidate has passed subjects of English, Physics, Chemistry and Biology individually in the qualifying examinations mentioned in clauses (a), (b) and ©.

1.2 Qualifying Marks:
The selection of students to dental colleges shall be based on merit provided that:

a. In case of admission on the basis of qualifying examination, a candidate for admission to BDS course must have passed individually in the subjects of Physics, Chemistry, Biology and English and must have obtained a minimum of 50% marks taken together in Physics, Chemistry and Biology in the qualifying examination. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or Other Backward Classes, the marks obtained in Physics, Chemistry and Biology taken together in qualifying examination be 40% instead of 50% as above and must have passing marks in English.

b. In case of admission on the basis of competitive entrance examination, a candidate must have passed individually in the subjects of Physics, Chemistry, Biology and English and must have obtained a minimum of 50% marks in Physics, Chemistry and Biology taken together at the qualifying examination and in addition must have come in the merit list prepared as a result of such competitive entrance examination by securing not less than 50% marks in Physics, Chemistry and Biology taken together in the competitive examination. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or Other Backward Classes notified by the Government, the marks obtained in Physics, Chemistry and Biology taken together in qualifying examination and competitive entrance examination be 40% instead of 50% as stated above. (Vide Amendment to DCI Regulations, 2007, notified in Gazette of Government of India dated 10.09.2007).

II. Age Requirement:

The candidate shall have completed the age of 17 years at the time of admission or will complete this age on 31st December of the year in which he/she seeks admission.

III. Duration of the Course:

Four academic years with 240 teaching days in each academic year,and One year of internship.

IV. Attendance requirement, Progress and Conduct:

Attendance requirement shall be as follows:

a. 75% in Theory and 75% in Practical/Clinicals in each subject in each year.

b. In case of subject in which the instructional programme extends through more than one academic year and hence there is no University Examination in the subject (i.e. non- exam going subjects), the attendance requirement shall not be less than 70% in Theory and Practical/ Clinical. However, at the time of appearing for the professional examination in the subject the candidate should satisfy the condition (a) above.

V. Titles of subjects of study

First Year
I. General Human Anatomy including Embryology and Histology.
ii. General Human Physiology and Biochemistry, Nutrition and Dietics.
iii. Dental Anatomy, Embryology and Oral Histology.
iv. Dental Materials.
v. Preclinical Prosthodontics and Crown & Bridge.

Second Year
I. General Pathology and Microbiology.
ii. General and Dental Pharmacology and Therapeutics.
iii. Dental Materials.
iv. Preclinical Conservative Dentistry.
v. Preclinical Prosthodontics and Crown & Bridge.
vi. Oral Pathology & Oral Microbiology.

Third Year
I. General Medicine.
ii. General Surgery.
iii. Oral Pathology and Oral Microbiology.
iv. Conservative Dentistry & Endodontics.
v. Oral & Maxillofacial Surgery.
vi. Oral Medicine and Radiology
vii. Orthodontics & Dentofacial Orthopaedics.
viii. Paediatric & Preventive Dentistry.
ix. Periodontology.
x. Prosthodontics and Crown & Bridge.
xi. Public Health Dentistry.

Final Year
I. Orthodontics & Dentofacial Orthopaedics.
ii. Oral Medicine and Radiology.
iii. Paediatric & Preventive Dentistry.
iv. Periodontology.
v. Oral & Maxillofacial Surgery.
vi. Prosthodontics and Crown and Bridge.
vii. Conservative Dentistry & Endodontics.
viii. Public Health Dentistry.

VI. Teaching Hours

Teaching hours for each subject from first to final year - Theory and Practical are shown in the Tables-I to V

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

Sl. No.	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	General Human Anatomy including Embryology, Osteology and Histology	100	175	--	275
2.	General Human Physiology, Biochemistry, Nutrition and Dietics	120 70	60 60	--	180 130
3.	Dental Materials	80	240	--	320
4.	Dental Anatomy, Embryology, and Oral Histology	105	250	--	355
5.	Dental Pharmacology and Therapeutics	70	20	--	90
6.	General Pathology & Microbiology	55 65	55 50	--	110 115
7.	General Medicine	60	--	90	150
8.	General Surgery	60	--	90	150
9.	Oral Pathology and Microbiology	145	130	--	275
10.	Oral Medicine and Radiology	65	--	170	235
11.	Paediatric & Preventive Dentistry	65	--	170	235
12.	Orthodontics & Dental Orthopaedics	50	--	170	220
13.	Periodontology	80	--	170	250
14.	Oral & Maxillofacial Surgery	70	--	270	340
15.	Conservative Dentistry and Endodontics	135	200	370	705
16.	Prosthodontics & Crown & Bridge	135	300	370	805
17.	Public Health Dentistry	60	--	200	260
	Total	1590	1540	2130	5200

Note: There should be a minimum of 240 teaching days every academic year consisting of 8 working hours including one hour of lunch break.
Internship-240x8 hours=1920 clinical hours.

TABLE - II Subjects and Hours of Instruction for First year B.D.S

Sl. No.	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	General Human Anatomy including Embryology, Osteology and Histology	100	175	--	275
2.	General Human Physiology,	120	60	--	180
3.	Biochemistry, Nutrition and Dietics	70	60	--	130
4.	Dental Anatomy, Embryology, and Oral Histology	105	250	--	355
5.	Dental Materials	20	40	--	60
6.	Preclinical Prosthodontics and Crown & Bridge	--	100	--	100
	Total	**415**	**685**	--	**1100**

TABLE - III Subjects and Hours of Instruction for Second year B.D.S

Sl. No.	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	General and Dental Pharmacology and Therapeutics	70	20	--	90
2.	General Pathology	55	55		110
3.	Microbiology	65	50	--	115
4.	Dental Materials	60	200	--	260
5.	Oral Pathology and Oral Microbilogy	25	50	--	75
6.	Preclinical Prosthodontics and Crown & Bridge	25	200		225
7.	Preclinical conservative Dentistry	25	200	--	225
	Total	**325**	**775**	--	**1100**

TABLE - IV Subjects and Hours of Instruction for Third year B.D.S

Sl. No.	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	General Medicine.	60	--	90	150
2.	General Surgery.	60	--	90	150
3.	Oral Pathology and Oral Microbiology.	120	80	--	200
4.	Conservative Dentistry & Endodontics.	30	--	70	100
5.	Oral & Maxillofacial Surgery.	20	--	70	90
6.	Oral Medicine and Radiology	20	--	70	90
7.	Orthodontics & Dentofacial Orthopaedics.	20	--	70	90
8.	Paediatric & Preventive Dentistry.	20	--	70	90
9.	Periodontology.	30	--	70	100
10.	Prosthodontics and Crown & Bridge.	30	--	70	100
	Total	**410**	**80**	**670**	**1160**

TABLE - V Subjects and Hours of Instruction for Fourth year B.D.S

Sl. No.	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	Orthodontics & Dentofacial Orthopaedics.	30	--	100	130
2.	Oral Medicine and Radiology.	45	--	100	145
3.	Paediatric & Preventive Dentistry.	45	--	100	145
4.	Periodontology.	50	--	100	150
5.	Oral & Maxillofacial Surgery.	50	--	200	250
6.	Prosthodontics and Crown and Bridge.	80	--	300	380
7.	Conservative Dentistry & Endodontics.	80	--	300	380
8.	Public Health Dentistry.	60	--	200	260
	Total	**440**	--	**1400**	**1840**

VII.Schedule of Examinations

The University shall conduct two examinations annually at an interval of not less than four to six months as notified by the University from time to time.

A candidate who satisfies the requirement of attendance, progress, and conduct as stipulated by the university shall be eligible to appear in the University examination. Certificate to the above effect should be produced from the Head of the Institution along with the application for examination and the prescribed fee.

VIII.Scheme of Examination

The scheme of examination of B.D.S. course shall be divided into 4 professional examinations, viz., I.B.D.S. Examination at the end of first academic year, II B.D.S. at the end of second academic year, III B.D.S. at the end of third academic year and Final year B.D.S. examination at the end of fourth academic year.

VIII. i. Internal Assessment

The internal assessment need not be limited to written tests. It should relate to other items such as maintenance of records, participation in seminars and group discussions, clinical case study, proficiency in carrying out practical or clinical skill or participation in projects and assignments (even) during vacation. These be evaluated objectively and recorded. The weightage given to internal assessment is 10% out of total marks assigned for a subject separetely for theory and practical/clinical examinations.

A minimum of three internal assessments to be held in an academic year and the average of these tests shall be sent to the university.

VIII. ii. University Examination:

There shall be two examinations annually conducted at an interval of not less than four to six months. The written examination in each subject shall consist of one paper of three hours duration and shall have maximum of 70 marks.

X. Type of questions and distribution of marks:

Each question paper shall be of 3 hours duration, carrying maximum marks of 70. There shall be three types of questions with distribution of marks as shown in Table VII:

Table - VII

Type of Questions	No. of Questions	Marks of Questions	Total Marks
Long Essay Type	2	10	20
Short Essay Type	8	5	40
Short Answer Type	5	2	10
GRAND TOTAL			**70**

Note: In case of Physiology & Biochemistry and Pathology &Microbiology
The distribution of marks and types of questions will be as follows:

1. In the subject of General Human Physiology and Biochemistry, Section 'A' (Gen. Physiology) shall contain one Long essay type question carrying 10 marks and second question containing three short Essay type questions carrying five marks each, third question containing five Short Answer questions carrying two marks each. Section 'B' (Biochemistry) shall contain one Long essay type question of 10 marks and second question containing three short Essay type questions of five marks each, third question containing five Short Answer type questions carrying two marks each. As shown in Table-VIII.

2. In the subject of Gen. Pathology, Section 'A' (Gen. Pathology) shall contain one Long essay type question carrying 10 marks and second question shall contain three Short Essay type question carrying five marks each, third question containing five Short Answer questions of two marks each. Section 'B' (Microbiology) shall contain one Long essay type question carrying 10 marks and second question shall contain three Short essay type questions carrying five marks each, third question containing five short answer questions of two marks each. As shown in Table-IX.

Table - VIII

	Type of Questions	No. of Questions	Marks of Questions	Total Marks
Physiology	Long Essay Type	01	10	10
	Short Essay Type	03	05	15
	Short Answer Type	05	02	10
	GRAND TOTAL			**35**

	Type of Questions	No. of Questions	Marks of Questions	Total Marks
Biochemistry Nutrition and Dietics	Long Essay Type	01	10	10
	Short Essay Type	03	05	15
	Short Answer Type	05	02	10
	GRAND TOTAL			**35**

TABLE - IX

	Type of Questions	No. of Questions	Marks of Questions	Total Marks
Pathology	Long Essay Type	01	10	10
	Short Essay Type	03	05	15
	Short Answer Type	05	02	10
	GRAND TOTAL			**35**

	Type of Questions	No. of Questions	Marks of Questions	Total Marks
Microbiology	Long Essay Type	01	10	10
	Short Essay Type	03	05	15
	Short Answer Type	05	02	10
	GRAND TOTAL			**35**

XI. Distribution of Marks in University Examination and Internal Assessment for various subjects from First year to Fifth year is shown in Table X:

TABLE-X
Distribution of Marks in University Examination and Internal Assessment for various subjects from First year to Fifth year :

	THEORY				PRACTICALS / CLINICALS			Grand Total
Subjects	University Paper	Viva voce	Internal Assessment	Total	University examination	Internal Assessment	Total	
I BDS 1. General Anatomy including Embryology and Histology	70	20	10	100	90	10	100	200
2 . Section- A General Human Physiology And	35	10	05	50	45	05	50	200
Section- B Biochemistry Nutrition and Dietics	35	10	05	50	45	05	50	
3. Dental Anatomy, Embryology and Oral Histology.	70	20	10	100	90	10	100	200

II BDS Section - A 1. General Pathology	35	10	05	50	45	05	50	200
Section - B & Microbiology	35	10	05	50	45	05	50	
2. General and Dental Pharmacology and Therapeutics	70	20	10	100	90	10	100	200
3. Dental Materials	70	20	10	100	90	10	100	200
4. *Pre-clinical Conservative Dentistry	--	20		20	60	20	80	100
5. *Pre-clinical Prosthodontics * No theory paper, Practical/Viva voce only.	--	20		20	60	20	80	100
III BDS 1. General Medicine	70	20	10	100	90	10	100	200
2. General Surgery	70	20	10	100	90	10	100	200
3. Oral Pathology and Oral Microbiology	70	20	10	100	90	10	100	200
IV BDS 1. Oral Medicine and Radiology	70	20	10	100	90	10	100	200
2. Paediatric & preventive dentistry	70	20	10	100	90	10	100	200
3. Orthodontics & Dento-facial orthopaedics	70	20	10	100	90	10	100	200
4. Periodontology	70	20	10	100	90	10	100	200
5. Prosthodontics and Crown and Bridge	70	20	10	100	90	10	100	200
6. Conservative Dentistry and Endodontics	70	20	10	100	90	10	100	200
7. Oral and maxillofacial Surgery.	70	20	10	100	90	10	100	200
8. Public Health Dentistry	70	20	10	100	90	10	100	200

XII.Eligibility to appear in University examination:

A candidate who has failed in any one subject only in either I year B.D.S or II year B.D.S or III year BDS university examination shall be permitted to study in the next class provided that inorder to avail the carry over facility such a candidate should fulfills the following requirements:

a. student shall have not less than 75% of attendance in Theory and Practical separately in all the examination subjects prescribed for that year.

b. should have appeared in all the examination subjects prescribed for that year in the University examination simultaneously.

A Candidate has to pass the carry over subject before being eligible to appear for higher B.D.S Examination.

XIII. Criteria for Pass in the University Examination:

1. For declaration of pass in a subject, a candidate shall secure 50% marks in the University examination both in Theory and Practical/Clinical examinations separately, as stipulated below :

a. For pass in Theory, a candidate shall secure 50% marks in aggregate in University theory examination i.e. marks obtained in University written examination, viva voce examination and internal assessment (theory) combined together i.e. fifty out of One hundred marks.

b. In the University Practical/clinical examination, a candidate shall secure 50% marks in aggregate i.e. Practical /Clinical and Internal Assessment combined together i.e. 50/100 marks.

c. In case of pre-clinical Prosthetic Dentistry and Pre-clinical Conservative Dentistry in II BDS, where there is no written examination, minimum for pass is 50% of marks in Practical and Viva voce combined together in University Examination including Internal Assessment i.e. 50/100 marks.

d. Successful candidates who obtain 65% of the total marks or more shall be declared to have passed the examination in First Class. Other successful candidates will be placed in Second Class. A candidate who obtains 75% and above is eligible for Distinction. Only those candidates who pass the whole examination in the first attempt will be eligible for distinction or class.

XIV. Field Programme in Community Dentistry:

As a part of community dentistry program, students in the Clinical years will have to attend the various dental camps/ field programmes as part fulfillment of requirements of BDS examination to the satisfaction of the head of the Institution.

XV. Miscellaneous:

A. Migration/ Transfer of Students

a. A student studying in a recognized Dental College may be allowed to migrate/ transfer to another recognized Dental College under another/same University provided the candidate has passed I B.D.S. examination.

b. The migration / transfer can be allowed by the University concerned within one month after the announcement of results of I B.D.S. examination. However, migration or transfer should be avoided in the middle of any year, and in no case before the completion of I BDS examination.

c. The number of students migrating/ transferring from one Dental College to another Dental College during one year will be kept to the minimum but should not exceed the limit of 5% of its intake subject to a maximum of five students in any one Dental College in one year.

d. Cases not covered under the above regulations may be referred to the Dental Council of India for consideration on individual merits.

e. Intimation about the admissions of migrated transferred students into any dental college should be sent to the Dental Council of India immediately.

Note: In cases where a candidate who seeks admission to this university has already completed subject(s), exemption in the subject(s) will be given after admitting the student to the particular year.

B. Re-admission of candidates who discontinued the course:

A candidate who discontinues the course is eligible for re-admission subject to the following conditions:

1. Provision for re-admission is only once during the entire course.

2. He/she should seek readmission within three years from the date of discontinuation of the course.

3. He/she should pay the prescribed fees for the year for which he/she seeks admission and cannot claim readmission on the strength of fees paid earlier.

4. If the candidate discontinues after University Examination, he/she should reappear for the subjects in which he/she failed before seeking admission to the next higher class by paying examination fee etc.

5. He/she should put in two terms of attendance in the class for which he/she seeks readmission before appearing for the University Examination.

SECTION *IV*

B.D.S COURSE SYLLABUS

I BDS HUMAN ANATOMY INCLUDING EMBRYOLOGY, OSTEOLOGY & HISTOLOGY

Theory -100 Hrs.

I. Introduction: 10 hrs.

Scope, subdivisions, definitions and interpretation of anatomical terms, planes, anatomical positions, elements of anatomy including fascia muscles, blood vessels, nerves, joints and lymph vessels.

II. Osteology of Head & Neck: 20 hrs.

Skull - exterior - Norma and vault : Interior - Cranial fossae. Individual bones - mandible, maxilla, frontal, parietal, occipital, temporal, zygomatic, ethmoid, sphenoid, vomer, palatine, nasal bones.

Cervical vertebrae in general; C 1, C 2 & C 7 in particular Hyoid bone.

III. Gross Anatomy of Head and Neck: 30 hrs.

a. Scalp - layers, blood supply, nerve supply, lymphatic drainage.
b. Face - Muscles, blood supply, nerve supply, lymphatic drainage, lacrimal apparatus.
c. Neck -
i. Cervical fascia
ii. Posterior triangle
iii. Anterior triangle - submental, digastric, carotid & muscular
iv. Midline structures of neck

d. Cranial cavity - meninges; dural folds and sinuses; Hypophysis cerebri.
e. Orbit - nerves, vessels, extrinsic muscles of eyeball.
f. Parotid region - parotid gland.
g. Temporal and infra-temporal fossae - muscles of mastication, Maxillary artery, maxillary nerve
and mandibular nerve.
h. Temporo-mandibular joint.
i. Submandibular region - submandibular salivary gland.
j. Thyroid and parathyroid glands.
k. Vessels of head & neck - Carotid, subclavian arteries, Internal jugular vein.
l. Mouth, tongue and palate.
m. Pharynx.

n. Larynx.
o. Cervical part of trachea and oesophagus.
p. Nasal cavity and para nasal air sinuses.
q. Lymphatic drainage of head & neck.
r. Joints of neck - atlanto - occipital, atlanto-axial.

IV. Neuroanatomy: 12 hrs.

a. Detailed description of cranial nerves - V, VII, IX, X (in the region of head and neck) XI, XII including their nuclei of origin, intra and extra cranial courses.
b. Cervical spinal nerves and cervical plexus.
c. Autonomic nervous system of head and neck.

V. Embryology: 12 hrs.

a. Gametogenesis - spermatogenesis and oogenesis, fertilisation implantation, germ layer formation, fetal membranes and placenta.
b. Development of branchial apparatus, pharyngeal arches, pouches and clefts.
c. Development of face, jaws, oral cavity, tongue, palate, nasal cavity, paranasal air sinuses, salivary glands, thyroid gland, hypophysis cerebri, temporo-mandibular joint.

VI. Histology: 16 hrs.

a. Introduction of cytology and histology.
b. Basic tissues - epithelial - simple; compound
c. Connective tissue - cells, fibres - collagen, elastic, reticular
d. Cartilage - hyaline, elastic, white fibro cartilages,
e. Spongy and compact bones - TS, LS
f. Muscular tissue - skeletal, cardiac and smooth,
g. Nervous tissue - peripheral nerve and ganglia.
h. Blood vessels - artery & vein.
i. Glands - serous, mucous, mixed salivary glands.
j. Lymphoid tissue - lymph node, palatine tonsil, thymus & Spleen.
k. Skin - hairy and non hairy
l. Endocrine glands - pituitary, thyroid, parathyroid, suprarenal & pancreas.
m. Lip, tongue & oesophagus
n. Trachea and lung.

PRACTICALS

70 Classes of (2 1/2 hrs. each) (175 hrs)

- The following topics are included for examination - MUST KNOW.

Dissection Topics:

1. Scalp
2. Face including deeper dissection
3. Posterior triangle of neck.
4. Anterior triangles of neck -
   a. median region
   b. digastric
   c. Carotid triangles.
5. Deep dissection of neck -
   a. Thyroid gland
   b. Great vessels of neck.
6. Parotid region.
7. Infra temporal fossa -
   a. Muscles of mastication
   b. Mandibular nerve and its branches
   c. Maxillary artery
   d. Temporo mandibular joint
8. Sub mandibular region - gland, hyoglossus and its relations
9. Mouth, palate and pharynx.
10. Nasal cavity and paranasal air sinuses
11. Tongue
12. Larynx

Surface Anatomy: (to be included in practicals only)
MUST KNOW

Superior sagittal sinus; middle meningeal artery; pterion; facial artery; parotid gland and duct; facial nerve on face; common, external, internal carotid arteries; palatine tonsil; vocal cords; thyroid gland, Ext. Jng vein.

Radiological Anatomy: (Practicals only)

AP & Lateral views of head and neck. MUST KNOW Interpretation of normal radiological anatomy.

Histology Slides: - for Practical exam as Spotters & for Discussion.

1. Epithelium - simple squamous (mesentry)
2. Epithelium - simple Cuboidal (thyroid)
3. Epithelium - simple Columnar (Gallbladder)
4. Epithelium - simple Ciliated columnar
5. Epithelium - Pseudo-stratified ciliated columnar (Trachea)
6. Epithelium - Compound stratified squamous kertinised (skin)
7. Epithelium - stratified squamous non keralinised- do -non-keratinised (oesophagus)
8. Compound - transitional (urinary bladder)
9. Areolar tissue.

10. Collagen fibres.
11. Elastic fibres.
12. Tendon.
13. Cartilage - hyaline
    - Elastic
    - White fibrous.
14. Bone - T.S.
    - L.S.
15. Muscle - Skeletal (LS/TS)
    - cardiac
    - smooth.
16. Blood vessels - large sized artery
    - Medium sized artery
    - large vein
    - Medium vein
17. Peripheral nerve & ganglia
18. Serous salivary gland.
19. Mucous Salivary Gland.
20. Mixed Salivary Gland.
21. Lymph node.
22. Palatine tonsil.
23. Thymus
24. Spleen
25. Skin - hairy
26. Skin - non hairy
27. Lip
28. Tooth
29. Tongue
30. Trachea
31. Oesophagus
32. Lung
33. Thyroid & parathyroid
34. Pituitary
35. Suprarenal gland.
36. Pancreas.

Desirable to Know (to be Demonstrated)

1. Ear - external, middle & internal.
2. Spinal cord;
3 Brain Stem
4. Cerebellum
5. Cerebral hemispheres - important gyri & sulci of superolateral, medial and inferior surfaces; functional areas - sensory, motor, auditory, visual, gustatory speech & splanchnic areas; blood supply of brain;
6. Cranial nerves in general with functions other than V, VII, IX, XII.

7. Genetics - definitions, chromosomes, chromosomal aberrations;
8. Anthropology
9. Organs of thorax and abdomen.
10. Extremities - upper & lower limbs
11. Histology of
a. Stomach - fundus and pylorus;
b. Small intestine - duodenum, jejunum & ileum;
c. Large intestine - colon and appendix
d. Liver and gall bladder

Scheme of Examination

A. Theory : 70 Marks

Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
Gross Anatomy of Head and Neck - Scalp, Face, Triangles of Neck, Dural folds and Venous sinuses, contents of the Orbit excluding Eyeball, Parotid Gland, Infratemporal fossa, Temporo mandibular joint, Submandibular region, Thyroid gland, Pharynx, Tongue, Nasal Cavity and paranasal air sinuses. Cranial nerves - V, VII, IX and XII Development of Branchial arches poranecial pouches apparatus, Face, Systemic Embryology and Systemic Histology.	Long Essays 2 x 10 marks	20
Gross Anatomy of Head and Neck - Scalp, Face, Cervical fascia, Midline structures of the neck, Vertebral Joints of Neck, Contents of the Orbit excluding Eyeball, Vessels of Head and Neck, Infratemporal fossa, Mouth, Palate, Pharynx, Nasal Cavity, Cervical Part of Trachea and Oesophagus, Lymphatic drainage of Head and Neck **Cranial nerves** - V, VII, IX, XI and XII and Cervical Plexus General and Systemic embryology and Histology, Osteology of Head and Neck	Short Essays 08 x 5 marks + Short Answers 05 x 2 marks	40 10
	Total	70

B. Viva Voce : **20 Marks**

a. Osteology of Head and Neck - 05 marks
b. Soft part from Head and Neck - 05 marks
c. Embryology Models - 05 marks
d. Radiological Anatomy - 05 marks

C. Internal Assessment - Theory : 10 Marks, Practical: 10 Marks

D. Practicals : **90 Marks**

Gross Anatomy

a. Spotters carrying 2 marks each 02 x 10 = 20 marks
b. Discussion on Two given dissected specimens 02 x 10 = 20 marks
c. Surface Anatomy 10 x 1 = 10 marks

Histology

a. Identification of 10 Slides of 02 mark each 02 x 10 = 20 marks
b. Discussion on TWO given slides 10 x 2 = 20 marks
(One General and one Systemic)

Text Books Recommended :

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Cunningham's Manual of practical Anatomy (Vol-I)	G.J. Romanes	15th	1998	ELBS Oxford	£ 3.95
Cunningham's manual of practical Anatomy (Vol-3)	G.J. Romanes	15th	1998	ELBS Oxford	£ 3.95
Essentials of Human Anatomy (Head & Neck)	A.K. Dutta	--	1999	Current Books International	Rs. 200/-
Human Embryology	Inderbir Singh	6th	1996	Mc Milan India Ltd. Delhi	Rs. 242/-
Langman's Medical Embryology	Langman	5th	Nov 1994	William & Wilkins Pub. Baltimore, USA	Rs. 899/-
Text Book of Human Histology	Inderbir Singh	3rd	1997	J.P Brothers Medical. Publishers Delhi	Rs. 200/-

Reference Books

Gray's Anatomy	Peter L. Williams	39th	1995	ELBS	£ 40.00
Last's Anatomy Regional and Applied	Mc Minn RMH	10th	1999	Churchill Livingston, Edinburgh	£ 35.00
Grant's Method Anatomy	John V. Basmajian	11th (Ind)	1997	D.I. Publishers	Rs. 725/-
Lee. Mc Gregor's Synopsis of Surgical Anatomy	G.A.G. Decker	12th	--	K.M. Varghese Bombay	Rs. 350/-

General Human Physiology

Theory : 120 Hrs

	MUST KNOW	Hours
I.	**General Physiology:**	4
1.	Cell- Morphology - Functions of organelles: Cell membrane, nucleus, mitochondria. ribosomes. Lysosomes.	
2.	Muscle nerve physiology: Neurons: Morphology, classification Nerve Fibres classification, resting membrane potential, action potential, properties,conduction of impulses in myelinated & nonmyelinated fibres.	8
3.	Neuroglia : Types & functions. Muscles: Types, structure of skeletal & smooth muscles, Sarcomere, mechanism of contraction, strength-duration curves, utilization time, rheobase & chronaxie.	
4.	**Blood** : **Composition, properties, functions**. RBC; Morphology, functions, count, physiological variations and life span Erythropoiesis - stages. essential factors. regulation.	15
5.	**Haemoglobin**: Function, concentration, physiological variations Fate of Hb - Jaundice. types Determination of color index, MCH, MCV, MCHC, PCV - normal values M = Mean, C = Corpuscular, H = Haemoglobin concentration.	
6.	WBCs Morphology, functions of all types including T & B lymphocytes, total and differential counts, physiological variations, leukocytosis & Leukopenia.	
7.	Platelets:Morphology, count, functions, thrombocytopenia & bleeding time.	

	Plasma proteins : Concentrations and functions. Blood groups " Basis of blood grouping, Landsteiner's laws, ABO system, determination of blood groups, blood transfusion, complications of incompatible blood transfusion, RH group, erythroblastosis foetalis, prevention and treatment.	
8.	Haemostasis : mechanisms. Clotting mechanism: factors, intrinsic and extrinsic pathways, Disorders of clotting - haemophilia, vitamin K deficiency. Anti-clotting mechanisms: Antithrombin III, heparin, thrombomodulin & plasminogen, anticoagulants.	
9.	Anaemias: nutritional, aplastic, megaloblastic, iron deficiency. Effects of anaemia.	
10.	Blood volume : Normal values, determination, regulation.	
11.	Lymph : formation, circulation, composition, functions.	
II.	**Gastrointestinal System:**	**10**
1.	Salivary secretion : composition, functions, regulation (Deglutition - DESIRABLE TO KNOW).	
2.	Stomach : functions. Gastric juice : composition, functions, regulation, gastrin, gastric emptying time.	
3.	Pancreas : composition, function, regulation of pancreatic juice secretion. Secretion, cholecystokinin - pacreozymin.	
4.	Liver : functions. Bile : composition, functions, Gall bladder: functions, regulation of emptying	
5.	Succus entericus : composition, function, regulation of secretion.	
6.	Movements of small and large intestines. Defaecation.	
III.	**Respiratory System :**	**12**
1.	Physiological anatomy of the lungs.	
2.	Definitions of terms used in respiratory physiology : Eupnoea, Hyperpnoea, tachypnoea, apnoea, dyspnoea.	
3.	Mechanics of breathing - intrapulmonary and intrapleural pressure changes during a respiratory cycle.	
4.	Spirometry-lung volumes and capacities. Vital capacity, times vital capacity, maximal voluntary ventilation.	
5.	Dead space : types, measurement of anatomical dead space. Pulmonary & alveolar ventilation.	
6.	Surfactant : production, functions, respiratory distress syndrome. (Ventilation perfusion ration: DESIRABLE TO KNOW)	
7.	Oxygen transport : Oxy Hb dissociation curves, factors affecting it.	
8.	Carbon dioxide transport : forms, chloride shift (Hamburgers phenomenon)	

9.	Regulation of respiration : Neural regulation : centers - Dorsal Group of Respiratory Neurons (DRG), Ventral group of respiratory neurons (VRG), Nuclear Para Brachialis medialis (NPBL), Hering-breuer reflex.	
10.	Chemical regulation : peripheral and central chemoreceptors, ventilatory responses to oxygen lack, carbon-di-oxide and H - ions, effect of voluntary hyper ventilation.	
11.	Hypoxia : Types and effects, acclimatization to high attitudes. Cyanosis, asphyxia, Artificial respiration.	
IV.	**Cardiovascular System:**	
1.	Plan of CVS Greater and Lesser Circulation. Physiological anatomy of the heart, nerve supply. Origin and spread of cardiac impulse. Structure and properties of cardiac muscle. Cardiac cycle : Intraventricular pressure and volume curves Heart sounds, causes, characteristics and significance Normal ECG, leads causes of waves, P-R interval	**15**
2.	Cardiac output : Definitions, normal values, physiological variations, determination, (Principles underlying the methods only), regulation.	
3.	Arterial blood pressure : Definitions, normal values, physiological variations, factors maintaining blood pressure, Regulation - Vasomotor control, role of afferents to Vasomotorceutee (VMC)-barp receptors, Bainbridge reflex, chemoreceptros, hypertension. Heart rate-physiological variations, sinus arrhythmia, Marey law, Bainbridge reflex, chemo receptors, radial pulse.	
4.	Hypovolaemic (Haemorrhagic) shock, physiological basis of signs and symptoms	
5.	Coronary circulation.	
V.	**Renal System:**	
1.	Functions of kidneys. Nephrons - cortical & juxtamedullary. Juxta glomerular apparatus - functions.	**8**
2.	Mechanism of urine formation : ultra filtration, GFR - Factors affecting, selective reabsorption- sodium, urea, water, glucose.	
3.	Tubular secretion	
4.	Water excretion, mechanism of urine concentration. Concept of clearance-insulin, PAH & urea clearances. Micturition, Innervation of bladder, cystometrogram, diuriesis.	
VI.	**Endocrinology:**	
1.	Major endocrine glands. Hormone: definition, properties, mechanisms of action. Anterior pituitary : Hormones and their functions, regulation of each hormone, disorders - Gigantism, acromegaly, dwarfism.	**14**

2.	Posterior pitrtary : hormones - site of synthesis, regulation, diabetes insipidus.	
3.	Thyroid : synthesis of hormones, actions and functions, regulation, disorders : simple goitre, myxoedema, cretinism, Graves disease.	
4.	Adrenal cartex : classification of hormones, actions, functions, regulation of secretion of cortisol and aldosterone.	
5.	Adrenal medulla : actions of adrenaline and noradrenaline, regulation of secretion.	
6.	Endocrine pancreas : hormones, actions, functions, regulation of secretion. Regulation of blood glucose level, diabetes mellitus.	
7.	Parathyroids : hormones, actions of hormones, regulation of secretion. Hypo- & hyper parathyroid conditions, tetany - signs. Calcitonin - source, actions.	
8.	Regulation of blood calcium level - Calcitriol.	
VII.	**Reproductive Physiology:**	**06**
1.	Male reproductive system : functions of testes, puberty, spermatogenesis, actions of testosterone, regulation of secretion, of semen.	
2.	Female reproductive system : Structure of ovary & Uterus, hormones, actions, regulation. Menstrual cycle, Hormonal basis of changes in menstrual cycle physiological changes during pregnancy. Action of oestrogen and progesterone, Functions of placenta, Lactation, milk ejection reflex.	
3.	Family Planning Methods : In the males : Coitus interruptus, condoms, vasectomy.	
4.	In females: Rhythm method, Intra Uterine Contraceptive Devise (IUCD), oral contraceptives, tubectomy.	
VIII.	**Nervous System:**	**10**
1.	Synapse : Types, properties Sensory receptors : definition, classification, properties. Reflex action : Definition reflex arc, classification, general properties. Pathways for fine touch, pressure, proprioception, crude touch, thermal and pain sensations, referred pain.	
2.	Spino-cerebellar tracts : pathway and function. Pyramidal tracts: origin, course, termination and functions. Sings of upper & lower motor neurone lesions. Functions of Cerebellum, Basal ganglia, Thalamus, Hypothalamus. Signs of Cerebellar disorders & Parkinson's disease. (Reticular formation, EEG, Sleep (NREM, REM)) Functions of Limbic system, Higher function of Brain - Memory, Learning & Motivation. (DESIRABLE TO KNOW)	
3.	Cerebral cortex : lobes & functions.	
4.	Autonomic nervous system : Organization & functions.	
5.	Cerebrospinal fluid : formation, circulation, composition and function, Lumbar puncture.	

6.	Regulation of body temperature.	
IX.	**Special Senses:**	**18**
1.	Vision : physiological anatomy of eye ball, functions of iris, aqueous humor, lens, rods & cones. Accommodation to near vision.	
2.	Refreactive errors : Myopia, hypermetropia, presbyopia & astigmatism. Visual acuity, pupillary reflexes.	
3.	Visual pathways.	
4.	Audition : Anatomic consideration, functions of outer, middle & inner ear, cochlea, organ of corti, mechanism of hearing.	
5.	Auditory pathways, deafness - types & tests	
6.	Taste : taste buds, primary taste sensation, pathway for taste sensation	
7.	Smell : receptors, olfactory pathways.	

Practicals : **60 Hours**

Sl. No.	To be done by Students :	Hours
1.	Study of Microscope and its uses	02
2.	Collection of blood and study of haemocytometer	02
3.	Haemoglobinometry	02
4.	Determination of RBC count	08
5.	Determination of WBC count	04
6.	Determination of blood groups	02
7.	Leishman's staining and differential leucocyte count	10
8.	Calculation of blood indices	02
9.	Determination of bleeding time	01
10.	Determination of clotting time	01
11.	Blood pressure recording	04
12.	Auscultation of Heart sounds	04

Demonstrations (only)

Sl. No.	To be done by Students :	Hours
1.	Determination of Erythrocyte Sedimentation rate (ESR)	02
2.	Determination of packed cell volume (PCV)	02
3.	Determination of specific gravity of blood	02
4.	Fragility test for RBC	02
5.	Clinical examination of chest	02
6.	Determination of vital capacity	02
7.	Artificial respiration	02
8.	Demonstration of deep and superficial reflexes	02
9.	Activity of frog's heart and effects of Acetyl Choline, Atropine and Adrenaline.	02
	Total	**60**

DESIRABLE TO KNOW
Transport mechanisms

Neuromuscular junction, excitation contraction coupling, Myasthenia gravis, Rigor Mortis

Body fluid compartments
Principles of measurement, normal values

Blood:
Development of WBC's & platelets
Electrophoresis, Plasma pheresis
Blood bank.

Respiratory system:
Compliance of the lungs
P 50 value, Co-efficient of oxygen utilization
Dysbarism, Dyspnoea - Dyspnoeic index
Non-respiratory function of respiratory system.

Cardio vascular system :
Cardiovascular changes in muscular exercise.

Renal system:
TmG, rental threshold for glucose, tubular load for glucose.
Counter current mechanism

Endocrinology:
Synthesis of thyroid hormone.
Disorders - Addison's disease, Cushings syndrome, Conn's Syndrome,
Adrenogenital syndrome, Pheochromocytoma
Methods of study of endocrine glands.
Central nervous system.

Reflexes - Flexion reflex, stretch reflex, reverse stretch reflex.

Connections of cerebellum, basal ganglia, Thalamus & hypothalamus

Functions of Vestibular apparatus - Reticular formation
EEG - sleep, Wakefulness.
Methods of study of functions of nervous system special senses,
Effects of lesions of visual pathways.
Field of vision, colour vision, colour blindness.

Structure of thyroid, pituitary, pancreas, parathyroid, Adrenal cortex and medulla.

Gastrointestinal function : Deglutition.

Respiratory System: Ventilation perfusion ration.
Nervous system: Reticular formation, EEG, Sleep (NREM, REM), functions of Limbic system, Higher functions of brain - Memory, Learning & Motivation.

Scheme of Examination

A. Theory : **35 Marks**

Distribution of Topics and Types of Questions

Contents	Type of Questions and Marks	Marks
Long Essay Questions preferably from 1. Blood 2. Gastro intestinal tract 3. Cardio Vascular System 4. Respiratory System 5. Endocrines 6. Reproductive System	Long Essays 01 x 10 marks	10
Short Essay Questions should be set from all the chapters. (Except the chapter on which a Long Essay Question has been set)	Short Essay 03 X 5 marks	15
Short Answer Questions should be set from all the chapters. (Except the chapter on which a Long Essay Question has been set)	Short Answers 05 x 2 marks	10
	Total	**35 marks**

B. Viva Voce **: 10 Marks**
C. Internal Assessment - Theory : 05 marks, Practicals **: 05 marks**
D. Practicals **: 45 Marks**

Major Experiments - 30 Marks
Any one of the Major Experiments
1. R.B.C. Count
2. W.B.C. Count
3. Differential Count
4. Blood Pressure Recording

Minor Experiments - 15 Marks
Any one of the minor Experiments
1. Determination of Blood Groups
2. Determination of Bleeding & Clotting time
3. Haemoglobin Estimation
4. Calculation of absolute Haematological Indices - MCH , MCV, MCHC

Text Books Recommended:

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Text book of Medical Physiology.	Guyton Arthur	09th	1999	Prism & Sounder's Bangalore	Rs.515/-
Concise medical physiology	Chaudhuri Sujit. K	2nd	1998	Central Book Agency Calcutta	Rs.495/-
Human Physiology Vol - I	Chatterjee C. C.	11th	1998	Medical Allied Agency Calcutta	Rs.130/-
Human Physiology Vol - II	Chatterjee C. C.	10th	1998	Medical Allied Agency Calcutta	Rs.120/-

Reference Books:

Review of Medical Physiology	Ganong William. F	18th	1989	Appleton & Lang USA	$18.00
Physiological basis of Medical practice	Best & Taylor	10th	1999	Willian & Wilkins Hongkong London	$40.00

Biochemistry, Nutrition and Dietics
Theory : 70 hours

Sl.No	Must Know	Desirable to Know
1.		Introduction to biochemistry and its scope in dentistry. (1 hrs)
2.	**Carbohydrates: (4 Hrs.)** 1. Definition 2. Classification 3. Isomerism of Sugars 4. Physiologically important mono, di and polysaccharides 5. Glycogen, starch, cellulose 6. Mucopolysaccharides - hyaluronic acid, chondroitin sulphate, heparin	
3.	**Amino Acids (6 Hrs.)** 1. Classification based on structure and nutritional importance 2. Optical activity 3. Isoelectric pH 4. Physiologically active peptides **Proteins-** 5. Definition 6. Functions 7. Classification 8. Structure 9. Denaturation 10. Plasma Proteins and their separation by electrophoresis 11. Immunoglobulins 12. Haemoglobin and its abnormal forms	Special features and organisation of Proteins, collagen, structure and composition, muscle protein- actin and myosin
4.	**Lipids: (4 Hrs.)** 1. Definition 2. Classification 3. Functions 4. Fatty Acids 5. Neutral Fats 6. Phospholipids 7. Cholesterol 8. Lipoproteins	
5.	**Nucleic Acids : (3 hrs)** 1. Composition 2. Structure & Types of Deoxy ribonucleic acid (DNA) & Ribonucleic acid (RNA) 3. Nucleosides and Nucleotides and their importance	

Sl.No	Must Know	Desirable to Know
6.	**Vitamins: (8 Hrs.)** 1. Definition 2. Classification, Chemistry, Sources, Requirement, Function, Metabolic role and **Deficiency signs of vitamins**: A, D, E, K, C,. Thiamin, Riboflavin, Niacin, Pyridoxine, Folic Acid, Cyanocobalamine. .	Genetic Code
7.	**Enzymes: (6 Hrs.)** 1. Definition 2. Classification 3. Chemical nature 4. Enzyme specificity, mechanism of action 5. Properties of enzymes 6. Coenzymes and cofactors 7. Holoenzyme 8. Proenzyme 9. Isoenzyme 10. Factors influencing enzyme activity 11. Enzyme inhibition-types and examples	Diagnostic enzymes
8.	**Carbohydrate Metabolism (8 Hrs.)** 1. Digestion and absorption of carbohydrates 2. Glycolysis 3. Cori's cycle 4. Citric acid cycle 5. Energetics of glucose oxidation 6. Glycogenolysis 7. Glycogenesis 8. Hexose monophosphate shunt 9. Regulation of blood glucose	Fermentation, biochemical changes during muscular contraction, electron transport chain, oxidative phoaphorylation, respiratory poisons, oxygen toxicity, gluconeogenesis, glycogen storage disorders.
9.	**Lipid Metabolism (6 Hrs.)** 1. Digestion and absorption of lipid 2. Beta oxidation of fatty acids and its energetics 3. Ketone body formation 4. Utilization 5. Ketoacidosis	Synthesis of palmitic acid and triglycerides, fatty liver, and lipotropic action, metabolism during starvation
10.	**Protein Metabolism (8 Hrs.)** 1. Digestion and absorption of Amino acids 2. Synthesis of Proteins 3. Deamination of Amino acids 4. Transamination 5. Decarboxylation	**Glycine metabolism Synthesis of important products like creatine, noradrenaline, adrenaline, thyroxin, serotonine, heme from amino acids**

Sl.No	Must Know	Desirable to Know
	6. Production and fate of ammonia 7. Urea cycle pathway 8. Methionine metabolism 9. Phenylalanine metabolism 10. Phenylketonuria, albinism, Alkaptouria	
11.	**Nutrition and Dietics (5 Hrs.)** 1. Dietary factors 2. Basal metabolic rate 3. Biological value of protein 4. Glucose sparing action 5. Essential amino acids 6. Dietary fibre 7. Essential fatty acids 8. Balanced diet	Principles of calorimetry, Respiratory quotient, Specific Dynamic Action of foods,protein-calorie malnutrition (kwashiorkor and marasmus),nitrogen balance, milk-composition and functions, determination of Basal Metabolic Rate (BMR)
12.	**Mineral metabolism (5 Hrs.)** **Distribution, sources, functions, requirements, absorption, metabolism, effect of deficiencies of** 1. Calcium and phosphorus 2. Iron 3. Iodine 4. Fluorine	
13.	**Liver Function Tests: (3 hrs)** 1. Liver function tests 2. Importance of alkaline phosphatase 3. Galacose tolerance test	Van den Bergh reaction Albumin / Globulin Ratio Bromsulphathalein Excretion test Serum Glutamate Pyruvate Transaminase (SGPT) and other enzymes
14.	**pH and its biological importance (2 Hrs.)** 1. Acids and bases 2. Buffers 3. Acid base balance 4. Acidosis and alkalosis	Henderson-Hasselbatch equation, role of the kidney in acid base balance.
15.	**Renal Function Test (1 Hr.)** 1. Urea clearance test 2. Creatinine Clearance	
16.	**Blood Constituents (1Hr.)** Normal and abnormal variations of 1. Calcium and phosphorous 2. Creatinine 3. Alkaline and acid phosphatase	Normal and abnormal variations of Urea, cholesterol, bilirubin, uric acid, transaminases.

Practicals: 60 hrs

1. Reactions of monosaccharides - glucose & fructose
2. Reactions of disaccharides - lactose, maltose and sucrose.
3. Preparation of osazones from glucose, fructose, lactose & maltose
4. Reactions of polysaccharides - starch
5. Identification of unknown carbohydrate
6. Colour reactions of proteins - albumin.
7. Colour reactions of proteins - gelatin & peptone.
8. Colour reactions of proteins - casein.
9. Precipitation reactions of albumin
10. Precipitation reactions of gelatin and peptone
11. Precipitation reactions of - casein
12. Identification of unknown protein
13. Reactions of urea, uric acid and creatinine
14. Identification of physiologically important constituents.
15. Composition of saliva and starch digestion by salivary amylase.
16. Qualitative analysis of gastric juice - normal and abnormal contents
17. Urine analysis - normal constituents.
18. Urine analysis - abnormal or pathological constituents.
19. Determination of titrable acidity and ammonia content in urine.
20. Determination of creatinine content in urine, calculation of creatinine clearance.
21. Estimation of Blood glucose.

Demonstration Sessions : (Desirable to know)

1. Colorimeter
2. Electrophoresis & Chromatography
3. Estimation of Serum calcium and phosphorus
4. Estimation of Bilirubin
5. Estimation of Urea in blood
6. Estimation of total protein in blood serum
7. Preparation of haemin crystals
8. Discussion of clinical charts - Glucose Tolerance Test (GTT)
9. Spotting of specimens -
   Haemin, Osazone - Microscopy, Ryle's tube, Folin -wu tube, Urinometer, Tests - Biuret reaction, Millon's reaction, Jaffe's reaction, Barfoed's reaction.

Scheme of Examination

A. Theory: **35 Marks**

Distribution of Topics and Types of Questions

Contents	Type of Questions and Marks	Marks
Chemistry of Carbohydrates, proteins, lipids and amino acids. Fat soluble and water soluble vitamins. Enzymes. Metabolism of carbohydrates, proteins, lipids and minerals.	Long Essays 01 x 10 marks	10
Chemistry and metabolism of: carbohydrates, lipids, proteins, nucleic acids, minerals. Fats soluble and water soluble vitamins, Nutrition and dietetics, Liver function tests, pH and its biological importance, Renal function tests, Blood constituents, Biological oxidation.	Short Essay 03 X 5 marks	15
Chemistry and metabolism of: carbohydrates, lipids, proteins, nucleic acids, minerals. Fats soluble and water soluble vitamins, Nutrition and dietetics, Liver function tests, pH and its biological importance, Renal function tests, Blood constituents.	Short Answers 05 x 2 marks These questions may be selected from both 'must know' and 'desirable to know' category	10
	Total	35 marks

Preferably, 75% of questions can come from the 'must know' category which helps the candidate to pass, remaining may come from 'desirable to know' category, which places him/her in the merit category.

B. Viva - Voce: **10 Marks**

C. Internal Assessment - Theory : 05 Marks, Practicals : 05 Marks

Internal Assessment (for theory):

75% - Questions from MUST KNOW Category
25% - Questions from DESIRABLE TO KNOW Category

D. Practicals: **45 Marks**

1. One procedure for quantitative estimation	=	20 marks
2. One procedure for qualitative analysis	=	15 marks
3. Interpretation of Laboratory results in a given chart	=	10 marks
Total		**45 marks**

The following are suggested:

Quantitative Estimation (Any ONE estimation to be done)

1. Estimation of Blood Glucose - using Folin-wu method, using deproteinized blood.
2. Determination of Creatinine in Urine - using Jaffes's method
3. Determination of Titrable acidity and Ammonia content of Urine - using Malfatti's Method

Qualitative Analysis (Any ONE analysis to be done)

1. Identification of Carbohydrates - glucose, fructose, sucrose, lactose, maltose, starch.
2. Colour Reactions - albumin
3. Precipitation Reactions - albumin
4. Identification of Proteins - albumin, gelatin, casein, peptone
5. Urine Analysis - normal constituents
6. Urine Analysis - pathological constituents

Chart Interpretation (Interpretation of ONE Clinical chart)

1. Glucose Tolerance Test
2. Values of Blood Constituents and their clinical variation: - urea, cholesterol, calcium, phosphorus, bilirubin.

Recommended Books:

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
A Text book of Biochemistry for Dental Students	Harbans lal	1st	1995	CBS Pub. New Delhi	Rs. 130/-
Concise Clinical Medical Biochemistry	Pattabhi raman	--	1986	Prithvi Pub.. Bangalore	Rs. 85/-
Fundamentals of Biochemistry	A. C. Deb	6th	1998	New Central Book Agency Calcutta	Rs. 395/-
Text Book of Biochemistry	AVS Rama Rao	7th	1995	UBSPD with LKS pub. Vishakapatnam	Rs. 135/-
Textbook of Medical Biochemistry	S. Rama krishnan K.G.Prasa nnan R. Rajan	3rd	2001	Orient Longman Hyderabad	Rs. 410/-

Reference Books

Review of Biochemistry	Harpers	24th	1996	USA Appleton and Lange Pub.	US $ 19.50
Basic and Applied Dental Biochemistry	William R.D & Elliot J.C.	2nd	1990	Singapore Langman Pub.	US $ 19.50
Principles of Biochemistry	Albert Lehninger	2nd	1993	New Delhi CBS pub.	Rs. 695/-

I BDS

Human Oral and Dental Anatomy, Embryology, Physiology and Histology

Theory - 105 Hrs.

I. DENTAL ANATOMY:	
1. Introduction, Dental Anthropology & Comparative Dental Anatomy	Sl.No. 1 To 4 - 3 HRS.
2. Function of teeth.	
3. Nomenclature.	
4. Tooth numbering systems (Different system) (Dental formula).	
5. Chronology of deciduous and permanent teeth. (First evidence of calcification, crown completion, eruption and root completion).	2 Hrs
6. Deciduous teeth - a. Nomenclature. b. Importance of deciduous teeth. c. Form & function, comparative dental, Anatomy, fundamental curvature.	4 Hrs.
7. Gross morphology of deciduous teeth.	5 Hrs.
8. General differences between deciduous and permanent teeth.	
9. Morphology of permanent teeth. - Chronology, measurements, description of individual surface and variations of each tooth.	3 Hrs.
10. Morphological differences between incisors, premolars and molars of same arch.	10 Hrs.
11. Morphological differences between maxillary and mandibular. incisors, canines, premolars and molars of the opposite arch.	5 Hrs.
12. Internal Anatomy of Pulp.	1 Hr.
13. Occlusion: a. Development of occlusion. b. Dental arch form. c. Compensating curves of dental arches. d. Angulations of individual teeth in relation to various planes. e. Functional form of the teeth at their incisal and occlusal thirds. f. Facial relations of each tooth in one arch to its antagonist or antagonists in the opposing arch in centric occlusion. g. Occlusal contact and interscusp relations of all the teeth of one arch with those in the opposing arch in centric occlusion. h. Occlusal contact and intercusp relations of all the teeth during the various functional mandibular movements.	8 Hrs.

i. Neurobehavioural aspect of occlusion. Tempero Mandibular Joint (T.M.J.): - Gross Anatomy and articulation. - Muscles (Muscles of mastication). - Mandibular position and movements. - Histology. - Clinical considerations with special emphasis on Myofacial Pain Dysfunction Syndrome (MPDS) - (Desirable to Know)	
ORAL PHYSIOLOGY:	
1. Theories of calcification.	01 hr.
2. Mastication and deglutition.	01 hr.
Oral Embryology, Anatomy and Histology:	
1. Development and growth of face and jaws.	1 hr.
2. Development of tooth.	6 hrs.
3. Cranial nerves with more emphasis on V.VII and IX.	1 hr.
4. Blood supply, nerve supply and lymphatic drainage of teeth and surrounding structures.	1 hr.
5. Cell - structure and function.	1 hr.
6. Maxillary sinus - Structure, Variations, Histology function and clinical considerations.	3 hrs.
7. Salivary Glands - Classification, structure, function, Histology, Clinical Considerations and age changes.	4 hrs.
8. Oral Mucous membrane: - Definitions, General consideration. - Functions and classifications. - Structure and microscopic appearance of gingiva, palate, lips, alveolar mucosa, tongue, floor of mouth. - Gingival sulcus and dento gingival junction. - Clinical considerations and age changes.	8 hrs.
ENAMEL: - Physical characteristics, chemical properties structure. - Development - Life cycle of ameloblasts Amelogenesis and Mineralisation. - Clinical considerations. - Age changes.	8 hrs.
DENTIN: - Physical characteristics, chemical properties, structure. - Types of dentin. - Dentin innervation and hypersensitivity. - Development - Dentinogenesis and mineralisation. - Clinical considerations. - Age Changes.	6 hrs.

PULP : Anatomy, structural features, functions, pulp organs. - Developments. - Clinical consideration - Age changes.	5 hrs.
CEMENIUM: - Physical characteristics, chemical properties, structure. - Cementogenesis. - Clinical consideration - Age changes.	5 hrs.
PERIODONTAL LIGAMENT: - Cells and fibers - Functions - Development - Clinical Considerations. - Age Changes	5 hrs.
ALVEOLAR BONE: - Physical characteristics, chemical properties structure. - Structure - Development. - Internal reconstruction. - Clinical consideration.	5 hrs.
HISTOCHEMISTRY OF ORAL TISSUES. (Tissue processing) THEORIES OF ERUPTION AND SHEDDING. (Physiological tooth movement)	4 Hrs. 4 Hrs.

PRACTICAL : 250 Hours

Preparation of Ground sections, haematoxylin & Eosin sections & decalcified section - (Desirable to know).

DENTAL ANATOMY: Carving on wax blocks:- a. Cube, rectangle, cone and cylinder b. Individual tooth - Only permanent teeth of both arches. - Central, Incisors, Lateral, Canines, Premolars and 1st molar.	
HISTOLOGY: List of Histology slides: Development of tooth: 1. Bud stage of tooth development. 2. Cap stage of tooth development. 3. Early bell stage of tooth development. 4. Late Bell stage of tooth development. 5. Root formation.	
ENAMEL : 1. Enamel rod. 2. Hunter-Schreger Bands 3. Tufts, Lamellae, Spindles. 4. Incremental lines of Retzius. 5. Neonatal line. 6. Gnarled Enamel.	
DENTIN : 1. Dentino - Enamel junction. 2. Dentinal Tubules. 3. Incremental lines of Von Ebner. 4. Contour lines of owen. 5. Neonatal line. 6. Tomes granular layer. 7. Interglobular Dentin. 8. Secondary Dentin. 9. Intratubular Dentin. 10. Intertubular Dentin. 11. Dead Tracts 12. Tertiary Dentin 13. Sclerotic Dentin	
CEMENTUM: 1. Cellular cementum. 2. Acellular cementum.	

3. Cemento enamel junction - Type 1 - 60% type - Overlapping. - Type 2 - 30% type - Butt - Type 3 - 10% type - GAP type 4. Sharpey's fibers. 5. Hypercemntosis. 6. Cementum	
PULP: 1. Zones of Pulp. 2. Pulp stones.	
PERIODONTAL PRINCIPAL LIGAMENT: 1. Principal fibers of Periodontal ligament - Apical, Horizontal, Oblique, Aveolar crest, Interradicular, Transeptal	
ALVEOLAR BONE: 1. Haversian system. 2. Trabeculated bone. 3. Mature and immature bone.	
SALIVARY GLANDS: 1. Mucous gland. 2. Serous gland. 3. Mixed gland.	
MAXICILLARY SINUS: Sinus lining (Pseudostratified ciliated columnar) (Desirable to know)	
ORAL MUCOUS MEMBRANE: 1. Parakeratinised epithelium. 2. Orthokeratinised epithelium. 3. Palate - Anterolateral zone. 4. Palate - Posterolateral zone. 5. Alveolar mucosa. 6. Vermilion border of lip. 7. Tongue - Circumvallate Papillae. - Fungiform Papillae - Filiform Papillae 8. Dentogingival junction. 9. Skin	
Tempero Mandibular Joint (T.M.J.): 1. Histological section (Desirable to know).	

LECTURE DEMONSTRATION :

1. Identification of Individual teeth.
   - Deciduous.
   - Permanent.

2. Mixed dentition using study models.

3. Cross - Section & T.S. of mandible and maxilla with teeth present using study models.
   Demonstration of preparation of ground section, Decalcification, Paraffin section & H & E Staining.

Scheme of Examination

A. Theory : 70 Marks
Distribution of Topics and Type of Questions

Contents	Type of Questions and Marks	Marks
A. Dental anatomy - one question - 10 marks B. Dental histology - one question - 10 marks	Long Essays 2 x 10 marks	20
A. Oral histology - five questions - 25 marks B. Dental anatomy - two questions - 10 marks C. Oral physiology - one question - 05 marks	Short Essays 08 x 5 marks	40
A. Oral histology - two questions - 04 marks B. Dental anatomy - one question - 02 marks C. Oral physiology - one question - 02 marks D. Oral embryology - one question - 02 marks	Short Answers 05 x 2marks	10
	Total	**70**

B. Viva Voce : 20 Marks

C. Internal Assessment - Theory : 10 marks, Practicals : 10 marks

D. Practicals : 90 Marks

1. Carving	30 marks	1 hour 15 min
2. Spotters	60 marks (20 spotter x 3 marks)	1 hour 15 min

- 13 histology and ground section slides
- 4 tooth identification
- 3 casts for identifications of teeth, numbering system and age assessment.

Text Books Recommended :

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Orban's Oral Histology and Embryology	Orban's	10th	1990	American Publication Ontoria, Canada	Rs. 350/-
Oral Histology - Development, Structure and Functions	A. R. Tencate	5th	1998	Mosby A Harcourt Health Science Company USA	$ 25.00
Dental Anatomy, P hysiology and Occlusion	Wheeler's	7th	1993	Prism Book Pvt. Ltd. Bangalore	Rs. 300/-

REFERENCE BOOK:

- Dental anatomy by Scoot & Simon.
- Oral Physiology by Lavelle.
- Oral Physiology by Jenkins.
- Dental Anatomy by Krauss.
- Dental Anatomy - It's relevance to dentistry 5th edition by Woelfel
- Illustrated Dental Embryology, Histology and Anatomy- 2nd editon By Bath- Balogh

I BDS
DENTAL MATERIALS

Sl. No.	Theory - 20 Hrs. Practical - 40 Hrs.	Total 60 Hrs.
1.	**Introduction:** a. Brief History of the development of the science of Dental Materials b. Aim of studying the subject of Dental Materials. c. Scope and requirements of Dental materials d. Spectrum of materials - Classification Clinical and laboratory applications	01
2.	**Structure and behaviour of matter:** a.Basic principles - Physical and mechanical properties, Chemical properties, biological properties, rheological properties, thermal properties, light, colour and esthetics. Tarnish and corrosion, surface properties and adhesion, biocompatibility allergy, toxicity, setting reactions. b. Enamel and Dentine and bone. c. Polymers d. Metals and alloys e. Ceramics f. Composites g. Standardisation and assessment of dental materials.	02
3.	**Impression materials and duplicating materials:** a. Requirements, classification. b. Desirable properties, composition, setting properties, advantages, disadvantages, indications and manipulation of inelastic and elastic materials. (Tray compound, impression compound, Low fusing compound, Impression plaster, Zinc oxide Eugenol impression paste, Non Eugenol paste, Alginate, Agar Elastomeric impression materials) Comparative studies between all.	03
4.	Gypsum products (Detail), die, cast and model materials (including brief account of electroformed dies):	02
5.	Waxes and baseplate materials - Contents, properties, manipulation and uses (Modeling wax, casting wax, boxing wax, utility wax, Sticky wax, impression wax, carding wax, preformed wax patterns	02
6.	**Denture base resins** a. Tray materials. b. Temporary base materials - contents, properties, manipulation, advantages and disadvantages.	02

Sl. No.	Theory - 20 Hrs. Practical - 40 Hrs.	Total 60 Hrs.
	c. Permanent base resins - types, composition, properties and technical consideration (Flasking, packing, curing, deflasking and processing errors) d. Others - Tissue conditioners, soft liners and hard liners.	
7.	**Tooth restorative materials - Classification and ideal properties :** a. Dental cements - classification ideal requirements of liners, base and luting cements. Composition, properties, chemistry of setting, manipulation and uses of silicate and silico phosphate cements (in brief), zinc phosphate, zinc polycarbxylate, calcium hydroxide, glass ionomer, modified glass ianomer and resin cement. Comparative studies of mechanical, biological and esthetic properties of all cements.	10
8.	Metals and Alloys - Solidification and microstructure of metals, classification of alloys, relevant physical and mechanical properties, annealing, heat treatment, soldering, welding, fluxes and ant fluxes.	03

Practical Exercises : 40 Hours

II Exercises to be done by each student :

a. Impression material - 20 hours
Manipulation and making impression and identifying setting time and defects.
(Comparative studies included)
b. Gypsum products - 20 hours

Recommended Text Books

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Science of Dental Materials	Kennet. J. Anusavice	11th	2007	W.B. Sunder's Company, USA	$35.00
Notes on Dental Materials	E.C. Combe	06th	1992	Churchill Livingstone, UK	4.95 pounds
Applied Dental Material	John. F. Mc. Cabe	07th	1992	Oxford Blackwell Scientific pub. London	Rs. 320/-
Text Book of Dental Material	Craig. O. Brien	06th	1996	Mosby, USA	$ 15.00
Restorative Dental Materials	Craig.	11th	2002	Mosby, USA	Rs. 675/-

I BDS
PRE-CLINICAL PROSTHODONTICS AND CROWN AND BRIDGE

Practical: 100 Hours

1. Preparation of special trays
2. Preparation of temporary and permanent denture bases
3. Preparation of occlusion rims
4. Orientation of occlusion rims on articulator
5. Arrangement of teeth
6. Processing of complete dentures

RECOMMENDED TEXT BOOKS

Author	Name of the Book & Title	Edition	Year. of Publ.	Publishers Name Place of Publ.	Price
Boucher	Prosthodontic Treatment of Edentulous Patients	XI	1997	Mosby St. Louis, Missouri, USA	$ 76
Heartwell	Syllabus of Complete Denture	IV	1992	Varghese Publishing House	Rs 595
Tylman	Theory and Practice of Fixed Prosthodontics	VIII	1993	Ishiyaku Euro America Inc. 716, Hanley Industrial Court St. Louis Missouri, USA	$ 69
McCracken	Removable Partial Denture	VIII	1989	CBS Publishers & Distributors Shadara, Delhi	Rs 350
Skinner	Science of Dental Materials	X	1996	W.B Saunders Company, Philadelphia, USA	$ 35
Craig	Dental Materials, Properties & Manipulation	VI	1996	Mosby, St. Louis Missouri, USA	$ 35

II Year - BDS
DENTAL MATERIAL

	Theory - 60 Hrs. **Practical - 200 Hrs.**	
1.	Chemistry of synthetic resins used in dentistry.	02
2.	Dental porcelains - types, composition, role played by each ingredient, manipulation, advantages and disadvantages, aluminous, porcelain, castable porcelain, metal fused porcelain, and porcelain repair materials.	05
3.	Tooth restorative materials - Classification and ideal properties : b. Cavity bases, liners and varnishes. c. Restorative resins - Brief history of resins as tooth restorative materials, filled resins (composite resins) - classification, chemistry of setting, composition, properties, uses, manipulation advantages and disadvantages, acid etching, bonding agents (Enamel and dentin bonding systems), Pit and fissure sealants.	12
4.	Direct filling Gold - types, advantages, disadvantages, brief study of manipulation (cold welding).	03
5.	Silver amalgam alloy - Brief history, classification, composition, role played by each ingredient, setting reaction, properties, manipulation and uses, comparative study of all types of silver amalgams Mercury Hygiene and Toxicity	04
6.	Casting gold alloys - Classification, corrosion, contents and role played by each ingredient, indications, white gold, uses.	03
7.	Dental casting investments - (Refractory materials) Classification, composition, setting reaction, manipulation and technical consideration.	03
8.	Casting procedures and casting defects, in general	04
9.	Base metal casting alloys - properties, composition and uses of Co-Cr, St. steel.	04
10.	Materials used in orthodontia - Luting cements, direct bonding agents, St. Steel, properties and gauzes of wires of gold, st. steel, Co-Cr and titanium alloys, brackets, sensitization.	06
11.	Abrasives and polishing agents - a. Clinical b. Laboratory.	04

Sl. No.	Theory - 20 Hrs. Practical - 40 Hrs.	Total 60 Hrs.
12.	Dental implant materials - History, biological properties and different designs.	02
13.	Miscellaneous - a. Infection control b. Artificial tooth material. c. Separating media d. Die spacers e. Tray adhesives f. Petroleum jelly g. Articulating paper h. Pressure indicating paste i. Endodontic materials j. Comparative studies between metallic and nonmetallic denture base. k. Bioglass l. Sprues m. Setting expansion, hygroscopic expansion, thermal expansion n. Dentifrices.	08

Practical Exercises : 200 Hours

I Demonstration of manipulation of all materials for a batch not more than 8 students.

II Exercises to be done by each student:

a. Manipulation and pouring impressions - identify setting time and working time and working time with reference to proportion, water temp, and spatulation time.

b. Self-cure and heat cure acrylic resin manipulation and curing.

c. Cements - manipulation and studying setting time and working time for luting, base & restoration.

d. Silver Amalgam - manipulation, trituaration.

Scheme of Examination
A. Theory : 70 Marks

Distribution of Topics and Type of Questions :

Contents	Type of Questions and Marks	Marks
Conservative Dentistry Topics	Long Essays 1 x 10 marks	10
Prosthodontics topics	Long Essays 1 x 10 marks	10
Conservative and Prosthetic topics (Four questions from each subject)	Short Essays 8 x 5 marks	40
Orthodontia*	Short Essays 2 x 2 marks	04
Conservative and Prosthetics topics* (Five questions from each subject)	Short Answers 3 x 2 marks	06
	Total	**70**

B. Viva Voce : **20 Marks**

C. Internal Assessment - Theory : 10 marks, Practicals : **10 marks**

D. Practicals : **90 Marks**

1. Spotters: Identify and write the composition and two important uses:
Spotters - 25 Nos.
Marks - 01 Each
Time - 02 Minutes each - 25 Marks

2. Exercise No. 1 **- 20 Marks**
Any one exercise of the following:
a. Manipulation of impression compound and preparation of a plaster cast of U/L arch.
b. Manipulation of alginate impression material and preparation of plaster cast of U/L arch.
c. Manipulation of Zinc Oxide Eugenol impression paste, and preparation of cast of U/L arch.
d. Manipulation of Rubber Base impression material and preparation of Stone cast

3. Exercise No. 2 **- 20 marks**
Manipulation of any one of the following Dental Cements.
a. ZOE (Luting and Filling consistency)
b. Zinc Phosphate Cement (Luting and Base consistency)
c. Glass Ionomer Cement Type I/II (Luting/Filling consistency)

d. Polycarboxylate Cement (Luting consistency).

(Cements which are mixed for filling consistency should be filled in the cavity prepared in the extracted natural looth / typhodont.)

4. Exercise No. 3 **- 25 marks**

a. Trituration of Silver Amalgam and Condensation into the cavity prepared in extracted natural tooth/typhodont.
b. Mixing to heat cure Acrylic resin and recording of time taken for all stages.

Recommended Text Books

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Science of Dental Materials	Kennet. J. Anusavice	11th	2008	W.B. Sunder's Company, USA	$ 35.00
Notes on Dental Materials	E.C. Combe	06th	1992	Churchill Livingstone, UK	$ 4.95
Applied Dental Material	John. F. Mc. Cabe	07th	1992	Oxford Blackwell Scientific Pub. London	Rs. 320/-
Text Book of Dental Material	Craig. O. Brien	06th	1996	Mosby, USA	$ 15.00
Restorative Dental Materials	Craig.	11th	2002	Mosby, USA	Rs. 675

II B.D.S
PRE-CLINICAL PROSTHODONTICS

THEORY : 25 hrs, PRACTICALS -200 hrs 10 hrs / week]

I. Introduction to Prosthodontics - Scope and Definition	
A. Masticatory apparatus and function: 1. Maxillae & Mandible with & without teeth. 2. Muscles of mastication and accessory muscles of mastication. 3. Brief anatomy of TMJ. 4. Mandibular movements. 5. Functions of teeth.	Must Know 2 hrs
B. Various branches of Prosthodontics and prosthesis: 1. Scope & limitation. 2. Appliances v/s prosthesis. 3. Dental prosthesis v/s non-dental prosthesis.	Must Know 1 hr
C. Effect of loss of teeth: 1. On general health. 2. On masticatory apparatus. 3. Need of replace lost teeth.	Must Know 1 hr
D. Outline of Prosthodontics: 1. Types of Prosthesis. 2. Requirements of prosthesis- Physical, biological, esthetic considerations.	Must Know 1 hr
II. Introduction to components of Prosthesis	
A. Complete Denture Prosthesis: 1. Various surfaces (Border and surface anatomy). 2. Components - Base and Teeth.	Must Know 1 hrs
B. Removable Partial Denture: 1. Classification. 2. Major and minor Connectors. 3. Direct retainers. 4. Rests. 5. Indirect retainers. 6. Denture base. 7. Artificial teeth.	Must Know 2 hrs
C. Fixed Partial Denture: 1. Classification. 2. Retainers.	Must Know 1 hr

3. Pontics. 4. Connectors.	
III.All related definitions and terminologies from glossary • Model • Cast • Impression • Occlusion rim • Temporary denture base • Permanent denture base • Occlusion • Face Bow & Articulator • Jaw relation - orientation, vertical and centric • Christensten's phenomenon • Key of occlusion • Balanced occlusion • Abutment etc…	Must Know 1 hr
IV. Introduction to mouth preparation - in brief **A. Complete Dentures** 1. General considerations 2. Pre-prosthetic surgery	Must Know 1 hr
B. Removable partial dentures 1. General considerations 2. Occlusal rest preparation 3. Modifying contours of the abutments 4. Guide planes 5. Elimination of undercuts	Desirable to Know 1 hr
C. Fixed Partial Dentures 1. Principles of tooth preparation - in brief 2. Retainers in brief	Desirable to Know
V. Introduction to all steps involved in fabrication of Prosthesis	Must Know 1 hrs
Clinical Steps in brief and laboratory steps in detail	
Impression Making 1. Definition and requirements and types of impressions 2. Various materials used for different impressions 3. Different theories of impression making	Must Know 2 hrs
Impression Trays 1. Definition, classification, materials, advantages and disadvantages 2. Selection of trays 3. Special trays 4. Spacer design	Must Know 1 hr

Introduction to jaw relation record 1. Definition and type 2. Temporary denture base - Indications, Advantages, Disadvantages, materials used 3. Occlusion rims - materials, shape, dimensions 4. Clinical procedures of jaw relation recording in brief	Must Know 2 hrs.
Articulators and face bow 1. Basic out line 2. Need for articulators 3. Definition, classification, parts, advantages, disadvantages of articulators 4. Definitions, classification, parts, advantages, disadvantages and purpose of face bow transfer 5. Demonstration of face bow transfer to an articulator on a dummy	Must Know 2 hrs.
Selection of Teeth 1. Various guidelines for selection of teeth including dentogenic concept 2. Arrangement of teeth in detail with various factors of esthetics, overjet, overbite etc	Must Know 1 hr
Occlusion 1. Balanced Occlusion - need and advantages 2. Various factors of balanced occlusion	Must Know 1 hrs
Try in Procedures 1. Anterior try - in 2. Posterior try - in 3. Waxing, carvin, polishing and final try - in	Must Know 1 hr
Processing Procedures • Flasking • Dewaxing • Packing • Curing • Finishing and polishing of acrylic dentures	Must Know 1 hr
VI.Casting Procedures • Preparation of die • Wax pattern • Investing • Burnout • Casting • Finishing and polishing	Desirable to Know 1 hrs

II BDS
PRACTICAL EXCERCISES 200 hours

1. Arrangement of teeth - Must Know
2. Surveying of partially edentulous models and preparing modified master cast - Desirable to Know
3. Preparing of was patterns spruing, casting and finishing (in batches of students not more than 8) - Desirable to Know
4. Preparation of plaster models of various preparation of teeth to receive retainers for FPD - Desirable to Know
5. Prepare wax patterns for minimum of 3 unit FPD and investing, casting and porcelain facing (for Batch of 8 students) - Desirable to Know

Note:
1. Students shall submit one processed denture mounted on an articulator to present on university practical exam along with record book.
2. Exercises of RPD and FPD to be submitted in groups along with the record book.

Scheme of Examination

A. Practical Exercise: (Duration- 3 hrs) : 60 Marks
Arrangement of teeth in class I relation, Waxing, Carving, Polishing

B. University Viva-Voce : 20 Marks
C. Internal Assessment : 20 Marks

RECOMMENDED TEXT BOOKS

Author	Name of the Book & Title	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Boucher	Prosthodontic Treat ment of Edentulous Patients	XI	1997	Mosby St.Louis, Missouri,USA	$ 76
Heartwell	Syllabus of Complete Denture	IV	1992	Varghese Publishing House	Rs 595
Tylman	Theory and Practice of Fixed Prosthodontics	VIII	1993	Ishiyaku Euro America Inc. 716, Hanley Industrial Court St. Louis Missouri, USA	$ 69
Mc Cracken	Removable Partial Denture	VIII	1989	CBS Publishers & Distributors Shadara, Delhi	Rs 350
Skinner	Science of Dental Materials	X	1996	W.B Saunders Company, Philadelphia, USA	$ 35
Craig	Dental Materials, Properties & Manipulation	VI	1996	Mosby St. Louis Missouri,USA	$ 35

II BDS
PRE-CLINICAL CONSERVATIVE DENTISTRY

Theory : 25 Hours

Sl. No		
1.	Introduction to Conservative Dentistry.	1 hour
2.	Definition, Aim & Scope of Conservative Dentistry & Endodontics	
3.	Classification of Cavities.	1 hour
4.	Nomenclature.	
5.	Various chair side positions.	1 hour
6.	Tooth Numbering.	
7.	Restoration - Definition & Objectives	
8.	Instruments - Classification, Nomenclature, Design, Formula of hand cutting instruments, Care, Grasps and Rests.	4 hours
9.	Rotary Cutting instruments - Burs, Design & use. Various speeds in Cavity preparation.	2 hours
10.	Principles of cavity /Tooth preparation for :	5 hours
	a. Silver Amalgam	
	b. Cast gold inlay	
	c. Composite resins.	
	d. Glass Ionomer	
11.	Matrices, Retainers, Wedges.	2 hours
12.	Separators - different methods of separation.	2 hours
13.	Finishing & polishing of restorations.	1 hours
14.	Management of deep carious lesions - pulp capping and pulpotomy.	3 hours
15.	Access cavity and brief introduction of root canal instruments.	3 hours

PRACTICAL EXCERCISES - 200 Hours

Preparation of 1" cube in Plaster of paris - 6 Nos.
Preparation of geometric cavities in the above cubes.

Preparation of Tooth models in plaster and preparation of cavities and restoration with modeling wax.

a. Incisors - 4 Nos.
b. Pre-Molars - 2 Nos.
c. Molars - 8 Nos. 30 Hours

Preparation of Cavities on Typhodont and/or Extracted Natural Teeth

I. CAVITIES	PREPARATION	RESTORATION	
Class I	6 with 2 extensions	4	25 Hours
Class II	5 DO | Conventional	8	25 Hours
	5 MO |		
	5 Conservative		
	2 MOD (1 Upper molar)	4	15 Hours
	(1 Lower Molar)	1	15 Hours
	3		
Class III	3 on Anteriors	All	15 Hours
Class V	2 on Posteriors	All	15 Hours
		All	15 Hours

II. INLAY PREPARATION :

Class I1		To prepare Wax patterns 15 Hours
Class II2+1 MOD		To prepare wax patterns and one to be casted
Class V	1 (posterior)	

III. CUSPAL PREPARATION : (Demonstration)

IV. a. Pulp capping : Direct/ Indirect on extracted teeth
b. Pulpotomy on extracted posterior teeth
c. Root canal access cavity opening on Upper Central incisor. (Extracted Tooth)
V. Demonstration of Light cure composite and Glass Ionomer Restorations.
VI. Demonstration of Instrumentation and Obturation of root canal.
VII. Demonstration - Wax pattern, investing, casting, polishing and cementation of cast restoration.

NOTE: The II year student should complete the prescribed quota of work before appearing for final internal assessment for the subject. This should be certified by the Head of the department before the
candidate takes up final internal assessment exam.

Scheme of Examination
A. University Practicals : 60 Marks

Practical Exercise No.1 : 10 Marks

Spotters : 10 Nos., Marks : 01 Each, Time : 02 Minutes Each

Spotters
a. Hand instruments used to prepare cavity and restoration
b. Identification of Root Canal Instruments

Practical Exercise No.2 : 50 Marks

Preparation of Class II Conventional Cavity for Silver Amalgam in Maxillary or Mandibular I or II Molar tooth (Typhodont/Natural Tooth)

Cavity preparation	45 Minutes	25 Marks
Lining and Matrix	15 Minutes	10 Marks
Filling and carving	30 Minutes	15 Marks

B. University Viva-Voce : 20 Marks

C. Internal Assessment : 20 Marks

Total : 100 Marks

TEXT BOOKS RECOMMENDED :

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
The Art & Science of Operative Dentistry	Sturdevant	3rd	1997	Mosby, USA	$ 30.00
Principle & Practice of Operative Dentistry	Charbeneu	3rd	1989	Varghese Publication, Bombay	Rs. 315/-
Endodontic Practice	Grossman	--	1988	Varghese Publication, Bombay	Rs. 323/-

II BDS
GENERAL AND DENTAL PHARMACOLOGY AND THERAPEUTICS

Theory : 70 Hrs.

Sl. No.		
1.	General Pharmacology : a. Definitions : Pharmacology, drug, Pharmacy, sources of drugs with examples.	1 hour
	b. Pharmacokinetics with clinical implications.	2 hours
	c. Routes of administration : oral, inhalation, intradermal, Subcutaneous, intramuscular, intravenous intrathecal, perineural & Newer drug regimes (Advantages and disadvantages with the examples of drugs administered).	1 hour
	d. Pharmacodynamics : mechanism of action, factors modifying drug actions with emphasis on factors like - age, sex, dose, frequency & route of administration, presence of other drugs, Pharmacogenetics and Pathological conditions.	2 hours
	e. Therapeutics : Principles of drug therapy, Adverse drug reactions and drug interactions.	3 hours
2.	ANS drugs : Clinically used examples, their important pharmacological actions (which form the basis for the uses), clinical uses along with dental uses if any and specific adverse effects of - a. Sympathomimetics b. Sympatholytics - alpha blockers, Beta - blockers. c. Cholinomimetics. d. Anticholinergics.	1 hour 2 hours 2 hours 2 hours
3.	Detailed pharmacology of : A. a. Clinically used opiod and non-opiod analgesics. b. Clinically used local anesthetics.	2 hours 2 hours
	B. Enumeration of clinically used agents, their brief Pharmacology, clinical uses along with dental uses if any, and specific adverse effects of : a. Ethyl alcohol - actions, uses and drug interactions.	1 hour
B	. General anesthetics	2 hours
c.	Preanaesthetic medication.	
d.	Antipsychotics, antidepressants, anxiolytics.	2 hours
e.	Sedative hypnotics	2 hours
f.	Antiepileptics	1 hour

4.	CVS drugs : Enumeration/Classification of clinically used agents their important pharmacological actions (that form the basis of their uses) Clinical uses along with dental uses if any, and specific adverse effects of :	
	a. Cardiac glycosides	1 hour
	b. Antianginal drugs	1 hour
	c. Antihypertensives	1 hour
	d. Diuretics	1 hour
	e. Pharmacotherapy of shocks - anaphylactic, cardiogenic hypovolemic & Septic.	1 hour
5.	Drugs acting on blood : Detailed pharmacology of :	
	a. Coagulants, anticoagulants, fibrinolytics, anti platelet drugs and styptics	3 hours
	b. Hematinics : Iron preparation Vit.B12, Folic acid Vit. C	3 hours
	c. Vit.D and calcium preparations.	1 hour
6.	Endocrines : Enumeration/Classification of clinically used agents and their preparations, Mechanism of action, clinical uses along with dental uses if any and specific adverse effects of:	
	a. Drugs used in diabetes mellitus	2 hours
	b. Corticosteroids	2 hours
7.	Chemotherapy : Enumeration/Classification of clinically used Agents, their mechanism of action clinical uses along with Dental uses if any and specific adverse effects of:	
	a. Sulfonamides	1 hour
	b. Beta-lactum antibiotics	2 hours
	c. Macrolides and aminoglycosides	1 hour
	d. Broad spectrum antibiotics	1 hour
	e. Antifungal and antiviral (acyclovir) agents.	2 hours
	f. Metronidazole and fluoroquinolones	1 hour
	g. Antineoplastic Drugs: Alkylating agents, Antimetabolities, Radio active Isotopes, Vinka Alkaloids, Anti Cancerous antibiotics.	2 hours
	h. Drug Therapy of Tuberculosis, Leprosy & Malaria.	3 hours
8.	Other drugs : Enumeration of clinically used agents, general uses along with dental uses if any and specific adverse effects of :	
	a. Antihistamines and antiemetics	2 hours
	b. Drugs used in bronchial asthma and cough	1 hour
	c. Drugs used in peptic ulcer	2 hours
	d. Chelating agents - BAL, EDTA & Penicillamine.	1 hour
	e. Antihelmenthics	2 hours

9.	Dental Pharmacology	1 hour
	A. a. Fluoride pharmacology	1 hour
	b. Antiseptics, astringents & Sialogogues	1 hour
	c. Obtundents, Mummifying agents and disclosing agents.	2 hours
	B. Prevention and drug therapy of emergencies in dental practice.	
	a. Seizures	
	b. Anaphylaxis	
	c. Severe bleeding	
	d. Shock	
	e. Tetany	
	f. Status asthmaticus	
	g. Acute addisonian crisis	
	h. Diabetic Ketoacidosis	

PRACTICALS : 20 Hrs.

1.	Introduction - equipments used in dispensing pharmacy, prescription - parts and model prescription.	2 hours
2.	Demonstration of common dosage forms used in clinical practice.	2 hours
3.	Mixtures - one example (Expectorant/Salicylate) of simple and diffusible (Bismuth Kaolin/chalk) mixtures.	2 hours
4.	Emulsion - Types and example (Liniment turpentine / Shark liver oil) of emulsion.	2 hours
5.	Powders - tooth powder	2 hours
6.	Mandl's paint/Gum paint percentage dilution - concept and calculations with suitable examples.	2 hours
7.	Mouth washes - Alkaline, antiseptic, astringent.	2 hours
8.	Tooth pastes	2 hours
9.	Prescription writing for 15 general conditions commonly encountered in clinical practice. eg. Bronchial asthma, hypertension congestive heart failure, angina pectoris, peptic ulcer, bacillary dysentery, pseudomembranous colitis, diabetes mellitus, diabetic coma osteoarthritis, anaphylaxis, status asthmaticus, Status epilepticus, iron deficiency & pernicious anaemia.	2 hours
10.	Dental prescriptions for about fifteen dental conditions commonly encountered in practice eg. Acute necrotising ulcerative. gingivitis, acute herpetic gingivitis/stomatitis, acute gingival abscess, pericoronal abscess (impacted teeth), dental caries, aphthous ulcers, hypersensitive dentine, dentoalveolar abscess, xerostomia, acute tooth ache, post operative pain, post extraction pain with swelling, oral candidiasis, scurvy etc.	2 hours

Scheme of Examination

A. Theory (Written) Examination : 70 Marks

Type of questions, topics and marks distribution

Contents	Type of Questions and Marks	Marks
Topics to be covered : One long essay from dental pharmacology Second long essay from: - Pharmacokinetics - Pharmaco dynamics - Antibiotics - NSAIDS - Local anesthetics - Anti coagulants - Beta blockers - Glcocorticoids - Clum channel blockers - ACE Inhibitors - Opiod Analgesics - Sympathomimetics - Anti-Cholinergics - Cardiac Glycosides	Long Essay 2 x 10 = 20 marks	20
For Short notes Please refer chapters at sl. no. I, 1 b, c, d, e, 2 b, 3 B, 4 b, d, e., 5, 6 a, 7 e, f, g., 8, 9. A. b, c, 9. B. **Compare and contrast type from** - Physostigmine and Neostigmine - Atropine and Scopolamine - Procaine and Cocaine - Heparin and Dicoumoral - Iron Dextran and Iron Sorbitol Citric Acid complex - Digoxin and Digitoxin - Frusemide and Spiranolactone / Triamterene	Short essay type Short notes 06 x 5 = 30 marks Compare and contrast 02 x 5 = 10 marks	40
To classify the drug and write its mechanism of action or adverse effect or clinical use or specific antidote indicated in its poisoning, if any.	Short Answer type 05x 02= 10 marks	10
	TOTAL	**70**

B. Viva Voce : **20 Marks**

C. Internal Assessment - Theory : **10 marks, Practicals : 10 marks**

D. Practicals : **90 Marks**

1. Spotters 10 nos. x 1 = 10 marks

2. Prescriptions2 nos. (10+10 marks) = 20 marks
(one medical plus one dental prescription)

3. Preparations2 nos.x 30 marks = 60 marks
(one medical plus one dental preparation)

TEXT BOOKS RECOMMENDED :

Name of the Book & Title	Author	Edn	Yr. of Publ	Publ.'s Name Place of Publ.	Price
R.S.Satoskar and S.D.Bhandarkar	Pharma cology & Pharmaco therapeu tics	21st	2009	Bombay Popular Prakashan	Rs. 605/-
Tripathi K.D.	Essentials of Medical Pharma cology	6th	2008	New Delhi Jaypee Brothers Medical Publishers	Rs. 795/-
Tripathi K.D.	Essentials of Medical Pharma cology	1st	2006	.....do.....	Rs. 395/-
P N Bennett M J Brown	Clinical Pharma cology	9th	2003	New York Churchill Livingston	$ 11.00
Kartzung Betram G	Basic and clinical Pharma cology	11th	2007	USA Lange Medical Books	Rs. 3024/-
H L Sharma K K Sharma D K Gupta	Text book of Dental Pharma cology	1st	2008	Hyderabad, New Delhi Paras Medical Publishers	Rs. 695/-
Padmaja Udaykumar	Medical Pharmacology	IIIrd		Publishers & Distributors Pvt Ltd	

II - BDS
GENERAL PATHOLOGY

Theory : 55 Hours

	Hours
1. Introduction to pathology as scientific study of disease, evolution of modern pathology, subdivisions in pathology, techniques used in the study of pathology and terms used in pathology	02
2. Disturbances of metabolism of cells-Intra cellular accumulations (Degenerations) Fatty change, accumulation of lipids, proteins and glycogen. cellular swelling, hydropic change, Hyaline change and mucoid degeneration. Disorders of pigmentation and pathologic calcification.	03
3. Cell injury- Causes Types, mechanism, intracellular changes, morphology with examples, Cell death. Necrosis - definitions, types of necrosis with examples and cellular changes (morphology), mechanism. Apoptosis - definition, examples, morphology Gangrene- definition, types with examples, differences between dry and wet gangrene, stressing mainly on cancrum oris.	05
4. Amyloidosis - definition, pathogenesis and emphasis on localised amyloidosis, special stains for amyloidosis.	02
5. Inflammation and Repair-Acute and chronic inflammation. Chemical mediators of acute inflammation, Outcome of acute inflammation. Granulomatous inflammation - definition of granuloma, Types of granuloma, with examples. Patterns and systemic effects of inflammation.	05
6. Healing of a wound in general with special emphasis on healing of a fracture. Factors affecting wound healing.	03
7. Immunity and hypersensitivity, definition, types mechanisms of immunology tissue injury with examples. Brief Introduction to Auto-Immune diseases.	06

8. Infection and infestation - Bacterial- like pyogenic infections, typhoid fever, viral like AIDS, Hepatotropic viruses. Tuberculosis, Leprosy&syphilis, Actinomycosis. Viral- Hiv, Hepatotropic Viruses, Htlv. Fungal- Candidiasis, Mucormycosis.	08
9. Circulatory disturbances - Hyperaemia, congestion, Haemorrhage shock, oedema, thrombosis, embolism and infarction.	08
10. Disturbances of Nutrition; Starvation, Obesity, Malnutrition, Pathogenesis of Deficiency Diseases with Special Reference to Disorders of Vitamins & Minerals	05
11. Diabetes mellitus types, Aetio Pathogenesis, morphological changes in different organs, complications and lab investigations.	02
12. Brief Introduction to Growth and Differention. Adoptive Disorders of Growth-Arophy, Hypertrophy Hyperplasia, Metaplasia. Types and Pathologic Changes Of Dysplasia And Premalignant Lesions.	03
13. Neoplasia : Introduction, Definition, Classification, Characteristics of Benign and Malignant Tumours. Routes of Spread of Malignant Tumours, Aetiology, Epidemiology and Pathogenesis of Neoplasia, Oncogenes, Clinical Aspects & Laboratory Diagnosis of Cancer.	08
14. Common Diseases of Bone - Osteomyelitis, Tumours and Tumours Like Lesions of Bone.	04
15. Introduction to Diseases of Oral Cavity & Salivary Glands-inflammatory Conditions, Infections, Premalignant Conditions and Squamous Cell Carcinoma of Oral Cavity Sialadenitis, Pleomorphic Adenoma and Warthin's Tumour. (exclude Diseases of Teeth, Periodontal Diseases and Odontogenic Tumours)	04
Haematology and Clinical Pathology 1. Introduction to Haematology-brief Introduction to Haemopoiesis, Bone Marrow Aspiration & Biopsy.	02
2. Diseases of RBCS-Anaemias -classification, Iron Deficiency Anemia, Vit.b12 Or Folic Acid Deficiency Anaemia and Haemolytic Anaemias and Their Lab Investigations. Polycythaemia	07

3. Diseases of WBCS- Pathologic Variations in white cell counts and Leukemoid Reactions.	02
4. Neoplastic Proliferation of Leucocytes - Leukaemias - Acute & Chronic Leukaemias with Brief Introduction to Lymphomas.	05
5. Haemorrhagic Disorders with their Lab Investigations.	02

PRACTICALS AND LECTURE DEMONSTRATIONS : 50 hours

Lecture Demonstrations -----10 Hours
1. Anti Coagulants, Blood Indices
2. Pcv And Erythrocyte Sedimentation Rate
3. Instruments & Their Uses :
   A. Neubauer's Counting Chamber.
   B. Haemoglobinometer
   C. W.b.c.pipette
   D. Wintrobe Tube
   E. Urinometer.
4. Cytologic Techniques - Fnac And Buccal Smear
5. Study Of Anaemias - Microcytic, Macrocytic And Dimorphic Blood Picture.
6. Study Of Acute Leukemias- Any One Type
7. Study Of Chronic Leukemias-any One Type.

Histopathology Slides And Specimens ----------20 Hours

1. Acute Appendicitis
2. Granulation Tissue.
3. Actinomycosis
4. Tubercular Lymphadenitis
5. Fatty Liver.
6. Chronic Venous Congestion (cvc) Liver / Spleen / Lung.
7. Squamous Papilloma / Transitional Cell Papilloma
8. Pleomorphic Adenoma
9. Capillary And Cavernous Haemangioma
11. Fibroma,
12. Lipoma
13. Osteoma, Chondroma
14. Squamous Cell Carcinoma
15. Basal Cell Carcinoma
16. Adenocarcinoma,
17. Malignant Melanoma.
18. Osteosarcoma
19. Osteoclastoma.

Specimens

1. Acute Appendicitis.
2. Tuberculosis Lymph Node /any Other Organ
3. Fatty Liver.
4. Infarction Spleen.
5. Chronic Venous Congestion (c.v.c.) Liv
6. Lipoma /any Other Benign Tumours
7. Carcinoma-breast /any Other Malignant Tumour
7. Adenocarcinoma
8. Osteosarcoma
9. Osteoclastoma.
10. Gangrene.

Practicals That Must Be Done By Students : 20 Hours

- Determination Of Haemoglobin Percentage
- Blood Grouping.
- Total Leukocyte Count
- Bleeding Time, Clotting Time
- Peripheral Blood Smear - Staining & Study
- Differential Leukocyte Count.
- Urine Examination - For Sugar, Ketone Bodies, Protein, Blood, Bile Pigments And Bile Salts - Any One Standard Test.

Scheme of Examination
To Conduct General Pathology and Microbiology Exams on Separate Days.

A. Theory : 45 Marks

Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
One Main Question from General Pathology Inflammation, Healing and Repair, Tuberculosis, Leprosy, Thrombosis, Diabetes Mellitus, Neoplasia. Anaemias Due to Nutritional Deficiency, Amyloidosis, Cell Injury and Cell Death	Long Essays 1 x 10 marks	10
Three from General Pathology **One from Haematology** **One from Clinical Pathology** Intracellular Accumulations, Necrosis, Gangrene, Apoptosis, Amyloidosis, Pathologic Calcification, Hypersensitivity Reactions, Infections, Shock, Oedema, Infarction, Congestion, Hypertension, Diabetes Mellitus,	Short Essays 3 x 5 marks	15

Contents	Type of Questions and Marks	Marks
Premalignant Conditions, Neoplasia, Osteomyelitis, Anaemias, Neoplastic Proliferation of Wbcs - Leukaemias and Lymphomas, Haemorrhagic Disorders, Erythrocyte Sedimentation Rate (Esr).		
2 From Haematology **1 From Clinical Pathology** **2 From General Pathology**	Short Answers 5 x 2 marks	10
	Total	**45**

B. Viva Voce : 10 Marks

C. Internal Assessment - Theory : 05 Marks, Practical : 05 Marks

D. Practicals : 55 Marks

1. Spotters : 1.5 Marks for each Spotter

Instruments	-	2
Haematology slide	-	1
Specimens	-	2
Histopathology slides	-	5
		15 Marks

2. To examine given sample of urine for abnormal constituents - 15 Marks
3. To do differential count on the given peripheral blood smear - 15 Marks
4. To estimate haemoglobin percentage in the given sample of blood
   or
   To determine blood groups (abo and rh) in the given sample of blood - 10 marks

Text Books Recommended :

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Robbin's pathologic basis of disease	Cotran & Kumar, Robins	7th	2003	Prism & Saunders Bangalore	
De.Gruchy Clinical Haematology in Medical Practice	Frank Firskin Colin Chester man David Penington Bryan Rush	5th	2003	Oxford University Press New Delhi	
Pathology for dental students	Harsh Mohan	recent	2003	--	
Medical Laboratory Technology (Methods and Interpretation)	Dr. Ramnik Sood	5th	1994	Jaypee Brothers New Delhi	Rs. 250/-

Reference Books

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Clinical Diagnosis and Management by Laboratory Methods	Todd, Sanford, John Bernard Davidson	20th	2001	Veerendar Kumar Arya for AITBS with Saunders New Delhi	Rs.1250/-
Haematology an illustrated colour text	Martin R. Howard Peter J Hamilton	1st	1997	Churchill Livingston USA	£ 4.95
General Pathology Vol. I & II	Y.M. Bhende & S.G. Deodhare	5th edn. Under print		Popular Prakashan Bombay	
Colour Atlas of Histopathology	R. C. Curran	4th (Revised)	2000	Harvey Miller Oxford university press	Rs. 1250/-

II - BDS
MICROBIOLOGY

Theory: 63 Hrs.

		Teaching Hours
	GENERAL BACTERIOLOGY	
1.	Introduction, History and classification.	02
2.	Morphology, Physiology of Bacterial cell.	02
3.	Bacterial Genetics	02
4.	Infection	02
	IMMUNOLOGY	
1.	Immunity	02
2.	Antigen	01
3.	Antibodies	01
4.	Structures and functions of Immune system	01
5.	Immune response	01
6.	Antigen and antibody reactions & compliment	04
7.	Hypersensitivity	02
8.	Auto immunity	01
9.	Immunology of transplantation	01
	SYSTEMATIC BACTERIOLOGY	
1.	Staphylococci	01
2.	Streptococci (Dental Caries)	02
3.	Pneumococci	01
4.	Meningococci & Gonococci	01
5.	Coryne bacterium diphtheriae	02
6.	Bacillus	01
7.	Clostridia	02
8.	Non sporing Anaerobes	02
9.	Mycobacteria	03
10.	Spirochaetes (Treponema, Leptospira and Borrelia)	03
11.	Normal Bacterial flora of the oral cavity	01
	VIROLOGY	
1.	General properties of viruses	03
2.	Herpes viruses	02
3.	Measles and Mumps	01

4.	Rabies virus.	01
5.	Hepatitis viruses	02
6.	Human Immuno deficiency Virus (HIV)	01
7.	Adeno oncogenic viruses.	02
	PARASITOLOGY	
1.	Introduction to parasitic diseases	01
2.	Entamoeba histolytica, E. Gingivalis Malaria, Leishmania	03
	MYCOLOGY	
1.	Candidiasis (in detail)	02
2.	Rhinosporidiosis	02
	APPLIED MICROBIOLOGY	
1.	Immunisation schedule, Collection of materials, Experimental animals & hospital infections - In Brief	02

MUST KNOW - MANDATORY TO KNOW

I **GENERAL BACTERIOLOGY**

1. Morphology - Structure, appendages, demonstration.
2. Physiology - Nutritional requirement, growth curve.
3. Bacterial genetics - Mechanism of genetic transfer, drug resistance.
4. Infection- definition, bacterial factors, Host factors, types of infection, carrier, septecaemia, bacteraemia, pyemia, toxemia, epidemic, endemic, pandemic, nosocomial infection.

II. IMMUNOLOGY

1. Immunity - Definition, classification, factors, mechanisms examples
2. Antigens - definition, types and properties.
3. Antibodies - structure, functions of diff. types of Immuno globulins.
4. Immune system - structure, function of T cells, B cells, differences.
5. Immune response - factors responsible for immune variations, adjuvants, mechanism.
6. Antigen - Antibody reactions - definition, mechanism, examples, clinical applications of AG-AB reactions like agglutination, precipitation, Complement Fixation Test (CFT), Neutralisation, Fluorescent Immune test, Opsonisation , ELISA test etc.
7. Hypersensitivity - definition, classification, mechanisms.
8. Autoimmunity - Theories, definition, classification, mechanisms.

III. SYSTEMATIC BACTERIOLOGY

1. Staphylococci - Classification, morphology, pathogenesis, pathogenecity tests, lesions, lab diagnosis and treatment.
2. Streptococci - Classification, morphology, cultural characters, Pathogenesis, lab diagnosis, sequelae, Dental plaque, Dental caries & its diagnosis.
3. Pneumococci - Morphology, cultural characters, diff. between pneumococci and streptococci, pathogenecity and lab diagnosis.
4. Meningococci - Causes of bacterial meningitis, Morphology, lab diagnosis of bacterial meningitis including meningococcal meningitis.

5. Corynebacterium - diphtheriae - Morphology, cultural characters toxigenecity, its occurrence, spread, lab diagnosis, prophylaxis.
6. Bacillus species - Morphology, lesions and lab diagnosis.
7. Clostridia - Classification, pathogenesis, lab diagnosis of gas gangrene tetanus, prophylaxis and clinical features.
8. Nansporing anaerobes - Classification, pathogenesis, lesions, Lab diagnosis in respect to dental infections.
9. Mycobacteria - Mycobacterium leprae, Mycobacterium tuberculosis, Atypical mycobacteria, Morphology, classification, cultural characters, pathogenesis, lab diagnosis, susceptibility test and prophylaxis.
10. Actinomycosis - Morphology, lesions in respect to orofacial lesions, lab diagnosis
11. Spirochaets - classification, morphology, pathogenesis & lab diagnosis of Treponema, Borrelia, Leptospira.
12. Normal Bacterial flora of the oral cavity - Enumerating the organisms opportunistic importance in dental practice.

IV. VIROLOGY

1. General virology - general properties, definition, classification, structure, pathogenesis, cultivation, lab diagnosis, antiviral agents immunology.
2. Herpes viruses - structure, classifications, lesions and lab diagnosis HSV 1, 2, EBV CMV, Virus Zoster (VZ) virus
3. Measles & Mumps viruses - structure, lesions, prophylaxis and lab diagnosis.
4. Hepatitis viruses - ABCDE; structure, route of entry, lesions, lab diagnosis and prophylaxis.
5. HIV - classification, structure, pathogenesis, route of entry opportunistic infection in AIDS, lab diagnosis - prophylaxis

V. MYCOLOGY

1. Candida - Morphology, lesions, lab diagnosis, diff. Species in relation to oral candidiasis
2. Rhinosporidiosis

VI. PARASITOLOGY

Introduction to parasitology - classification, general diseases caused by them.

Entamoeba, Malaria, Leishmania - Morphology, Clinical features, pathogenesis and lab diagnosis.

DESIRABLE TO KNOW (Theory questions need not be asked from this list)

I. GENERAL BACTERIOLOGY :

1. Introduction
2. Historical aspects

II. IMMUNOLOGY :

1. Complement - properties and functions.
2. Immuno deficiency diseases, enumerating the diseases
3. Immunology of transplantation, classification and brief description of transplantation.

III. BACTERIOLOGY :

1. Gonococci - Morphology, lesions, lab diagnosis.
2. Coliforms - Classification, pathogenesis, infections caused by them and lab diagnosis.
3. Proteus - Classification, pathogenesis, infections caused by them and lab diagnosis.
4. Salmonella - pathogenesis, lab diagnosis, prophylaxis.
5. Shigella - classification, pathogenesis, lab diagnosis
6. Vibrio - pathogenesis & lab diagnosis
7. Pseudomonas - Importance in hospital infection and drug resistance.

IV. VIROLOGY :

1. Adeno & oncogenic viruses.
2. Rabies viruses- structure, pathogenesis, clinical feature, lab diagnosis, prophylaxis.
3. Poliomyelitis - Pathogenesis, clinical feature, lab diagnosis, prophylaxis.

V. PARASITOLOGY:

1. Important Helminthic parasites.

VI . APPLIED MICROBIOLOGY :

1. Immunisation schedule - prophylaxis
2. Collection of materials - for lab diagnosis
3. Experimental animals - Uses of animals in dentistry

PRACTICALS & PRACTICAL DEMONSTRATIONS : 50 Hours
MUST KNOW :

PRACTICAL DEMONSTRATIONS

1. Sterilisation and disinfection in detail	06x02 = 12
2. Culture media	03x02 = 06
3. Cultural methods & Anaerobic methods	02x02 = 04
4. Identification of bacteria & demonstration	02x02 = 04
5. Microscopy	02x02 = 04

PRACTICALS

6. Simple stain and hanging drop (Not form exams)	01x02 = 02
7. Grams stain	03x02 = 06
8. Alberts stain	03x02 = 06
9. Ziehl Neilsen's stain	03x02 = 06

	Total Hrs. 50

Sterilization - definition, classification, methods, physical, filteration, radiation, chemicals - used in dental practice, hospital practice.

Culture media - Classification, uses.

Culture methods - Inoculation methods, antibiotic sensitivity, Anaerobic culture techniques.

Microscopy - maintenance, uses, different parts, different types.

LIST OF PRACTICAL MATERIALS

SLIDES FOR DEMONSTRATION :

1. Staphylococcus
2. Streptococcus
3. Gonococcus
4. Pneumococcus
5. M Tuberculosis
6. M Leprae
7. Anthrax
8. Cl. Tetani
9. Spirochaetes
10. Gram Negative Bacilli
11. Candida
12. (Actinomyces)

SLIDES FOR PRACTICAL EXERCISES :

Grams stain -Staphylococci
- Gram negative bacilli
- Mixture of any two organisms
- Gram stain of the oral cavity.

Alberts stain - Kleb's Loffeler's Bacilli (KLB) culture slide

Ziehl-Neelson's stain - Sputum positive for AFB

MEDIA FOR DEMONSTRATION :

UNINOCULATED MEDIA :

1. Nutrient agar plate
2. Blood agar plate
3. Chocolate agar plate
4. Macconkey agar plate
5. Glucose citrate broth (Blood culture bottle)
6. Lowenstein Johnson's Media slope
7. Loefflers serum slope
8. Sabourauds slope
9. Robert Cooked Meat broth

INOCULATED MEDIA :

1. Nutrient agar with staphylococci
2. Blood Agar with Alpha Haemolytic Streptococci.
3. Blood Agar with Beta Haemolytic Streptococci.
4. Potassium Tellurite with growth of C.diphtheriae
5. Milk agar with staphylococci
6. Antibiotics sensitivity plate

INSTRUMENTS :

1. VDRL slide
2. Tuberculin syringe
3. Sterile swab
4. Seitz filter
5. Macintosh filds jar
6. Widal rack with tubes
7. Microtitre plate
8. Disposable syringe
9. Surgical gloves

Scheme of Examination

A. Theory : 35 Marks

Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
One Long Essay question from Systematic Bacteriology	Long Essays 1 x 10 marks	10
One question from General bacteriology One question from Immunology One question from Mycology One question from Parasitology / Oral Microbiology One question from Systematic Bacteriology	Short Essays 3 x 5 marks	15
One question from General bacteriology One question from Immunology One question from Systematic Bacteriology Two questions from Virology	Short Answers 5 x 2 marks	10
	Total	**35**

B. Viva Voce : 10 Marks
C. Internal Assessment - Theory : 05 marks, Practicals : 05 marks
D. Practicals : 45 Marks

Spotters : 10 Slides- 05 — 15 Marks
Media- 03 — 10 Marks
Instruments- 02 — 10 Marks
Gram's Stain
Ziehl - Neelsen's Stain

Text Books Recommended :

Name of the Book & Title	Author	Edn. and Yr. of Publication	Publisher's Name and Place of Publication	Price
Text Book of Microbiology	R.Anantha Narayan and C. K. Jayaram Paniker	7th 2005	Orient Longman Private Ltd. Chennai	Rs. 310/-
Medical Microbiology Volume I	Cruickshank	13th 1989	Medical Division Orient Longman group Edinburg	£ 10.50
Text Book of Bacteriology	Fair Brothers	--	--	--

Reference Books

Name of the Book & Title	Author	Edn. and Yr. of Publication	Publisher's Name and Place of Publication	Price
Bacteriology for Dental Students	T.H. Merville and G.L. Slack	--	Medical Book Ltd. London	--
Bacteriology for students of Dental Surgery	R.B. Lucas and IvorR.H.Kramer	--	Calcutta	--
Oral Microbiology and Infectious Diseases	Burnett and Scherp	--	Oxford Book Company Calcutta	--
Immunology	Donald M Weir	7th 1993	Longman Singapore Pub. Lt. Singapore	£ 2.50
Medical Parasitology	N. C. Dey and T.K.Dey	10th 1997	New Central Book Agency Pvt.Ltd. Calcutta	Rs. 150/-
Notes on Medical Virology	Morag C. Timbury	--	--	£ 5.00
Manual of Clinical Mycology	Conant and Smith	--	--	--

II BDS
ORAL PATHOLOGY AND MICROBIOLOGY

Theory : 25 Hours
Practical : 50 Hours

MUST KNOW

1. Developmental Disturbances of oral and para oral structures :(15 hrs)

a. Developmental disturbances of Jaws
   - Agnathia, Micrognathia, Macrognathia, Facial Hemihypertrophy, Facial Hemiatropy

b. Developmental Disturbances of lips and palate
   - Congenital Lip pits and Commissural pits and fistulas
   - Double lip, Cleft lip, cleft Palate, Chelitis Glandularis, Chelitis Granulomatosa, Hereditary Intestinal Polyposis, Hereditary Melanotid Macule

c. Developmental disturbances of Oral Mucosa
   - Fordyce's Granules
   - Focal epithelial Hyperplasia

d. Developmental disturbances of gingiva
   - Fibromatosis Gingiva, Retrocuspid Papilla

e. Developmental Disturbances of Tongue
   - Macroglossia, Microglossia, Ankyloglossia, Cleft Tongue, Fissured Tongue, Median Rhomboid Glossitis, Benign Migratory Glossitis, Hairy Tongue.
   - Aglossia,macroglossia, Microglossia, Ankyloglossia, Cleft Tongue, Fissured Tongue, Median Rhomboid Glossitis, Benign Migratory Glossitis, Hairy Tongue,lingual Varices,lingual Thyroid Nodule

f. Development disturbances of oral lymphoid tissue:
   - Reactive lymphoid aggregates
   - Lymphoid hamartoma
   - Lympho-epithelial cyst

g. Developmental disturbances of salivary glands:
   - Aplasia, Xerostomia, Hyperplasia of the palatal glands, Atresia, Abberrancy, Stafine's cyst Anterior Lingual Depression

h. Developmental disturbances in size of teeth:
   - Microdontia, Macrodontia

I. Developmental disturbances in the shape of the teeth:
   - Fusion, Germination, Concrescence, Dilacerations, Talon's Cusp, Dens in Dente, Dens Evaginatus, Taurodontism, Supernumerary Roots, Enamel Pearl

j. Developmental Disturbances in number of teeth
   - Anodontia, Supernumerary teeth, Predecidious and Post Permanent dentition

k. Developmental Disturbances in Structure of Teeth:
   - Amelogenesis Imperfecta, Enamel Hypoplasia, Dentinogenesis Imperfecta, Dentinal dysplasia, Regional Odontodysplasia, Shell Teeth.

l. Developmental Disturbances in eruption of teeth:
   - Premature Eruptions, Eruption Sequestrum, Delayed Eruption, Multiple Unerupted teeth, Submerged Teeth. Embedded and Impacted Teeth

m. Developmental / Fissural cysts of the Oral cavity
- Median palatal cyst, Globulomaxillary cyst, Median Mandibular cyst, Naso-alveolar cyst, Palatal cyst of neonates, Thyroglossal duct cyst, Epidermoid, and Dermoid cyst, Nasopalatine duct cyst.

2. Dental Caries **(5 hrs)**
- Theories and Etiology
- Clinical features
- Classification
- Histopathology
- Immunology
- Caries activity Tests
- Factors Influencing Caries

3. Diseases of the pulp and Periapical tissues(5 hrs) **(5 hrs)**
a. Diseases of the Dental Pulp
- Focal Reversible Pulpitis, Acute Pulpitis, Chronic Pulpitis, Chronic Hyperplastic Pulpitis.

b. Diseases of the Periapical Tissues
- Acute Apical Periodontitis, Periapical Granuloma, Periapical Abscess, Periapical Cyst

c. Osteomyelitis
- Acute Suppurative Osteomyelitis, Chronic Suppurative Osteomyelitis,chronic Focal And Diffuse Sclerosing Osteomyelitis, Chronic Osteomyelitis With Proliferative Periostitis

Practicals : 50 hours
Identification of Hard and Soft Tissue Specimens

Text Books Recommended :

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication	Price
Shafer's Text Book of Oral Pathology	R. Rajendran & BShivapathasu -ndaram	6th	2009	Elsevier	Rs. 876/-
Oral Pathology Clinical Pathologic Correlation	Regezi & Scuiba	5th	2007	W. B. Saunders Company USA	$ 25
Textbook of Oral and Maxillofacial Pathology	Neville, Damm. Allen, Bouquot	3rd	2009	Elsevier	-
Oral Diseases in The Tropics	Prabu, Wilson, Duftry, Johnson	1st	1992	Oxford University Press	Rs. 400/-

Other suggested reading
1. Pathology of Tumors-Lucas
2. Oral Immunology - Lehner
3. Oral Pathology - Soames and Southam
4. Contemporary Oral and Maxillofacial Pathology - SAPP Eversole, Wysocki,
5. Colour Atlas of Oral Pathology - John Everson And Crispian Scully

III BDS
GENERAL MEDICINE

Special emphasis should be given throughout on the importance of various diseases as applicable to dentistry e.g.: indications and contraindications for anesthesia in oral and dental procedures in different diseases. A dental student should be taught in such a manner that he is able to record the pulse, blood pressure and be capable of suspecting by sight and superficial examination of the body, diseases of the heart, lungs, kidneys, blood etc. He should be capable of handling medical emergencies encountered in dental practice. Too much details and treatment aspect (therapeutics) should be avoided.

Theory : 60 Hours (Medicine - 52 Hours, Psychology - 8 hours)

Must know	Desirable to know	Hours
1. Aims of Medicine, definition of diagnosis, treatment & prognosis. History taking, physical examination of the patient, diagnosis and management of disease.	Genetics and disease Medical Ethics	2 Hours
2. Infections: Enteric fever, HIV, Herpes simplex, Herpes zoster, Syphilis, Diphtheria, Malaria, Actinomycosis, Viral hepatitis, Tuberculosis.	Infectious mononucleosis, Mumps, Measles , R u b e l l a , Le p ro s y, Organisation and functions of the immune systems.	5 Hours
3. GIT: Stomatitis, Gingival hyperplasia, Dysphagia, Acid peptic disease, Jaundice, Acute and chronic hepatitis, Cirrhosis of liver, Ascitis, Amoebiasis, Tender hepatomegaly, Hepatotoxic drugs, Portal hypertension.	Diarrhoea and dysentery including Malabsorption syndromes, Helicobacter pylori	5 Hours
4.C.V.S: Acute rheumatic fever, Valvular heart disease, Hypertension, Ischemic heart disease (myocardial infarction), Infective Endocarditis, Common arrhythmias, Classification of congenital heart disease	Heart failure, Fallot's tetralogy, ASD, VSD.	7 Hours
5. Respiratory system: Applied anatomy and physiology of RS, Pneumonia, COPD, Pulmonary Tuberculosis, Bronchial asthma, Pleural effusion, Acute respiratory tract infections, Pulmonary embolism, Suppurative lung diseases, Lung abscess,	Bronchiectasis, Lung cancer. Empyema, Sleep apnea, ARDS, Respiratory failure	5 Hours
6. Hematology: Hematopoiesis, Anaemias, Clotting and Bleeding disorders, Acute and chronic myeloid leukemias, Agranulocytosis &	Principles of blood and blood products transfusion, Thromboembolic disease,	7 Hours

Neutropenia, Thrombocytopenia, Splenomegaly Lymphomas, oral manifestations of haematological disorders.	Oncogenesis, Hemolytic anemia, DIC, (disseminated intravascular coagulation)	
7. Renal System: Acute Nephritis & Nephrotic syndrome, U.T.I	Renal function tests, CRF	4 Hours
8. Nutrition: Balanced diet, PEM, Vitamin deficiency disease, Calcium and phosphate metabolism. Flurosis	Osteomalacia, Osteoporosis	4 Hours
9. C N S: Facial Palsy, Facial pain, Trigeminal neuralgia, Epilepsy, Headache including migraine	Meningitis (acute and chronic), Anticonvulsants	5 Hours
10. Endocrine: Diabetes Mellitus, Acromegaly, Hypothyroidism,	Addison's disease, Cushing's syndrome, Parathyroid disease and calcium metabolism Preoperative assessment of diabetic patients, Acute adrenal deficiency	5 Hours
11. Critical care medicine: Syncope, Cardiac Pulmonary Resuscitation (CPR), Anaphylaxis, Allergy, Angio-neurotic edema.	Acute LVF, ARDS, Cardiogenic Shock, Coma	3 Hours
Miscellaneous: Adverse drug reactions, Drug interactions	Rheumatoid disease, Osteoarthritis Scleroderma	

Psychology / Psychiatry

Must know	Desirable to know	Hours
1. Introduction to behavioural sciences: Definition Over lapping of social, behavioural and biological sciences	Holistic approach to medical care	2 Hours
2. Pain: Behavioural, emotional, autonomic, conscious and unconscious, components of pain Role of anxiety in worsening pain (vicious circle)		5 Hours
3. Interview technique: Doctor-patient relation, listening and questioning. Pre and post treatment counselling, probing Of the fears, anxiety and anger, guilt in cases Of extraction, surgery, HIV, cancer etc.		5 Hours
4. Psychiatric disorders: Classification of mental illnesses. Aetiology - Biopsychological aspects.	Psychosis psychosomatic illnesses, alcoholism and drug dependence, dementia, illness behaviour, socio-cultural aspects stressing on personalities (anxisus, obsessive)	7 Hours
5. Neurotic disorders and psychosomatic: Definition, classification, aetiology, clinical manifestations (anxiety, depression, phobia, somatoform disorders, conversion reaction, adjustment reaction), stress, coping, alexithymia.	Management - Stress	5 Hours
6. Liaison psychiatry: Dental care in mental retardation, dementia, Schizophrenia Eating disorders - deficiencies. Psychotropic drugs- side effects and drug interactions.		7 Hours

Clinical : 90 Hours (posting in a general hospital)

1. Five complete cases must be written in a record book before the student takes the final examination.
2. The student must be able to take history, do general physical examination (including build, nourishment, pulse, BP temperature, edema, cyanosis, clubbing, jaundice, lymphadenopathy, oral, cavity) and be able to examine cardiovascular and respiratory systems, abdomen and the facial nerve and signs of meningeal irritation.

Scheme of Examination

A. Theory : 100 Marks

Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
From Must Know topics only (sl. no. 1 to 11 under Theory)	Long Essays 2 x 10 marks	20
From Must Know topics only (sl. no. 1 to 11 under Theory) And Psychology/Psychiatry	Short Essays 10 x 5 marks	50
From Must Know topics only (sl. no. 1 to 11 under Theory)	Short Answers 10 x 3 marks	30
	Total	**100**

B. Viva Voce : 25 Marks

C. Internal Assessment - Theory : 25 marks, Practicals : 25 marks

D. Clinicals : 75 Marks

i. Case History	:	10 marks
ii. Clinical Examination	:	30 marks
iii. Investigation	:	10 marks
iv. Diagnosis & D. D.	:	10 marks
v. Management	:	05 marks

Textbooks recommended:

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication	Price
Davidson's Principles of Practice of Medicine	Edward Christopher	18th	1991	Churchill Livingstone UK	Rs. 1168/-
Hutchison's Clinical Practice	Swash Michael	21st	2001	Churchill Livingstone UK	Rs. 595/-
Principles of Internal Medicine (for further reading)	Harrison	15th	2001	Mc. Graw Hill US	Rs. 1895/-
API Textbook of Medicine	Association of Physicians of India		1999	India	Rs. 900/-

GENERAL SURGERY

Theory: 60 Hours

1. Introduction - History of Surgery	1 hour
2. Principles of surgery, Tissue care, Asepsis and anti sepsis, Theatre technique, Sterilization, Suture materials, diathermy, Laser.	2 hour
3. Classification of Diseases, General Scheme of Studying a disease - Etio-pathology, Clinical features, Investigations, Diagnosis, Management, Complications, Prognosis	2 hour
4. Wounds - Classification, Clinical Assessment, Treatment, Complications, Wound Healing.	1 hour
5. Skin Grafting	1 hour
6. Inflammation and Infection - Definition, Etiology, Pathology, Classification	1 hour
7. Acute Infections - Non-specific, and Specific - Aerobic and Anaerobic abscess, Cellulites, Carbuncle, Erysipelas, Anthrax, Gonorrhea, gas Gangrene, Tetanus, Cancrum Oris, Ludwig's Angina.	2 hour
8. Chronic Infections - Nonspecific, and Specific - Tuberculosis, Syphilis, Actinomycosis, Leprosy.	2 hour
9. AIDS	2 hour
10. Bacteraemia, Septicemia, Pyaemia, Toxaemia	1 hour
11. Hemorrhage - Classification, emergency Management, Definitive Treatment, Assessment of Blood Loss.	1 hour
12. Bleeding Disorders - Coagulation Mechanism.	1 hour
13. Syncope, Shock, Cardiac Arrest - Causes, clinical Features, Haemodynamic Changes, emergency Care, Monitoring, Definitive Treatment, Septic Shock (warm shock), Anaphylaxis.	1 hour
14. Blood Groups - Blood Transfusion - Complications of Transfusion and Management, Massive Transfusion.	1 hour
15. Blood Fractions and their uses.	1 hour
16. Ulcers - Definition, classification, etiology, Nonspecific Ulcers, Specific Ulcers - Tuberculous Ulcers, Syphilitic Ulcer, Malignant Ulcers - Squamous	2 hour

cell Carcinoma, Basal Cell Carcinoma, Malignant Melanoma, Marjolin's Ucler,Diabetic Ulcer.	
17. Sinus and Fistula	1 hour
18. Gangrene - Gas Gangrene, Dry Gangrene, Moist Gangrene - Causes, Management.	1 hour
19. Cysts - Definition, Classification, Clinical Features, Complications, Management.	1 hour
20. Common Cysts - Mucous Cyst, Sebaceous Cyst, Dermoid Cyst, Ranula, Cystic Hygroma, Branchial Cyst, Thyroglossal cyst, Ganglion.	1 hour
21. Tumours - Definition, Classification, Etiology of Cancer, Spread of Cancer, Early Diagnosis, Investigations, Modalities of Treatment and Prognosis, Recent Advances	2 hour
22. Common Benign and Malignant Tumours of Head and Neck Region - Lipoma, Fibroma, Neurofibroma, Haemangioma, Lymphangioma, Osteoma, Carcinoma, Sarcoma	1 hour
23. Biopsy - Indications and Methods	1 hour
24. Diseases of Lymphatic and Lymph nodes - a. Lymphangitis - Acute and Chronic, chronic Lymphoedema b. Lymphadenopathy - Classification i. Inflammatory - Acute and Chronic, Non-specific and Specific - Tubercular Lymphadenitis, Cold abscess - Collar Stud Abscess. ii. Malignant Tumours - - Primary : Hodgkin's Disease, Non Hodgkin's Lymphoma - Secondary carcinoma	1 hour
25. Diseases of Mouth, Lip, Tongue, Palate & Tonsils - - Ulcers, Stomatitis, Leukoplakia, Carcinoma of Lip, Check, Tongue - Ranula - Sublingual Dermoid - Tonsillitis, Quinsy	1 hour
26. Salivary Glands - - Acute and Chronic Infections - Parotid Abscess, Salivary Calculus - Salivary Tumours - Classification, Mixed Parotid Tumours - Carcinoma, Adenolymphoma, Sjogren's Disease.	1 hour
27. Neck Swellings - Midline and Lateral Swellings, Cystic and Solid Swellings. - Classification, Differential diagnosis, Treatment.	1 hour
28. Head Injury Management	1 hour

29. Facio-Maxillary Injuries	1 hour
30. Management of Severely Injured Patient - Resuscitation	1 hour
31. Fractures and Dislocations - Causes, General Principles of Management, Healing of Fractures and Complications	1 hour
32. Fractures of Mandible	1 hour
33. Jaw Swellings - Epulis, Odontomes, Bone Cysts and Tumours, Burkitf's Lymphoma	1 hour
34. Osteomyelitis of Mandible	1 hour
35. Thyroid Gland - Development, Congenital anomalies, Classification of goitres, Acute and Chronic Thyroiditis, Hashimoto's Disease, Reidel's Thyroiditis, Hyperthyroidism, Hypothyroidism, Adenoma, Carcinoma.	1 hour
36. Parathyroid - Hyperparathyroidism, Tetany, Calcium Metabolism.	1 hour
37. Pituitary Gland	1 hour
38. Tracheostomy - Indications, Steps of Operation, Post Operative Care	1 hour
39. Diseases of Arteries and Veins in general - Varicose Veins, Atherosclerosis, Aneurysm, Carotid Body Tumours	1 hour
40. Nervous System - Nerve Injury, Regeneration, Repair, Nerve Grafting. - Facial Nerve Palsy, Trigeminal Neuralgia	1 hour
41. Burns and Scalds	1 hour
42. Development of Face - Cleft Lip and Palate repair	1 hour
43. Principles of Anaesthesia	1 hour

Desirable to Know:

1. Brief Surgical Anatomy of Pharynx, Oesophagus, Paranasal Airsinuses. Diseases related to obstructive ones in pharynx and Oesophagus.

2. Introduction to - Oncology, Radiotherapy, Surgery and Genetic Engineering.
   - 1 Hour

Ophthalmology

Curriculum for III B.D.S. students

Suggestions: 2 lectures-cum-demonstration (clinical \ visual) 5 Hours
I Lecture:- brief Outline of Surgical Anatomy of Eye and Orbit

- An outline of Ocular and Orbital Involvement in relation to Oral Diseases (Infections, Inflammations of the eye like Uveitis / Exopthalmitis / Optic Neuritis / Post-operative infections of the eye due to Dental sepsis / Invasion of tumours of Oral Cavity to the Orbit etc.) / Oral Surgery / Facial Injuries.

II Lecture:- Clinical Assessment of Ocular / Orbital Involvement.

- Recognition of common symptoms and signs of ocular and orbital involvement (Ecchymosis of lids, sub-conjunctival haematoma, Conjunctival Ecchymosis Chemosis, Proptosis: pupils: Diplopias: vision recording etc.)

- Management of superficial foreign bodies in the eye. (Prevention bye protection/through eye wash with normal saline/removal of superficial conjunctival foreign bodies/for corneal or intraocular-foreign bodies to refer immediately)

- Timely referral to Ophthalmologist for any ocular/orbital problem.

E.N.T.

Ear : Middle Ear Infection
Nose : Para nasal sinuses Infection
Throat : Tonsilitis & Peritonsillar Abscess
] 5 hours

Clinicals : 90 Hours (posting in a general hospital)

Scheme of Examination
A. Theory : 100 Marks

Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
• Principles of surgery, Tissue care, Asepsis and anti sepsis, Theatre technique, Sterilization, Suture materials, diathermy, Laser. • Wounds - Classification, Clinical Assessment, Treatment, Complications, Wound Healing. • Acute Infections - Non-specific, and Specific - Aerobic and Anaerobic abscess, Cellulites, Carbuncle, Erysipelas, Anthrax, Gonorrhea, gas Gangrene, Tetanus, Cancrum Oris, Ludwig's Angina. • Bacteraemia, Septicemia, Pyaemia, Toxaemia • Hemorrhage - Classification, emergency Management, Definitive Treatment, Assessment of Blood Loss. • Syncope, Shock, Cardiac Arrest - Causes, clinical Features, Haemodynamic Changes, emergency Care, Monitoring, Definitive Treatment, Septic Shock (warm shock), Anaphylaxis. • Gangrene - Gas Gangrene, Dry Gangrene, Moist Gangrene - Causes, Management.	Long Essays 2 x 10 marks	20
Questions may be asked from all the topics	Short Essays 10 x 5 marks + Short Answers 10 x 3 marks	30 20
	Total	**70**

B. Viva Voce : 20 Marks
C. Internal Assessment - Theory : 10 marks, Practicals : 10 marks
D. Clinicals : 90 Marks

Long Case : One which includes

Case History	10 Marks
Clinical Examination	30 Marks
Suggested investigations	10 Marks
Diagnosis, DD	20 Marks
Management	05 Marks

Books for Reading:

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication	Price
A Manual on Clinical Surgery	Somen Das	4th	1996	Dr.S.Das Calcutta	Rs. 430/-
Bailey & Love's Short Practice of Surgery	Charles. V. M. Ann	23rd	2000	Oxford University Press	$ 29.00
Hamilton Baileys Demonstrations of Physical signs in Clinical Surgery	Hamilton Bailey	18th	1997	Butterworth Heinemann U.K.	$ 67.50

Other Books for Reference:

1. Oxford Text Book of Surgery
2. Text Book of Surgery by Devita
3. Surgery by Sebastin
4. Surgery by somalal
5. Text Book of Surgery by Chatterjee
6. Surgical Anatomy by Heereggor
7. Diseases of Eye by Parson
8. Text Book of Ophthalmology by Vasudev Anand Rao
9. E.N.T. Diseases by Mohammed Muqbool
10. E.N.T. Diseases by N.C.Day
11. E.N.T. Diseases by K.K.Ramalingam

III BDS
ORAL PATHOLOGY AND MICROBIOLOGY

Theory: 120 Hours

ORAL PATHOLOGY

MUST KNOW

1. Benign and Malignant Tumours of the Oral Cavity **(30 hrs)**

a. Benign tumours of epithelial tissue origin
- Papilloma, Keratoacanthoma, Nevus

b. Premalignant lesions and conditions:
- Definition, classification
- Epithelial dysplasia
- Leukoplakia, Carcinoma in-situ, Erythroplakia, Palatal changes associated with reverse smoking, Oral submucous fibrosis

c. Malignant tumours of epithelial tissue origin
- Basal Cell Carcinoma, Epidermoid Carcinoma (Including TNM staging), Verrucous carcinoma, Malignant Melanoma.

d. Benign tumours of connective tissue origin :
- Fibroma, Giant cell Fibroma, Peripheral and Central Ossifying Fibroma, Lipoma, Haemangioma (different types). Lymphangioma, Chondroma, Osteoma, Osteoid Osteoma, Benign Osteoblastoma, Tori and Multiple Exostoses.

e. Tumour like lesions of connective tissue origin :
- Peripheral & Central giant cell granuloma, Pyogenic granuloma, Peripheral ossifying fibroma

f. Malignant Tumours of Connective tissue origin :
- Fibrosarcoma, Chondrosarcoma, Kaposi's Sarcoma Ewing's sarcoma, Osteosarcoma Hodgkin's and Non Hodgkin's Lymphoma, Burkitt's Lymphoma, Multiple Myeloma, Solitary Plasma cell Myeloma.

g. Benign Tumours of Muscle tissue origin :
- Leiomyoma, Rhabdomyoma, Congenital Epulis of newborn, Granular Cell tumor.

h. Benign and malignant tumours of Nerve Tissue Origin
- Neurofibroma & Neurofibromatosis-1, Schwannoma, Traumatic Neuroma, Melanotic Neuroectodermal tumour of infancy, Malignant schwannoma.

i. Metastatic Tumours of Jaws and Soft Tissues of Oral Cavity

2. Tumours of the salivary glands **(8 hrs)**
Classification

a. Benign tumours
- Pleomorphic adenoma
- Warthin's tumor
- Basal cell adenoma
- Canalicular adenoma

b. Malignant tumors of the salivary glands
- Malignant pleomorphic adenoma
- Adenoid Cystic carcinoma
- Acinic Cell carcinoma
- Mucopepidermoid carcinoma
- Central Mucoepidermoid carcinoma
- Clear cell carcinoma

c. Non Neoplastic enlargement of Salivary glands
- Sjogrens syndrome
- Mickulicz's disease
- Necrotising Sialometaplasia

3. Cysts of Odontogenic Origin & Pseudocysts **(8 hrs)**
- Introduction and Classification of Cysts of Oral Region
- Odontogenic Cysts
- Odontogenic Keratocyst, Dentigerous Cyst, Dental Lamina Cyst of newborn, Gingival Cyst of adults, Lateral Periodontal Cyst, Calcifying Odontogenic Cyst, Radicular Cyst.
- Pseudocysts
- Aneurysmal bone cyst, Traumatic bone cyst, Mucous extravasation phenomenon

4. Tumours of Odontogenic Origin **(9 hrs)**
- Classification

BENIGN:

a. Odontogenic epithelium without Odontogenic ectomesenchyme- Ameloblastoma, Calcifying Epithelial Odontogenic Tumour, Adenomatoid Odontogenic Tumour, Squamous Odontogenic Tumor

b. Odontogenic epithelium with Odontogenic ectomesenchyme with or without hard tissue formation-- Ameloblastic Fibroma, Ameloblastic Fibro-odontoma, Odontoma, Dentinogenic Ghost cell Tumor

c. Odontogenic ectomesenchyme with or without included Odontogenic epithelium- Peripheral and Central Odontogenic Fibroma, Odontogenic Myxoma, Benign Cementoblastoma.

MALIGNANT

a. Odontogenic carcinomas : Metastasizing ameloblastoma, Ameloblastic carcinoma

5. Regressive alterations of teeth **(2 hrs)**

a. Attrition, abrasion, erosion, abfraction
b. Dentinal sclerosis, dead tracts, secondary dentin, pulp calcifications
c. Resorption of teeth (internal & external)
d. Hypercementosis and Cementicles

6. Infections of the Oral cavity(10 hrs)

a. Bacterial Infections: Scarlet fever, Diphtheria, Tuberculosis, Syphilis,actinomycosis, Tetanus, Noma.
b. Viral Infections : Herpes Simplex, Measles, Mumps, Chicken Pox, Herpes Zoster, Cytomegalic Inclusion disease, H.I.V and Oral Manifestations of AIDS
c. Fungal Infections : Candidiasis, Histoplasmosis, Phycomycosis and Rhinosporidosis.

7. Allergic and Immunological Diseases of the Oral cavity **(2 hrs)**

- Immunological Diseases: Recurrent Aphthous Stomatitis, Bechet's Syndrome, Reiter's Syndrome, Sarcoidosis, Wegener's Granulomatosis
- Allergic Diseases: Angioedema, Stomatitis Medicamentosa, Stomatitis Venenata

8. Spread of Oral Infection **(2 hrs)**

a. Cellulitis, Ludwig's Angina, Intra Cranial Complication of Dental Infection, Maxillary sinusitis, Focal Infection and foci of Infection (Definition, Mechanism and significance)

9. Physical and Chemical Injuries of the Oral Cavity **(5 hrs)**

a. Physical Injuries of Teeth
- Bruxism, Ankylosis

b. Physical Injuries of Bone
- Traumatic Bone Cyst

c. Physical Injuries of Soft tissues
- Traumatic Ulcer, Denture Injuries of the Mucosa, Mucous Retention Phenomena

d. Chemical Injuries of Oral Cavity
- Aspirin Burn
- Lead, Mercury and Bismuth Poisoning
- Acrodynia
- Silver poisoning
- Dilantin sodium -induced gingival enlargement
- Tetracycline

e. Effects of Radiation on bone and Oral Mucosa

10. Biopsy, Cytology and Healing of Oral Wounds(5 hrs)

- Factors affecting the healing of wounds
- Healing of Extraction Wound and Dry Socket
- Healing of Fracture
- Biopsy:
- Biopsy Techniques, Processing Of Tissues With A Brief Account Of Routine Stains Used, Healing Of The Biopsy Wound
- Basic Aspects of Cytology:
- Indications, Staining of Cytosmears, Interpretation of Cytosmears
- Re-Implantation and Transplantation of Teeth

11. Disease of Bone (8 hrs)

- Genetic:
- Osteogenesis Imperfecta, Cleidocranial Dysplasia, Craniofacial Dysostosis, Mandibulofacial Dysostosis, Pierre Robin Anomalad, Marfan's Syndrome, Down's Syndrome, Osteopetrosis, Achondroplasia, Cherubism

- Fibro-Osseous Lesions
- Fibrous Dysplasia
- Cemento-osseous dysplasias

- Unknown Etiology:
- Paget's Disease, Histiocytosis-X-Disease

- Disorders of the Temproromandibular Joint:
- Developmental disturbances of the TMJ
- Ankylosis of the TMJ
- Subluxation and luxation
- Myofascial pain dysfunction syndrome

12. Blood Dyscrasias (4 hrs)

- Clinico-pathological aspects and oral manifestations of Anemias, Polycythemia, Leukopenia, Neutropenia, Agranulocytosis, Chediak-Higashi Syndrome, Leukocytosis, Infectious mononucleosis, Leukaemias, Purpura, Haemophilia

13. Diseases of Periodontology (5 hrs)

- Stains, Calculus, Dental Plaque
- Gingivitis, Acute Necrotizing Ulcerative Gingivitis (ANUG), Gingival hyperplasia, Periodontitis, Juvenile periodontitis

14. Diseases of Skin (10 hrs)

- Hereditary:
- Hereditary Ectodermal Dysplasia, Chondroectodermal Dysplasia, Dyskeratosis Congenita, White Sponge Nevus, Hereditary Benign Intra Epithelial Dyskeratosis, Ehler-Danlos Syndrome

- Immune-mediated:

- Lichen Planus, Pemphigus, Benign Mucous Membrane Pemphigoid, Cicatricial Pemphigoid, Psoriasis, Erythema Multiformae, Epidermolysis Bullosa, Scleroderma, Lupus Erythematosus

15. Defence Mechanisms of the Oral Cavity (1 hrs)

16. Introduction to Forensic Odontology (2hrs)

- Introduction, definition, aims & scope.
- Sex and ethnic (racial) differences in tooth morphology and histological age estimation
- Determination of sex & blood groups from buccal mucosa/ saliva
- Dental DNA methods
- Bite marks, rugae patterns and lip prints
- Dental importance of poisons and corrosives
- Overview of forensic medicine and toxicology

17. Oral Aspects Of Metabolic Disease: (5 Hrs)

- Oral Aspects of Disturbances in Mineral Metabolism: Calcium, Phosphorus, Magnesium, Zinc, Fluorine, Iron

- Oral Aspects of Avitaminoses and Hypervitaminoses: Vitamin A, Vitamin D, Vitamin C, Vitamin B complex

- Oral Aspects of Disturbances in Hormone Metabolism: Hypopituitarism, Hyperpituitarism, Hyperthyroidism, Hypothyroidism, Hypoparathyroidism, Hyperparathyroidism, Addison's disease, Cushing's Syndrome, Diabetes Mellitas

18. Diseases of Nerves: (2hrs)

- Trigeminal neuralgia, Sphenopalatine neuralgia, Frey's Síndrome, Burning Mouth Síndrome

Oral Microbiology (3 Hrs)

1. Normal Oral Microbial Flora

2. Microbiology of Dental Caries
- Streptococcus mutans, Lactobacillus acidophilus, Actinomyces israelii, Veillonella

3. Microbiology of Periodontal Diseases:
- Borrelia vincentii, Fusobacteria, Actinomycetes actinomycetum-comitans

4. Microbiology of Oral Infections:
- Bacteria: Mycobacterium tuberculosis, Treponema pallidum
- Viruses: Herpes group of viruses, Human immunodeficiency virus
- Fungi: Candida albicans

Practicals : 80 hours

a. Identification of Hard and Soft Tissue Specimens
b. Demonstration of Cytosmear and bacteriology smear
c. Identification of Microscopic slides of Various Oral Lesions

Identification of the histopathologic slides of the following lesions :

1. Pit & fissure caries
2. Smooth surface caries
3. Dental caries - liquefaction foci
4. Pulp polyp
5. Periapical granuloma
6. Dentigerous cyst
7. Radicular cyst
8. Cholesterol clefts / cholesterol crystals
9. Rushton bodies
10. Calcifying odontogenic cyst
11. Mucocele
12. Leukoplakia
13. Carcinoma-in-situ
14. Oral submucous fibrosis (h/e)
15. Fordyce's spots
16. Papilloma
17. Fibroma
18. Lipoma
19. Capillary hemangioma
20. Cavernous hemangioma
21. Lymphangioma
22. Schwannoma
23. Well differentiated squamous cell carcinoma
24. Moderately differentiated squamous cell carcinoma
25. Verrucous carcinoma
26. Malignant melanoma
27. Osteosarcoma
28. Pyogenic granuloma
29. Fibrous dysplasia
30. Ossifying fibroma
31. Paget's disease
32. Osteomyelitis (acute)
33. Osteomyelitis (chronic)
34. Peripheral giant cell granuloma
35. Central gaint cell granuloma
36. Ameloblastoma (follicular)
37. Ameloblastoma (plexiform)
38. Ameloblastoma (granular cell variant)
39. Adenomatoid odontogenic tumour
40. Cementoblastoma
41. Ameloblastic fibroma
42. Compound odontome
43. Pleomorphic adenoma, preferably with metaplastic areas
44. Warthin's tumour
45. Mucoepidermoid carcinoma (high grade)

46. Mucoepidermoid carcinoma (low grade)
47. Adenoid cystic carcinoma (pas)
48. Necrotizing sialometaplasia
49. Lichen planus with civatte bodies
50. Pemphigus
51. Tuberculosis
52. Actinomycosis
53. Candidiasis

ADDITIONAL TOPICS:

1. Ultrastructural features, Immunofluorescence techniques for muco-cutaneous lesions and viral infections
2. Basics of immunology
3. Different type of Microscopy used in the diagnosis of oral lesions
4. Syndromes

Scheme of Examination

A. Theory : 70 Marks

Distribution of Topics and Type of Questions

Contents	Type of Questions and Marks	Marks
Both questions from Oral Pathology only	Long Essays 02 x 10 marks	20
a. 6 questions on Oral pathology b. 2 questions on Oral microbiology	Short Essays 08 x 5 marks	40
a. 4 questions on Oral pathology b. 1 question on Oral microbiology	Short Answers 05 x 2marks	10
	Total	**70**

B. Viva Voce : 20 Marks

C. Internal Assessment - Theory : 10 Marks, Practicals : 10marks

D. PRACTICALS : 90 Marks

Spotters (total 15 spotters)

1. Specimen : Identification & Points in Support 6x5=30 marks
2. Slides : Slides, diagrams, Labelling & Salient features, 12 slides 12x5=60 marks

Text Books Recommended :

Name of the Book & Title	Author	Edn.	Publisher's Name and Place of Publication	Price
Oral pathology -Clinical Pathologic Correlation	Regezi & Scuiba	5th	W. B. Saunders Company USA, 2007	$ 25
Shafer's Text Book of Oral Pathology	R. Rajendran B. Sivapathasundharam	6th	Elsevier, 2009	Rs. 876/-
Text Book of Oral and Maxillofacial Pathology	Neville, Damm, Allen, Bouquot	3rd	Elsevier, 2009	-
Essentials of Oral Microbiology	Lakshman P Samaranayake	3rd	Churchill Livingstone, 2006	$ 86.95

Other suggested reading

1. Sapp,Eversole ,Wysocki :Contemporary Oral And Maxillofacial Pathology, 3rd edition
2. R B Lucas: Pathology of tumors of oral tissues, 5th edition
3. Peter.A.Reichart, Hans P.Philipsen: Odontogenic tumors and allied lesions
4. Mervyn Shear, Paul M.Speigh: Cysts of oral and maxillofacial regions, 4th edition
5. S R Prabhu: Oral diseases of the tropics
6. Roitt, Lehner: Oral Immunology
7. Russel J Nisengard, Michael G Newman: Oral Microbiology & Immunology, 2nd edition
8. John Eveson, Crispian Scully: Colour atlas of oral pathology

III BDS
ORAL MEDICINE AND RADIOLOGY

THEORY: 20 HOURS **PRACTICALS: 70 HOURS**

MUST KNOW

III YEAR ORAL MEDICINE THEORY: 12 HOURS

1. Introduction to Oral Medicine- Definition Scope and Clinical Applications	1 hour
2. Principles of oral diagnosis - Definitions. - Importance of diagnosis and various types of diagnosis - Case history and components. - Physical examination methodologies - general examination, extra oral & neck examination , intra oral examination - Concepts of provisional diagnosis, differential diagnosis. - Clinical chair side investigations and radiological investigations, exfoliative cytology; hematological, microbiological, histopathological investigations. - Special investigations --biochemical, sialochemical studies, serology, immunological studies. - Final /confirmed diagnosis. - Formulation of treatment plan & prognosis - Referral for opinions. Examination of swelling, ulcer, erosions, sinus, fistula, pigmented lesions, red and white mucosal lesions, pain, TMJ, and lymphnodes Procedures for post-mortem dental examination; maintaining dental records and their use in dental practice and post mortem identification; jurisprudence and ethics.	3hour
3. Regressive alterations of teeth, Developmental malformations, discoloration of teeth.	1 hour
4. Priniciples, procedures, and protocol for asepsis, sterilisation, infection control.	1 hour
5. Oral sepsis and its effect on general system. Inflammation- injury, infection and spread of infection, facial space infections, osteoradionecrosis.	1 hour
6. Periapical Diseases, And Diseases Of Dental Pulp, Diagnosis Of Dental Caries, Periodontal Diseases Such As Gingival Hyperplasia, Gingivitis, Periodontitis, Pyogenic Granuloma	1 hour
7. Differential diagnosis of orofacial pain: i. Pain arising from diseases of orofacial tissues like teeth, pulp, gingival and periodontal tissues, mucosa, tongue, muscles, blood vessels, lymph nodes, bone, paranasal sinuses, salivary glands etc.	2 hour

ii. Pain arising due to CNS diseases: pain due to intracranial and extracranial involvement of cranial nerves. (multiple sclerosis, cerebrovascular diseases, trotter's syndrome etc.). Neuralgic pain due to unknown causes: trigeminal neuralgia, glossopharyngeal neuralgia, sphenopalatine ganglion neuralgia, periodic migrainous neuralgia and atypical facial pain. iii. Referred pain: pain arising from distant tissues & organs like heart, spine etc.altered sensations like cocageusia, halitosis. **Neuromuscular disorders:** i. Nerves:(a) neuropraxia, (b) neurotemesis (c) neuritis (d) facial nerve paralysis including Bell's palsy, Heerfordt's syndrome, Melkerson Rosenthal syndrome and Ramsay Hunt syndrome (e) neuroma (f) neurofibromatosis (g) Frey's syndrome. ii. Muscles: (a) Myositis ossificans (b) Myofacial pain dysfunction syndrome (c) trismus.	
8. Orofacial Pigmentation: Exogenous And Endogenous Pigmentations	1 hour
9.Pharmcotherapeutics : General therapeutic measures- drugs commonly used in oral medicine viz. Antibiotics, chemotherapeutic agents, anti-inflammatory and analgesic drugs, corticosteriods, antiviral drugs, antifungal drugs, antitubercular drugs, antihistamines, immunomodulators, immunosuppressive drugs, sialogogues, antisialogoguges.	1 hour

III BDS
ORAL MEDICINE AND RADIOLOGY

Radiology
III YEAR THEORY : 8 Hours

1. Introduction to Oral Radiology -History, origin, Definitions, scope & limitations.	1 hour
2. Basic physics in radiology - Radiographic equipment - Radiographic accessories (film holders, beam directional devices, - intensifying screens, extra oral cassettes, grids etc.) - Radiographic image receptors Factors responsible for ideal radiographs: i. KvP and ma of X-ray machine ii. Filters iii. Collimations iv. Intensifying screens v. Grids Faulty radiographs and artefacts in radiographs.	1 hour
- Production of X rays (dark room procedures, composition of developer fixer, safe lighting, processing technique- manual/ automatic, storage of films)	1 hour
- Properties of X rays - Sources of radiation. - Electromagnetic spectrum & types of radiation - Electro physical factors - Collimation, Filtration - Films - Principles of Shadow Casting - Projection Geometry - Object localization techniques	2 hour
3. Principles of Intra oral Radiography, techniques, indications of - IOPA Bitewing, Occlusal radiography - lecture	1 hour
4. Radiographic interpretation - I - Principles, procedures. - Normal radiographic landmarks of jaws & adjacent structures. - Radiographic interpretations & differential diagnosis in dental caries periodontal diseases, periapical disease	2 hour

III BDS
ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

Course Details - III Year B.D.S and IV Year B.D.S

TEACHING HOURS:

Mode of Teaching	III Year B.D.S	IV Year B.D.S
Theory	20 Hours	30 Hours
Clinical	70 Hours	100 Hours
Total	**90 Hours**	**130 Hours**

III YEAR B.D.S - COURSE SYLLABUS:

Subject	Hours
1. Introduction, Definition, Historical Background, Aims and Objectives of Orthodontics and Need for Orthodontic care.	1 Hour
2. Growth and Development: In General a. Definition b. Growth spurts and Differential growth c. Factors influencing growth and development d. Methods of measuring growth e. Growth theories (Genetic, Sicher's, Scott's, Moss's, Petrovics, Multifactorial) f. Genetic and epigenetic factors in growth g. Cephalocaudal gradient in growth Morphologic Development of Craniofacial Structures a. Methods of Bone growth b. Prenatal growth of craniofacial structures c. Postnatal growth and development of: cranial base, maxilla, mandible, dental arches and occlusion	6 Hours
3. Functional Development of Dental Arches and Occlusion a. Factors influencing functional development of dental arches & occlusion b. Forces of occlusion c. Wolfe's law of transformation of bone d. Trajectories of forces Clinical Application of Growth and Development	2 Hours
4. Malocclusion - In General a. Concept of normal occlusion	3 Hours

b. Definition of malocclusion c. Description of different types of Dental, skeletal and functional malocclusion Classification of Malocclusion Principle, description, advantages and disadvantages of classification of malocclusion by Angle and modification, Simon, Lischer and Ackerman and Proffitt.	
5. Normal and Abnormal Function of Stomatognathic System	1 Hour
6. Aetiology of Malocclusion a. Definition, importance, classification, local & general aetiological factors b. Etiology of following different types of malocclusion i. Midline diastema ii. Spacing iii. Crowding iv. Cross-Bite: Anterior / Posterior v. Class III Malocclusion vi. Class II Malocclusion vii. Deep Bite viii. Open Bite	3 Hours
7. Diagnosis and Diagnostic Aids a. Definition, Importance and classification of diagnostic aids b. Importance of case history and clinical examination in orthodontics c. Study Models: - Importance and uses - Preparation and preservation of study models d. Importance of intraoral X-rays in orthodontics e. Panoramic radiographs - Principles, Advantages, Disadvantages and uses f. Cephalometrics: Its advantages and disadvantages i. Definition ii. Description and use of cephalostat iii. Description and uses of anatomical landmarks lines and angles used in cephalometric and analysis iv. Analysis - Steiner's, Down's, Tweed's. Ricket's E-line g. Electromyography and its use in orthodontics h. Wrist X-rays and its importance in orthodontics	4 Hours

CLINICALS AND PRATICALS IN ORTHODONTICS DURING III B.D.S - 70 Hours

PRATICAL TRAINING DURING III B.D.S

1. Basic wire bending exercises Gauge 22 or 0.7mm
   a. Straightening of wires (4 Nos)
   b. Bending of equilateral triangle
   c. Bending of a rectangle
   d. Bending of a square
   e. Bending of a circle

f. Bending of U.V.

2. Construction of Clasps (upper / lower) Gauge 22 or 0.7mm
   a. ¾ clasp (C-Clasp)
   b. Full clasp (Jackson's Crib)
   c. Adam's Clasp
   d. Triangular Clasp

3. 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)
   d. T-Springs on premolars

4. Construction of Canine retractors Gauge 23 or 0.6mm
   e. U - loop canine retractor (Upper and lower)
   f. Helical canine retractor (Upper and lower)
   g. Buccal canine retractor: - Self supported Buccal canine retractor with
   i. Sleeve - 5mm wire of 24 Gauge
   ii. Sleeve - 19 Gauge needle on any one side
   h. Palatal canine retractor on upper both sides - Gauge 23 or 0.6mm

5. Labial Bow
   i. Gauge 22 or 0.7mm
   j. One on both upper and lower

CLINICAL TRAINING DURING III B.D.S

1. Making upper Alginate impression

2. Making lower Alginate impression

3. Study model preparation

4. Model Analysis
   a. Pont's Analysis
   b. Ashley Howe's Analysis
   c. Carey's Analysis
   d. Bolton's Analysis
   e. Moyer's Mixed Dentition analysis
   f. Hakhoba's Analysis

III BDS
PEDIATRIC AND PREVENTIVE DENTISTRY

Teaching hours: Theory: 65 Hours,
Pedodontics and Preventive Dentistry Lectures
Practicals/Clinics: 170 Hours
III Year: 70 Hours
IV Year: 100 Hours
Theory
III Year: 20 Hours
IV Year: 45 Hours

III YEAR PEDODONTICS AND PREVENTIVE DENTISTRY: 20 HOURS

1. Introduction to Pediatric and Preventive Dentistry - Definition, Scope, Objectives and Importance	1hours
2. Growth and Development(will be covered by department of orthodontics also) - Importance of study of growth and development in Pedodontics - Prenatal and postnatal factors in growth and development - Theories of growth and development - Methods to measure growth - Development of maxilla and mandible and age related changes	2 hours
3. Development of Occlusion from birth to adolescence - Mouth of neonate, gumpads - Primary dentition period - Mixed dentition period - Establishment of occlusion - Study of variations and abnormalities	2 hours
4. Dental Anatomy and Histology - Chronology of eruption of teeth - Differences between primary and permanent teeth - Eruption disorders and their management including teething, ectopic eruption, ankylosis - Importance of first permanent molar	2 hours
5. Dental Caries - Diagnostic procedures and caries detection - Caries pattern in primary, young permanent and permanent teeth - Early childhood caries, rampant caries-definition, classification,etiology, pathogenesis, clinical features, complications and management	3 hours

- Role of diet and nutrition in dental caries & sugar substitutes - Diet counselling and dirtart modifications - Caries activity tests, caries prediction, susceptibility and their clinical application	
6. Dental materials used commonly in children and adolescents (outline revision)	1 hour
7. Case history recording - Principles of history taking, examination, investigations, diagnosis and treatment planning	1 hour
8. Pediatric operative dentistry - Principles of operative dentistry - Isolation-importance and techniques - Modifications in cavity preparation and recent cavity designs for primary and young permanent teeth - Atraumatic/ Alternative Restorative Technique (ART) - Other methods of caries removal - Restoration of carious teeth (primary, young permanent and permanent teeth) using various restorative materials like glass ionomers, composites, silver amalgam - Preformed crowns: stainless steel, polycarbonate and strip crowns	5 hours
9. Gingival and periodontal diseases in children - Normal gingival and periodontium in children - Definition. Classification - Aetiology, pathogenesis and management of giggival and periodontal conditions seen in children and adolescents	2 hours
10. Dental radiology as related to Pedodontics	1 hour

III BDS
ORAL AND MAXILLOFACIAL SURGERY

Total Thoery Teaching hours : 70 hours
Total Practicals/ Clinicals: 270 hours

III year : 20 hours Theory , 70 Clinical hours
IV year : 50 hours Theory , 200 Clinical hours

III year BDS Theory: 20 hours

Lesson No	Topic	Details of the Topic	Duration
1.	Introduction	Definition, Aims & objectives of Oral surgery	1 hour
2.	Diagnosis in oral surgery	History Taking	2 hour
		Clinical Examination	
		Investigations	
3.	Infection control	Principles of infection control	1 hour
		Cross infection , HIV/AIDS and hepatitis	
4.	Local Anaesthesia	Neurology of facial pain Historical aspects, definition, types of LA, indications, contraindications, advantage and disadvantage. Local anaesthetic drugs, Classification Ideal requirements of LA solutions, composition and mode of action Choice of particular mode of anaesthesia Complications of LA, prevention and management. Anaesthesia technique- Mandible Anaesthesia technique- Maxilla	5 hours 2 hours 2 hours
5.	Exodontia	Introduction, indications, contra indication	1 hours
		Methods of extraction	1 hours
		Use of instruments and complications – Prevention and management	2 hours
6.	Medical Emergency		3 hour
7.	Medical Compromised Patients		
Total			**20 hours**

Text Books:

Alling John F et al	Impacted teeth
Peterson L J et al	Principles of Oral and Maxillofacial Surgery Vol 1,2 & 3
Srinivasan B	Textbook of Oral and Maxillofacial Surgery
Malamed S F	Handbook of medical emergencies in the dental office
Banks P	Killey's fracture of mandible
Banks P	Killey's fracture of middle third of the facial skeleton
McGovanda	The Maxillary sinus and its dental implication
Seward G R et al	Killey and Kays outline of oral surgery Part I
Mc Carthy F M	Essentials of safe dentistry for the medically compromised patients
Laskin D M	Oral and Maxillofacial Surgery
Howe G L	Extraction of teeth
Howe G L	Minor oral surgery
Peterson I J et al	Contemporary Oral and Maxillofacial Surgery
Topazian R G & Goldberg M H	Oral and Maxillofacial infections

Practical and Clinicals hours

III year BDS : 70 clinical 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

Practical and Clinicals Quota

Year	Clinical exercises	Quota	Category
III year BDS:			
	Various local anaesthetic injection techniques on patients	10 cases	must do
	Wiring techniques on models	1 exercise	must do
	Suturing techniques on models.	1 exercise	must do

III BDS
PROSTHODONTICS, CROWN AND BRIDGE INCLUDING IMPLANTOLOGY

Teaching Hours:
Clinical: III year: 70 hours
IV year: 300 hours

Theory: III year: 30 hours
IV year: 80 hours

III year Prosthodontics Theory: 30 hours

1. Introduction a. Terminology - Definitions - History - Scope in Prosthodontic therapy b. Stomatognathic system, Craniomandibular system (Masticatory apparatus) c. Components of masticatory apparatus - Functions d. Applied Anatomy. Histology & Physiology of the components of mandibular system. e. Applied growth and development including genetics, immunity. f. Reasons for loss of teeth and associated structures. g. Clinic and laboratory - facilities for Prosthodontic therapy (Equipments, instruments, materials). h. Prosthodontic therapy for diseases of craniomandibular system. i. Asepsis and cross infection control in clinic and laboratory. Hospital laboratory waste disposal system and management. Physiology, nutrition, occlusion, occlusal curves, vertical overlap, horizontal overlap, condylar path, saliva, pain and other reflexes. Neuro muscular mechanism and applied psychiatry medicine **COMPLETE DENTURE PROSTHESIS**	1 hour
2. BIOMECHANICS OF THE EDENTULOUS STATE Mechanism of tooth support Mechanism of complete denture support Masticatory load Mucosal support Residual ridge Psychologic effect on retention Functional and Para functional considerations Occlusion Functions: Mastication & swallowing	2 hours

Mandibular movements Para-functions Distribution of stresses to the denture supporting tissues, changes in morphological face height and the temporomandibular joint Face height Centric relation Temporomandibular joint changes Individual behavioral or adaptive response Cosmetic changes Dietary changes Adaptive and psychological changes Adaptive potential of the patient	
3. Tissue response to complete denture prosthesis in the aging edentulous patient Soft tissue changes. Soft tissue hyperplasia Denture stomatitis Treatment of denture stomatitis Denture sore mouth	1 hour
4. Effects of aging Oral changes Mucosa and skin Residual bone and the Maxillo-mandibular Relation Disuse atrophy Changes in the size of the basal seat Maxillo-mandibular relations· Tongue and taste Salivary flow and nutritional impairment· Degenerative changes. Dietary problems Psychologic changes	1 hour
5. Preparing the patient for complete denture prosthesis	1 hour
6. Diagnosis and treatment planning for patient with some teeth remaining Diagnostic procedures History and records Immediate complaints Systemic evaluation - CVS, respiratory, Renal, Endocrines, CNS and other systemic conditions Temporomandibular joint disorders Intra Oral examination Diagnostic cast Interarch space problems Radiographs & other investigations	3 hours

Treatment plan Deciding whether to extract the remaining teeth Pre extraction record The patient recently made edentulous New Problems of the recently edentulous patient The patient's concept of the permanence of dentures The patient edentulous for a long time Mental attitudes & classification The House classification: Philosophic Indifferent Critical Skeptical Application of the house classifications Desires and expectations	
7. Diagnosis of patient with no teeth remaining Examination charts and records General observations affecting diagnosis - age, sex, occupation, ethnic - general health & nutrition - social training - patient complaints - gait - lip support - lip thickness - lip length - lip fullness - profile and contour of features - tone of the facial tissues - vertical face length Radiographic and intraoral examination - advantages of a radiographic examination - intra oral examination - color, resiliency and attachments of the mucosa - abrasions & ulcers - pathoses - the maxillary basal seat - torus palatinus - adhesions - The mandibular basal seat - Arch size Disharmony in jaw sizes Ridge form Ridge relations Arch shape Sagittal profile of the residual ridge Shape of the palatal vault Relation of the hard and soft palate	2 hours

Muscular development Saliva Checks and lips Muscle tonus Muscular control Jaw movements Temporomandibular joint problems Tongue size and position Throat form Gagging	
8. Development of treatment plan **Communicating with the patient** - Nutrition care of the denture patient - Nutritional needs and status of the elderly - Impact of wearing dentures on dietary intake - calcium and bone health - vitamin supplementation - Nutrition counseling	1 hour
9. Identification and management of the patient with problems **Basic rules to follow to avoid problems** - Conduction of the comprehensive examination - Correctional procedures prior to making prosthesis - Patient behavior characteristics observed during the exam nation appointment that may indicate future management problems - Disrupting regular office routine - Overreacting to normal examination procedures - Downgrading or criticizing treatment provided by a previous dentist Refusing to divulge the name of a previous dentist or dentists Not having paid for previous dental care Dissatisfaction with existing prosthesis that does not coincide with you evaluation of the prosthesis Numerous sets of prostheses made in a short time(for example, / three in two years) Unrealistic desires to change facial appearance Recent major catastrophe in the immediate family(such as a death, divorce, or severe illness) Legal action pending with the former dentist History of severe gagging and inability to wear prosthesis Crying during discussion of previous dental experience Evidence of excessive smoking Evidence of severe bruxing and/or clenching Restlessness in the dental chair When and how to refer the patient to a specialist for treatment Background information Procedures	1 hour

10. Use of Consultation Report Contents of the Report **Economics of prosthodontic service** Improving the patient's denture foundation and ridge relations **Nonsurgical Methods** Rest for the prosthesis supporting tissues Occlusal and vertical dimension correcting of old prostheses Good nutrition and Conditioning of the patient's musculature **Surgical Methods** correcting conditions that preclude optimal prosthetic function Hyperplastic ridge, epulis fissuratum, and papillomatosis Frenular attachments and pendulous maxillary tuberosities Bony prominences, undercuts, spiny ridges, and nonparallel bony ridges Discrepancies in jaw size Pressure on the mental foramen Enlargement of denture-bearing areas Vestibuloplasty Ridge augmentation Replacing tooth roots by Osseo integrated dental implants Management of remaining teeth and pulp for over dentures	3 hours
11. Rehabilitation of the Edentulous Patient **Biologic considerations for Maxillary Impressions** Macroscopic Anatomy of Supporting Structures - support for the maxillary denture - Residual ridge - Stress-bearing areas - incisive papilla - posterior palatal area - bone of the basal seat Macroscopic Anatomy of Limiting Structures - Resistant and non resistant areas (Peripheral valvular sealing area of a prosthesis) - Labial frenum - Orbicularis oris - Buccal frenum - Buccal vestibule - Pterygomaxillary notch - Palatine fovea region - Vibrating line of the palate **Microscopic anatomy** - Histologic nature of soft tissue and bone - Microscopic anatomy of supporting tissues - Microscopic anatomy of limiting structures	2 hours
12. Clinical considerations of microscopic anatomy **Maxillary Impression Procedures** Principles and objectives of Impression making	2 hours

Factors of retention of Dentures Physical factors - Adhesion - Cohesion - Interfacial surface tension - Capillary attraction - Atmospheric pressure Anatomic factor Mechanical factors Acquired muscular control Oral and facial musculature Balanced occlusion **Health of the basal seat tissues** - Inflammation of the mucosa - Distortion of the denture-foundation tissues - Excessive amounts of hyper plastic tissue - Degeneration of mucous membrane - Insufficient space between the upper and lower ridges **Impressions for the edentulous patient** Primary impression-Patients position, operators position, stock trays, materials· & step by step procedure for making primary impression - Impression trays-special trays and design for final impression - Final impression materials **Impression techniques** - First technique-border molded special tray - Second technique-one step border molded tray - Third technique-custom tray design based on the previously worn prosthesis	
13. Biologic considerations for mandibular impressions Sequelae of tooth loss Macroscopic Anatomy of the supporting structures - Crest of the residual ridge - Buccal flange area and the buccal shelf - flat mandibular ridges - bone of the basal seat - stages of change in the mandible - mylohyoid ridge - throat form and tongue positions - mental foramen area resorption - insufficient space between the mandible and the tuberosity - low mandibular ridges - direction of ridge resorption - torus mandibularis **Macroscopic Anatomy of Limiting Structures** Buccal and labial borders Buccal vestibule External oblique ridge and the buccal flange	2 hours

Masseter muscle region Distal extension of the mandibular impression Retromolar region and pad Lingual borders Influence and action of the floor of the mouth Mylohyoid muscle and mylohyoid ridge Sublingual gland region Direction of the lingual flange Alveololingual sulcus Lingual frenum and lingual notch Lingual flange **Microscopic Anatomy** Supporting tissues - crest of the residual ridge - buccal shelf	
14. Mandibular Impression procedures Classification of Mandibular Impressions Aims and objectives, and theories of impression making - selective pressure impressions - pressure less impressions Construction Procedures - First technique-selective pressure mandibular impression border-molded special tray - Second technique-selective pressure mandibular impression-one step border- molded tray - Third technique-selective pressure Mandibular impression custom design based on the previously worn prosthesis	1 hours
15. Biologic considerations in jaw relations and jaw movements Anatomic factors Temporomandibular Articulation Classification of Jaw relations - orientation relations Face bow - Vertical relations - Horizontal relations	2 hours
16. Movements of mandible practical significance of understanding mandibular movements methods of studying mandibular movements factors that regulate jaw motion influence of opposing tooth contacts influence of tempormandibular joints axes of mandibular rotation muscular involvement in jaw motion clinical understanding of mandibular movement	1 hours

17. Biological considerations in vertical jaw relations Anatomy and Physiology of Vertical jaw Relations Establishment of the vertical maxillomandibular relations for complete denture prosthesis Methods of determining the vertical dimension - Mechanical methods - Physiologic methods - Tests of vertical jaw relations with the occlusion rims	1 hour
18. Biological considerations in horizontal jaw relations Muscle involvement in centric relations Harmony between centric relation and centric occlusion Orienting centric relation to hinge axis Orienting centric relation and vertical relations Significance of centric relation Recording centric relation - Methods of recording centric relation Graphic, static, functional & cephalometric - Extraoral tracing and devices - Intraoral tracing devices - Interocclusal centric relation records	1 hour
19. Recording and transferring bases and occlusion rims Trial denture base, or recording base Occlusion rims Guide for esthetics - Central line, lip line, canine line, smile line level of the occlusal plane preliminary centric relations records	2 hours

III BDS
PERIODONTOLOGY

Knowledge:

- To have adequate knowledge and understanding of the etiology, pathophysiology, diagnosis & treatment planning of various periodontal problems.

- To have understood the periodontal surgical principles like pre and post surgical management of periodontal diseases.

- Essential knowledge of personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste keeping in view the high prevalence of infectious disease

Skills

- To obtain proper clinical history, examination of the patient, perform diagnostic procedures and order essential laboratory tests and interpret them and to arrive at a provisional diagnosis about the periodontal condition.

- To perform with competence various periodontal nonsurgical procedures. To treat non- surgically the various periodontal diseases.

Attitude:

- Periodontal surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient.

- Willing to share the knowledge and clinical experience with professional colleagues.

- Respect patient right and privileges, including patients right to information and right to seek a second opinion.

- Develop attitude to seek opinion from an allied medical and dental specialists as and when required.

Communicative Skills and Ability:

- Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular periodontal problem and obtain a true informed consent from them for the most appropriate treatment available at that point of time.

- Develop the ability to communicate with professional colleagues.

- Develop ability to teach undergraduates, present seminars and develop leadership skills

Teaching Hours: Theory: 80 Hours (III BDS-30 Hours, IVBDS- 50 Hours)

Sl. No.	Topic	Expected to know	Hours
1.	Introduction	Definition of Periodontology, Periodontics Periodontia. Brief historical background Scope of Periodontics	1
2.	Gingiva	Development , Structure , morpholog y histopathology of gingival tissues, functions.	2
3.	Tooth supporting structures	Periodontal ligament, cementum and alveolar bone: functions, histology, development	2
4.	Periodontal instrumentation	Sonic, Ultra sonic instrumentation gingival irrigation manual instrumentation	1
5.	Defense mechanism in the oral cavity	Role of Epithelium; Gingival crevicular fluid ; Saliva and other defensive mechanisms in the Oral environment	2
6.	Age changes in periodontal structures & their significance in. geriatric dentistry	Age changes in teeth and Periodontal Structures, their association	1
7.	Plaque control	a. Mechanical- tooth brushes, interdental cleansing aids, dentifrices. b. Chemical – Classification and mechanism of action of each, pocket irrigation.	2
8.	Gingivitis	Plaque associated, ANUG ,steroid, hormone influenced, Medication influenced, desquamative gingivitis, gingivitis, other forms of gingivitis as in nutritional deficiency, bacterial and viral infections etc.	2

9.	Chemotherapeutic agents	Various chemotherapeutic agents used in periodontal therapy	1
10.	Gingival Diseases	Localised & generalize diseases gingivitis. Papillary, marginal and diffused gingivitis. Etiology, pathogenesis clinical signs, symptoms and management of-Plaque-associated gingivitis Systemically aggravated gingivitis (Sex hormones,Drugs and systemic diseases) Necrotizing ulcerative gingivitis Desquamative gingivitis associated with Lichen planus, Pemphigoid pemphigus and other Vesic ulob ullous lesions.Allergic gingivitis Infective gingivitis - Herpetic, bacterial and candidial, pericoronitis. Gingival diseases in childhood	2
11.	Gingival enlargement	Types of Gingival enlargement (Classification and differential diagnosis)	2
12.	Epidemiology of Periodontal disease	Definition of index, Incidence, Prevalence. Classification of indices.(Irreversible & reversible) Deficiencies of earlier indices used in Periodontics Detailed understanding of Sillness & Loe Plaque index, Loe and Sillness gingival index, CPITN & CPI.Prevalence of periodontal diseases in India and ther countries. Public Health significance (All these topics are covered at under community dentistry. Hence the topics may be discussed briefly however; questions may be asked from the topics for examination).	2
13.	Extension of inflammation from gingiva	Mechanism of spread of Inflammation from Gingival to deeper periodontal structures. Factors that modify the spread	1
14.	AIDS and periodontium	AIDS and periodontium	1

15.	Etiology of Periodontal diseases	Dental Plaque (Biofilm)Definition, Types, composition ; Formation: Bacterial colonisation, Growth& maturation, Disclosing agents. Role Of dental plaque in Periodontal disease Plaque microorganisms in detail Bacteria associated with periodontal diseases. Plaque retentive factors,Materia alba, Food debris, Food impaction: Definition, Types, Etiology Hirschfelds classification, Signs, symptoms & sequelae. Treatment.	2
16.	Calculus	Role of Dental calculus in disease. Definition, Types, composition, attachment, theories of formation	1
17.	Dentinal hypersensitivity	Causes, theories and management.	1
18.	Habits	- Their Periodontal significance. Bruxism & parafunctional habits, Tongue thrusting, mouth breathing, lip biting, occupational habits.	1
19.	Iatrogenic factors.	Conservative Dentistry- Restorations. Contact point, marginal ridge, surface roughness, overhanging restorations, interface between restoration and teeth . Prosthodontic Interrelationship-Bridges and other prosthesis, Pontics (types),surface contour, relationship of margins to the Periodontium . Orthodontics - Interrelation- Retention of plaque, bacterial changes.	1
20.	Systemic diseases	Diabetes, Sex hormones, Nutrition (Vitamins & Proteins)Hemorrhagic disease, Leukemia, Clotting factor disorder. Platelet disorders. PMN disorders	2

Tutorial (During Clinical Posting)

1. Infection control
2. Periodontal instruments
3. Chair position and principles of instrumentation , Maintenance of instruments
4. Basic tissues: Gingiva, periodontal ligament, cementum, alveolar bone.
5. Plaque control: mechanical amd chemical
6. Motivation of patient - oral hygiene instructions

Desirable to Know

1. Histochemistry of periodontal tissues
2. Masticatory apparatus and functions
3. Immunology- current concepts of host response
4. Applied periodontal microbiology
5. Advanced diagnostic techniques
6. Regeneration

Teaching Hours: Theory - 80 Hours III BDS - 30 Hours; IV BDS - 50 Hours

Clinical work and case discussion (III BDS & IV BDS)

25 Detailed Case History And Discussion	75 Hours
50 Oral Prophylaxis	150 Hours
Demonstration of all Surgical Procedures	30 Hours
Maintenance Therapy	30 Hours
Total	285 Hours

Recommended Books

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication
Standard Book Carranza and Newman	Clinical Periodontology	10th	2007	SB saunders Company
Recommended Books Robert Genco. Henry. M.Goldman D.Walter Cohen	Contemporary Periodontics	6th	--	C.V.Mosby Company St. Louis
Jan Lindhe, T.Karring, N. P Lang.	Clinical Periodontology & Implant Dentistry	5th	1997	Munksgaurd Copenhagen
Grant Strem. Listgarten	Periodontics	6th	1998	Mosby CBSn Publishers Indian Edition
S. P Ramfjord M. M. Ash.	Periodontology and Periodontics Modern Theory and Practice	--	1996	AITBS Publishers, India
T. ITO J. D. johnson	Colour Atlas of Periodontal Surgery	--		Mosby & Wolfe. U.S.A
Cohen	Atlas of Periodontal Surgery	--		C. V. Mosby Company U.S.A
Glickman	Manual of periodontal instruments		1990	W.B. Saunders and co
Wilson and Kornman	Fundamentals of periodontics	2cnd	2003	Quintessence publishing

III BDS
CONSERVATIVE DENTISTRY AND ENDODONTICS

Minimum Working hours for each subject of study
(BDS course)

Year	Lecturer Hours	Clinical Hours	Total Hours
III year BDS:	30	70	100
IV year BDS:	80	300	380

III year

Sl.No	Subjects	Hours
1	**Nomenclature Of Dentition:** Tooth numbering systems A D A,Zsigmondy Palmer-and FDIsystems	1 hour
2	**Gnathological Concepts Of Restoration:** Physiology Of occlsion, normal occlusion,Ideal occlusion, Mandibular movements and occlusal analysis. Contours and contacts	2 hours
3	**Dental Cariers:** Aetiology,Classification.Clinical features,morphological features, Microscopic features,clinical diagnosis and sequel of dental caries	3 hours
4	**Preventive measures in restorative practice:** Plaque Control Pit and fissure sealants, dietary measure restorative Procedure and periodontal health	2 hours
5	**Armamentarium for cavity preparation-** Hand cutting instruments Terminology and classification Applications Designs, formula and sharpening of instruments. Rotary cutting instruments Dental bur Mechanism of cutting, Common design characteristics Diamond abrasive and other abrasive instruments Cutting mechanism Hazards and precautions	2 hours

6	**Isolation of operating field** Purpose and methods of isolation	2 hours
7	**Infection control** Routes of transmission of dental infection Personal barrier protection Control of onfection from aerosol and spatter sterilization procedure for Operatory Dental water line contamination and biofilm Disposal of wastes	3 hours
8	**Patient assessment, examination, diagnosis, and treatment planning** **Patients and operator position**	3 hours 1 hour
9	**Principles of Cavity dentistry-** Steps and nomenclature of Cavity preparation classification of cavities	1 hour
10	**Pain control in operative dentistry**	1 hour
11	**Matricing and tooth separation**	2 hours
12	**Amalgam Resolution-** Indication, contraindication Advantages, disadvantages Cavity preparation for class I,II..V Step wise procedure for cavity Preparation and restoration including modifies designs Bonded amalgams, failure and repair of amalgam restorations	5 hours
13	**Hypersensitivity of dentin** Theories of hypersensitivity management	1 hour

III BDS
PUBLIC HEALTH DENTISTRY

Theory:15 Hours Clinical/Practical:50

MUST KNOW
Syllabus:

Sl No.	Topic	No.of hours	Year of study
1.	Introduction to Dentistry: Definition of Dentistry, History of Dentistry, Scope, aims and objectives of Dentistry.	4	III BDS
2.	**Public Health:**		
	i. Health & Disease: - Concepts, Philosophy, Definition & Characteristics	5	
public	ii. Public Health: - Definition & Concepts,History of health	4	
	iii. Dentist Act 1948 with amendment. Dentist Council of India and state Dental Councils Composition and responsibilities.	1	
	iv. Indian Dental association Head Office,State and local branches	1	

PRACTICALS/CLINICALS/FIELD PROGRAMMES IN PUBLIC HEALTH DENTISTRY

These exercises designed to help the student in III year:

1. To Understand the community aspects of dentistry
2. To take up leadership role in solving community oral health programme
3. To gain hands on experience on research methodology.

Exercises: III BDS

Sl. No.	Topic	Year of study
	1. Short term research project: Epidemiology & Advocacy Purpose: Apply the theory and practice of epidemiology, planning and evaluation, statistics to dental public health. Most of the students are unfamiliar with research and hence this short term project which will be divided across 2 years [IV & V BDS] would address this issue. Depending on the topic chosen student can incorporate • Collection of statistical data (demographic) on population in India, birth rates, morbidity and mortality, literacy, per capita income • Incidence and prevalence of common oral diseases like dental caries, periodontal disease, oral cancer, fluorosis at national and international levels. • Oral health status assessment of the community using indices and WHO basic oral health survey methods collection.	15 hrs
	2. Field visits: • Visit to primary health centre-to acquaint with activities and primary health care delivery • Visit to water purification plant/public health laboratory/ centre for treatment of western and sewage water • Visit to institution for the care of handicapped, physically, mentally, or medically compromised patients	20 hrs
	3 Preventive Dentistry: • Including case history, recording of indices, application of pit and fissure sealants, fluoride gel application procedure, A. R. T. Health talk : Minimum of 12 per year	15 hrs

Note: Recording of oral health assessment using indices and WHO basic oral health survey methods should be in context of how information collected will be used or utilised. Therefore it is desirable for this exercise to be part of short term research project and not merely for recording.

IV BDS
PERIODONTOLOGY

Teaching Hours: Theory: 50 Hours

Sl. No.	Topic	Expected to know	Hours
1.	Classification of periodontal diseases	Need and scientific basis, classification of gingival and periodontal diseases- world workshop 1999.	1
2.	Risk Factors	Definition, Risk factors for periodontal diseases. Smoking and periodontal diseases, Role of Stress factors	1
3.	Genetic factors	Genetic factors associated with periodontal disease	1
4.	Host Response	Mechanism of initiation & progression of Periodontal disease, Basic concepts , cells, Mast cells, Neutrophils, macrophages, Lymphocytes, Immunoglobulins, complement, Immune Mechanisms and Cytokines in brief. Stages in gingivitis - Initial, early established, advanced Periodontal disease activity continuous paradigm, random burst and asynchronous multiple burst hypothesis	2
5.	Furcation involvement	Furcation involvement Various Classifications, prognosis and management.	1
6.	Bone loss patterns	Bone loss and patterns of bone destruction in periodontal disease	1
7.	Diagnosis	Routine procedures, methods of probing types of probes. -case history Halitosis, Etiology and treatment.	2 1
8.	Radiographic aids	Radiographs aids in the diagnosis of periodontal diseases	1
9.	Advanced diagnostic aids	Advanced diagnostic aids - Their role in brief	1
10.	Prognosis	Definition, types, purpose and factors	1
11.	Treatment plan	Factors to be considered	1
12.	Rationale for periodontal therapy	Regeneration, Repair, Re-attachment, New attachment	1

13.	Periodontitis	Etiology, histopathology, clinical signs& symptoms diagnosis and treatment of chronic periodontitis, aggressive periodontitis, refractory periodontitis, Necrotising ulcerative periodontitis Periodontal abscess- definition, classification, pathogenesis, differential diagnosis & treatment	3
14.	Periodontal pocket	Definition, signs and symptoms, classification, pathogenesis histopathology, root surface changes & contents of pocket.	1
15.	Periodontal treatment of medically compromised Patients	Different systemic conditions and their effects on the periodontium. Management of patients with the various systemic complications	2
16.	Periodontal therapy in the female patient	PDL changesassociated with Puberty, Menopause, pregnancy, Oral contraceptives	1
17.	Periodontal therapy	General principles of periodontal therapy. Preparation of the patient for surgical therapy	1
18.	Pocket eradication	Scaling and root planing procedures Indications, Aims and Objectives. Armamentarium - and procedure Healing following root planing. Curettage and present concepts- Definition, Indication ; Aims and Objectives Procedures and healing Gingivectomy / Gingivoplasty including crown lengtheningprocedure-Definition Indication and contra indication Armamentarium, Procedure and healing.	3
19.	Flap Surgery	Definition of flap; Types of flap (Design of flap-papilla preservation) Pocket eradication, Indications, armamentarium, surgical procedure and healing	2
20.	Osseous surgery	Definition; Resective and additive osseous surgery (Osseous grafts, classification of grafts)-healing; other regenerative procedures root conditioning. Guided tissue regeneration.	2
21.	Mucogingival surgery	Definition; Mucogingival problems,,Etiology & Classification of gingival recession (P.D.Miller Jr. and Sullivan and Atkins) Indications, various mucogingival surgical procedures	2
22.	Occlusion	Occlusal evaluation and therapy	1

23.	Microsurgery	Periodontal Microsurgery in brief, Electrosurgery, cryosurgery	1
24.	Splints	Periodontal splints - purpose, classification- principles of splinting	1
25.	Trauma from Occlusion (TFO)	definition, types, histopathological changes, role in periodontal disease, measures of management	1
26.	Implants	Definition, Types, Scope, biomaterials used. Periodontal considerations such as implant-gingiva and implant-bone interface. Implant failure, Peri-implantitis and management. Advanced surgical techniques	3
27.	Periodontal medicine	PDL infection associated with various systemic Diseases.	1
28.	Host modulation therapy	Principles, Agents used	1
29.	Lasers	Lasers in periodontal therapy	1
30.	Supportive periodontal therapy	Definition, Rationale. Patient Classification Factors affecting S P T; Implant maintenance	1
31.	Pharmacotherapy	Periodontal dressings ; antibiotics and antiinflammatory drugs - local drug delivery	1
32.	Pulpo-periodontal Lesions	Pulpo-periodontal involvement - Routes of Spread of infection management	1
33.	Evidence based decision making	Assessing evidence, implementing evidence based decisions in clinical practice	1
34.	Patient management	Ethical, legal and practical issues in the management of periodontal patients	1

Tutorial (During Clinical Posting)

1. Third year tutorial topics
2. Diagnosis of periodontal disease
3. Determination of prognosis and treatment plan
4. Radiographic interpretation and lab investigation
5. Ultrasonic instrumentation
6. Principles of periodontal surgery
7. Periodontal surgical procedures and suturing techniques
8. Concepts of subgingival irrigation and LDD
9. Occlusion, correction & management
10. Splinting techniques in Periodontics

Desirable to Know

1. Immunology- current concepts of host response
2. Applied periodontal microbiology
3. Advanced diagnostic techniques
4. Regeneration
5. Application of microsurgery and LASERS in periodontics
6. Implants

Teaching Hours: Theory - 80 Hours III BDS - 30 Hours; IV BDS - 50 Hours
Clinical work and case discussion (III BDS & IV BDS)

25 Detailed Case History And Discussion	75 Hours
50 Oral Prophylaxis- 40 handscaling, 10 ultrasonic	150 Hours
Demonstration of all Surgical Procedures	30 Hours
Maintenance Therapy	30 Hours
Total	285 Hours

Recommended Books

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication
Standard Book Carranza and Newman	Clinical Periodontology	10th	2007	SB saunders Company
Recommended Books Robert Genco. Henry. M. Goldman D.Walter Cohen	Contemporary Periodontics	6th	--	C. V. Mosby Company St. Louis
Jan Lindhe, T. Karring, N.P Lang.	Clinical Periodontology & Implant Dentistry	5th	1997	Munksgaurd Copenhagen
Grant Strern. Listgarten	Periodontics	6th	1998	Mosby CBSn Publishers Indian Edition
S. P Ramfjord M. M. Ash.	Periodontology and Periodontics Modern Theory and Practice	--	1996	AITBS Publishers, India
T. ITO J. D. johnson	Colour Atlas of Periodontal Surgery	--		Mosby & Wolfe. U.S.A
Cohen	Atlas of Periodontal Surgery	--		C. V. Mosby Company U.S.A
Glickman	Manual of periodontal instruments		1990	W.B. Saunders and co
Wilson and Kornman	Fundamentals of periodontics	2cnd	2003	Quintessence publishing

IV BDS
ORAL MEDICINE AND RADIOLOGY

Theory: 45 Hours Practicals : 100 Hours

MUST KNOW
IV YEAR ORAL MEDICINE THEORY: 31 HOURS

1. Acute infections of oral and para oral structures - bacterial, viral, fungal, parasitic including cervico facial lymphadenopathy. **Bacterial**: Streptococcal, tuberculosis, syphilis, vincent's, leprosy, actinomycosis, diphtheria and tetanus. Fungal: Candida albicans, deep seated fungal infections **Virus**: Herpes simplex, Herpes zoster, Ramsy Hunt Syndrome, measles, herpangina, mumps, infectious mononucleosis, HIV, hepatitis -B, hepatitis-C Granulomatous diseases: tuberculosis, sarcoidosis, midline lethal granuloma, Crohn's disease and histiocytosis X	2 hour
2. White and red lesions of oral mucosa. White lesions: chemical burns, leukoedema, leukoplakia, fordyce's spots, stomatitis nicotina palatinus, white spongy nevus, candidiasis, lichen planus, discoid lupus erythematosis, oral submucous fibrosis Red lesions: Erythroplakia, stomatitis venenata and medicamentosa, erosive lesions and denture sore mouth.	2 hour
3. Ulceerative lesions : Acute and chronic ulcers. Vesiculobullous lesions of oral mucosa: herpes simplex, herpes zoster, herpangina, bullous lichen planus, pemphigus, cicatricial pemphigoid, erythema multiforme.	2 hours
4. Diagnostic protocol for differential diagnosis of cysts, odontogenic, non-odontogenic and developmental cysts. Cysts of soft tissues : Mucocele and Ranula Cysts of bone : odontogenic and non-odontogenic. Tumors: Soft tissue: Epithelial: Papilloma, Carcinoma, Melanoma. Connective tissue: Fiborma, lipoma,fibrosarcoma. Vascular: Haemangioma, Lymphangioma. Nerve tissue: Neurofibroma, traumatic neuroma, Neurofibromatosis. Salivary Glands: Pleomorphic adenoma, Adenocarcinoma, Warthin's tumor, Adenodid cystic carcinoma. **Hard tissue:** Non-odontogenic tumors: Odontogenic tumors: Fibro osseous lesions of oral paraoral structures.	2 hours

5. Oral manifestations of Metabolic disorders: i. Porphyria ii. Haemochromotosis iii. histiocytosis, Oral manifestations of endrocrinal disorders: i. Pituitary: - Acromegaly, Gigantism, hypopituitarism. ii. Adrenal cortex: Addison's disease (hypofunction) Cushing's syndrome (hyper function) iii. Parathyroid glands: Hyperparathyroidism, hypoparathyroidism iv. Thyroid glands:Cretinism(hypothyroidism),myxoedema, hyperthyroidism v. Pancreas: Diabetes. Nutritional difficiency affecting oral cavity: Vitamins: Riboflavin, nicotinic acid, folic acid, vitamin B12, vitamin C (scurvy) Blood disorders: i. Red blood cell diseases: iron deficiency anemia, plummer Vinson syndrome, pernicious anemia, thalassemia, sickle cell anemia, erythroblastosis foetalis, aplastic anemia, polycytemia. ii. WBC disorders: Neutopenia, cyclic neutropenia, agrnaulocytosis, infectious mononucleosis and leukemias iii. Bleeding & clotting disorders: thrombocytopenia, purpura, haemophilia, Christmas disease and Von Willebrant's disease.	2 hours
6. Dermatological diseases importance to dentistry: i. Ectodermal dysplasia ii. Hyperkeratosis palmoplantaris with periodontopathy iii. Scleroderma iv. Lichen planus including grinspan syndrome v. lupus erythematoses vi. Pemphigus vii. Erythema multifore viii. Psoriasis.	2 hours
7. Disease of tongue and tongue in systemic diseases: Aglossia, ankyloglossia, bifid tongue, fissured tonge, scrotal tongue, macroglossia, microglossia, geographic tongue, median rhomboid glossitis, depapillation of tonge, hairy tongue, atrophic tongue, reactive lymphoid hyperplasia, glossodynia, glossopyrosis, ulcers, white and red lesions.	1 hour
8. Concept of pre malignancy, Premalignant lesions and conditions	1 hour
9. Oral Cancer, Etiology and Classification Epidemiology. - Screening. - Clinical Features and Clinical staging - Diagnosis. - Laboratory Investigations and Diagnosis. - Immune concepts in Oral Malignancies. - Management Chemotherapy / Radiotherapy.	2 hour

10. Diseases of salivary glands: i. Developmental disturbances: Aplasia, atresia and aberration. ii. Functional disturbances : Xerostomia, ptyalism. iii. Inflammatory conditions: Non-specific sialadenitis, mumps, sarcodiosis, heerdfort's syndrome (uveoparotid fever), necrotizing sialometaplasia. iv. Cysts and tumors: Mucocele, ranula, ;pleomorphic adenoma, mucoepidermoid carcinoma. v. Miscellaneous : sialolithiais, Sjogren's syndrome, mikuliez's disease and sialosis.	1 hour
11. Autoimmune diseases affecting oral cavity	2 hour
12. Allergic: Local allergic reactions, anaphylaxis, serum sickness (local and systemic allergic manifestations to drugs and chemicals) Iimmunological lesions of oral cavity: i. Multiple myeloma ii. HIV clinical manifestations, oppourtunistic infections, neoplasms iii. Thrombocytopenia iv. Lupus erythematosus v. Scleroderma vi. Dermatomyositis vii. Rheumatoid arthritis viii. Recurrent oral ulcerations including behcet's syndrome and reiter's syndfrome.	1 hour
13. Diseases of TMJ : Developmental abnormalities of condyle, rheumatoid arthritis, osteoarthritis, subluxation and luxation, internal derangement of TMJ, myofacial pain dysfunction sydrome. Diseases of Bone: Development disorders, anomalies, exostosis and tori, infantile cortical hyperostosis, osteogenesis imperfecta, marfans syndrome, osteoporosis. Miscellaneous- Paget's disease, mono and polyostotic fibrous dysplasia, cherubism,	3 hour
14. Diseases of maxillary sinus	1 hour
15. Oral manifestations of systemic diseases and medical emergency management, cardiac patient,cardias arrest, specific infections, syncope, anaphylaxis. Phsiologic changes: Puberty, pregnancy and menopause.	1 hour
16. Maxillofacial trauma clinical diagnostic protocol	1 hour
17. Psychosomatic diseases, burning mouth syndrome, glossopyrosis glossodynia, orofacial dysaesthesia, cancerophobia., MPDS, taste abnormalities	1 hour
18. Forensic Odontology including radiography in forensic odontology: i. Medicolegal aspects of orofacial injuries ii. Identification of bite marks	1 hour

iii. Determination of age and sex iv. Identification of cadavers by dental appliances, restorations and tissue remnants.	1 hour

IV BDS
ORAL MEDICINE AND RADIOLOGY

MUST KNOW
IV YEAR RADIOLOGY THEORY: 14 HOURS

1. Radiographic interpretation II - Radiographic artifacts.	1 hour
- Radiographic features of common pathologies of jaw bones (cysts , tumors, fibro-osseous diseases, metabolic, endocrine, nutritional blood disorders)	2 hour
- TMJ radiography -	1 hour
2. Biologic effects of radiation and radiation protection	2 hours
3. Principles of radiotherapy- preparation of patient for oral radiotherapy, management of post radiation oral complications	1 hour
4. Principles of extra oral radiography- techniques and indications of maxillary sinus, trauma radiography, cephalometry, various skull projections.	2 hour
5. Contrast radiography- technique and interpretation of Sialography, cystography, arthrography, angiography- lecture.	1 hour
6. Panoramic Radiography	1 hour
7. Advance radiographic techniques- CT scans, PET scans, radionucleide diagnosis, digital radiography, sialography, digital imaging, xeroradiography	1 hour

Clinicals
III & IV year BDS (inclusive)
ORAL MEDICINE
1. Detailed presentation of case histories of (minimum) tem special cases.

RADIOLOGY
1. Taking IOPA for at least 25 cases and processing them.
2. Taking at least 2 Bite wing radiographs and processing them.
3. Interpretation of at least 25 IOPA Radiographs.

CLINICAL DEMONSTRATIONS

1. Demonstrations of the following radiographic techniques:
   a. Maxillary and mandibular occlusal view
   b. Orthopanthamograph
   c. Lateral cephalogram
   d. Postero anterior view of mandible
   e. Paranasal sinus view
   f. Reverse towne's view
   g. Submentovertex view
   h. Lateral oblique view for ramus and body of mandible

2. Identification Of The Above Mentioned Radiographs And Their Interpretation

Scheme of Examination

A. Theory (university written examination) 70 Marks

Distribution of Topics and Types of Questions

Contents	Type of Questions and Marks	Marks
a. 1 Question from Oral Medicine b. 1 Question from Radiology	Long Essays 2 x 10 marks	20
a. 4 Questions from Oral Medicine b. 4 Questions from Radiology	Short Essays 8 x 5 marks	40
a. 3 Questions from Oral Medicine b. 2 Questions from Radiology	Short Answers 2x5	10
	Total	70

B. Internal Assessment Theory: 10 marks, Practicals:10 marks
C. Clinicals: 90 Marks

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.a-Oral Periapical Radiograph to be taken)
   a. Technique10 Marks
   b. Processing10 Marks
   c. Interpretation10 Marks

D. Viva Voce	20 Marks
Theory	: 100
University written exam	: 70

Viva Voce	:	20
Internal assessment (written)	:	10
Total	:	100

Clinical:100		
University exam	:	90
Internal assessment (written)	:	10
Total	:	100

BOOKS RECOMMENDED:

a. Oral Diagnosis, Oral Medicine, Oral Pathology

1. Burkit - Oral medicine - J.B. Lippincott Company
2. Coleman - Principles of Oral Diagnosis - Mosby Year Book
3. Jones - Oral Manifestations of Systemic Diseases - W. B. Saunders company
4. Mitchell - Oral Diagnosis & Oral Medicine
5. Kerr - Oral Diagnosis
6. Miller - Oral Diagnosis & Treatment
7. Hutchinson - Clinical Methods
8. Shafers - Oral Pathology
9. Sonis. S.T., Fazio.R.C. and Fang. L - Principles and Practice of Oral Medicine
10. Differential diagnosis of oral lesions - Norman wood KW and Paul W. HGoaz 4th edition, 1997, Mosby Philadelphia.
11. Hand book of medical emergencies in dental office by Malamed Stanley 3rd edition 1989, - AITBS, Mosby.
12. Orofacial pains, classification, diagnosis and management by Bell Welden, 4th edition 1989, year book Medical publishers, Chicago.
13. Oral & Marillofacial Injections - Topazian Richard
14. Oral & Marillofacial Pathology - Neville
15. Oral Pathology - Clinical Pathology Carrelation Reglzi

b. Oral Radiology

1. White & Goaz - Oral Radiology - Mosby Year Book
2. Weaheman - Dental radiology - C. V. Mosby Company
3. Stafine - Oral Roentgenographic Diagnosis - W.B. Saunders company
4. Fundamentals of oral medicine and radiology by Bailoor DN and Nagesh KS 1st and 2nd edition 1994, 2001. Contemporary dental publishers
5. Dental Radiography - Principles & Technique - Haring, Howerlow
6. Essentials of Dental Radiography & Radiology - Eevie Whailes

c. Forensic Odontology

1. Derek H. Clark - Practical Forensic Odontology - Butterworth - Heinmann (1992)
2. C. Michel Bowers, Gary Bell - Manual of Forensic Odontology - Forensic Pr.(1995)

IV BDS

PUBLIC HEALTH DENTISTRY

Theory: 45 hours Clinical/Practical:150 hour

Sl.No.	Topic	No. of hours	Year of study
1.	**PUBLIC HEALTH** i. General Epidemiology:-definition,objectives,methods	2	IV BDS
	ii.Environment Health: -Concepts,principles,protection, sources,purification environmental sanitation of water disposal of waste sanitation,then role in mass disorders	2	
	iii. Health Education: -Definition,concepts,principles,methods, and health education aids	2	
	iv.Public Health Administration: -Priority,establishment, manpower,private practice management, hospital management.	2	
	v.Ethics and Jurisprudence: Professional liabilities,negligence, malpractice, consents, evidence, contrasts, and methods of identification in forensic dentistry.	2	
	vi.Behavior sciences:Definition of sociology,anthropology and psychology and their in dental practice and community.	2	
	vii. Health care delivery system: Center and state, oral health policy,primary health care, national programmes, health organizations.	2	
2.	**Dental Public Health**		
	i. Definition and difference between community and clinical health.	2	
	ii. Nutrition in oral diseases	2	
	iii. Delivery of dental care: Dental auxiliaries, operational and non-operational, incremental and comprehensive health care, school dental health Planning & Evaluation	4 1	
	iv. Payments of dental care: Methods of payments and dental insurance, government plans	2	
3.	**Preventive Dentistry** i. Definition, Levels, role of individual community and profession, fluorides in dentistry, plaque control programmes. ii. Prevention of dental caries Prevention of periodontal disease Prevention of oral cancer Prevention of malocclusion Atraumatic Restorative Treatment(ART) Occupational Hazards Evidence Based Dentistry(EBD)	5 6	

Research Methodology and Dental Statistics	
4. Health Information: - Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes	1
5. Research Methodology: -Definition, types of research, designing a written protocol	1
6. 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 trail and calibration.	5
Practice Management	
1. Place and locality 2. Premises & layout 3. Selection of equipments 4. Maintenance of records/accounts/audit.	2

PRACTICALS/CLINICALS/FIELD PROGRAMMES IN PUBLIC HEALTH DENTISTRY

These exercises designed to help the student in V year:

1. To Understand the community aspects of dentistry
2. To take up leadership role in solving community oral health programme
3. To gain hands on experience on research methodology.

Exercises: IV BDS

Sl. No	Topic	Hours of study
1.	**Oral health education material preparation** • Preparation of health education materials posters,models,slides Lectures,play acting skits etc.	10 hours
2.	**Visit to school** • To asses 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.)	20 hours
3.	**Preventive dentistry and health talk:** • Including case history, recording of indices,application of pit and fissure Sealants,fluoride gel application procedure,A.R.T. Health talk:Minimum of 12 per year	30 hours
4.	**Exploring the setting of dental practice** • Exploring and planning setting of private dental clinics in rural,semi-Urban and urban locations,availment of finances for dental practices, Preparing project report.	10 hours
5.	**Rural postings** • Comprehensive care including oral health education in rural areas for Disadvantaged population.	80 hours

Note: Recording of oral health assessment using indices and WHO basic oral health survey methods should be in context of how information collected will be used or utilised. Therefore it is desirable for this exercise to be part of short term research project and not merely for recording.

The colleges are encouraged to involve in the N.S.S.programme for college students for carrying out Social work in rural areas.

Type of questions and distribution of marks:

Each question paper shall be of 3 hours duration, carrying maximum marks of 70. There shall be three types of questions with distribution of marks as shown in Table:

Table

Type of Questions	No. of Questions	Marks per question	Total marks
Long Essay Type	2	10	20
Short Essay Type	8	5	40
Short Answer Type	5	2	10
		Grand Total	**70**

Scheme of Examination
Theory Examination

Sl. No	Type of Question	No.	Marks	Total (Maximum Marks- 100)
I	Long Essays	2	10	20
ii	Short Essays	8	5	40
iii	Short Answers	5	2	10

Clinical Examination

Sl.No.	Exercise	Marks allotted (Maximum Marks- 100)
1.	Case History Taking	15
2	. Assessment of Oral Health Status using any two relevant Indices	35
3.	Preventive Clinical procedures(Any one) (Topical fluoride application, Pit and fissure sealants and ART)	25
4	Oral Health Education Talk / Presentation of Oral Health Education Material / short term student research project presentation	15

	Theory	Clinicals
Internal Assessment	10	10
University Examination	70	90
Viva voce	20	-
Total	**100**	**100**

BOOKS RECOMMENED & REFERENCE:

1. Dentistry Dental Practice and Community by David F.Striffler and Brain A.Burt, Edn. -1983,W,B,Saunders Company.
2. Principles of Dental Public Health by James Morse Dunning,4th Edition, 1986, Harwarduniversity Press.
3. Jong,s Community Dental Health ,5th Edition, by George Gluck and warren Morganstein.
4. Community Oral Health- A system approach by Patricia P.Cormier and Joyee I.Levy Published by Application-Century-Crofts/New York,1881.
5. Community Dentistry- A problem oriented approach by P.C.Dental Hand book series Vol.8 by Stephen I.Silverman and Ames F.Tryon,series editor-Alvin F.Gardner, PSG Publishing company inc.littleton Massachuseltts,1980.
6. Clinical Use of Fluorides- Stephen H. Wei
7. Oral healthsurveys- Basic methods,4th edition,1997,published by W.H.O.Geneva Available at the regional office New Delhi.
8. Preventive Dentistry-by J.O.Forrest published by John Wright and sons Bristoli, 1980.
9. Preventive Dentistry by Murray, 1997.
10. Textbook of Preventive and Social Medicine by park, 20th edition..
11. Textbook of Preventive and Community dentistry by Dr S S Hiremath.
12. Introduction to Bio-statistics by B.K.Mahajan.
13. Research methodology- Methods and techniques by C.R.Kothari, 2nd edition.
14. Introduction to statistics methods by grewal.
15. Dentistry,Dental Practice and the community, 6th Edition, by Brain A Burt and Stephen a eklund.

IV BDS
ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

Course Details -IV Year B.D.S

TEACHING HOURS:

Mode of Teaching	IV Year B.D.S
Theory	30 Hours
Clinical	100 Hours
Total	130 Hours

MUST KNOW

IV YEAR - COURSE SYLLABUS:

Sl. No. Subjects	Hours
1. General Principles in Orthodontic Treatment Planning of Dental and Skeletal Malocclusions	1 Hour
2. Anchorage in Orthodontics - Definition, Classification, Types and Stability of Anchorage	2 Hours
3. Biomechanical Principles in Orthodontic Tooth movement a. Different types of tooth movements b. Tissue response to orthodontic force application c. Age factor in orthodontic tooth movement	2 Hours
4. Preventive Orthodontics a. Definition b. Different procedures undertaken in preventive orthodontics and their limitations Interceptive Orthodontics a. Definition b. Different procedures undertaken in interceptive procedure c. Serial Extraction: Definition, indications, contra-indication, technique, advantages and disadvantages d. Role of muscle exercise as an interceptive orthodontics	Will Be Covered by Departme nt of Pedodont ia
5. Corrective orthodontics a. Definition, factors to be considered during treatment planning b. Model analysis: Pont's, Ashley Howe's, Bolton, Careys, Moyer's Mixed Dentition Analysis	2 Hours

c. Methods of gaining space in the arch: - Indications, relative merits and demerits of proximal stripping, arch expansion and extractions d. Extractions in Orthodontics - indications and selection of teeth for extraction	
6. Orthodontic Appliances: General a. Requisites for orthodontic appliances b. Classification, indications of Removable and Functional Appliances c. Methods of force application d. Materials used in construction of various orthodontic appliances - use of stainless steel, technical considerations in curing of acrylic, Prinicples of welding and soldering, fluxes and antifluxes e. Preliminary knowledge of acid etching and direct bonding	2 Hours
7. Removable Orthodontic Appliance a. Components of removable appliances b. Different type of clasps and their use c. Different type of labial bows and their use d. Different types of springs and their use e. Expansion appliances in orthodontics i. Principles ii. Indication for arch expansion iii. Description of expansion appliances and different types of expansion devices and their uses iv. Rapid maxillary expansion	2 Hours
8. Fixed Orthodontic Appliances a. Definition, Indication and Contraindications b. Component parts and their uses c. Basic principles of different techniques: Edgewise, Begg straight wire	2 Hours
9. Extraoral Appliances a. Headgears b. Chincup c. Reverse pull headgears	1 Hour
10. Myofunctional Appliances a. Definition and principles b. Muscle exercises and their uses in orthodontics c. Functional appliances: i. Activator, Oral Screens, Frankels function regulator, bionator twin blocks, lip bumper ii. Inclined planes - upper and lower	3 Hours
11. Orthodontic Management of Cleft Lip and Palate	2 Hours
12. Principles of Surgical Orthodontics a. Maxillary Prognathism and Retrognathism b. Mandibular Prognathism and Retrognathism	2 Hours

c. Anterior open bite and deep bite d. Cross bite	
13. Principle, Differential Diagnosis and Methods of Treatment of: a. Midline diastema b. Cross bite c. Open bite d. Deep bite e. Spacing f. Crowding g. Class II - Division 1, Division 2 h. Class III - Malocclusion - True and Pseudo Class III	3 Hours
14. Retention and Relapse Definition, Need for retention, Causes of relapse, Methods of retention, Different types of retention devices, Duration of retention, Theories of retention	2 Hours
15. Ethics	1 Hour
16. Genetic in Orthodontics	1 Hour
17. Computers in Orthodontics	1 Hour
18. Adult Orthodontics in brief	1 Hour

CLINICALS AND PRATICALS IN ORTHODONTICS DURING IV B.D.S - 130 Hours

CLINICAL TRAINING DURING IV B.D.S

1. Case History Training
2. Case Discussion
3. Discussion on the given topic
4. Cephalometric tracings
   a. Down's Analysis
   b. Steiner's Analysis
   c. Tweed's Analysis

PRATICAL TRAINING DURING IV YEAR B.D.S

1. Adam's Clasp on Anterior teeth Gauge 0.7mm
2. Modified Adam's Clasp on upper arch Gauge 0.7mm
3. High Labial bow with Apron spring on upper arch
   (Gauge of Labial bow - 0.9mm, Apron Spring - 0.3mm)
4. Coffin spring on upper arch Gauge 1mm
5. Appliance Construction in Acrylic
   a. Upper and lower Hawley's Appliance
   b. Upper Hawley's with Anterior bite plane
   c. Upper Habit breaking Appliance

d. Upper Hawley's with Posterior bite plane with 'Z' spring
e. Lower inclined plane / Catalan's Appliance
f. Upper Expansion plate with Expansion Screw
g. Construction of Activator

RECOMMENDED AND REFERENCE BOOKS

1. Contemporary Orthodontics - William R Proffit
2. Orthodontics for Dental Students - White and Gradiner
3. Handbook for Dental Students - Movers
4. Orthodontics - Principles and Practice - Graber
5. Design, Construction and Use of Removable Orthodontic Appliances - C. Philip
6. Adams
7. Clinical Orthodontics: Vol 1 & 2 - Salzmann
   Orthodontics - Graber and Swine
8. Textbook of Orthodontics-III Edition, M S Rani, All India
   Publishers & Distributors, New Delhi
   Dr G V N

SCHEME OF EXAMINATION OF B.D.S (ORTHODONTICS)
Total Theory Marks - 100 Marks

Theory Written Examination -	70 Marks
Vivavoce -	20 Marks
Internal Assessment -	10 Marks
Total	100 Marks

Theory Written Examination- 70 Marks

Type of Questions	Marks	Total
Long Essays - 2	2 x 10	20
Short Essays - 8	8x5	40
Short Answers - 5	5x2	10
Total		70

Clinical Examination - 100 Marks

University Clinical Examination	90 Marks
Internal Assessment -	10 Marks
Total	100 Marks

University Clinical Examination - 90 Marks

Clinical Work	Marks	Total
Spotters - 10 Nos	10 x 3	30
Wire Bending - 3 Exercises a. Labial Bow - b. Adams Clasp c. Fingers Spring / Z Spring	15 Marks 15 Marks 10 Marks	40
Clinical Case Discussion		20
	Total	**90**

IV BDS
PEDIATRIC AND PREVENTIVE DENTISTRY

Lectures
Theory
IV Year: 45 Hours

Practicals/Clinics:
IV Year: 100 Hours

IV YEAR PEDODONTICS AND PREVENTIVE DENTISTRY: 45 HOURS

Sl. No.	Subjects	Hours
1.	Child Psychology Definition Importance of understanding child psychology in pedodontics Theories Psychological development from birth through adolescence Dental fear, anxiety and their management, types of cry Application of psychology principles in dental management Psychological disorders including anorexia, bulimia Child Abuse and Neglect	4 hours
2.	Behaviour Management Definition Classification and types of behaviour Factors influencing child behaviour Non-pharmacological management of behaviour Pharmacological management of behaviour: Pharmacological principles in pediatric dentistry-drug dosage formulae Analgesics, anti inflammatory and antibiotics commonly prescribed for children Conscious sedation including nitrous oxide-oxygen inhalation anaesthesia	5 hours
3.	Fluorides Historical background Systemic fluorides-availability, agents, concentrations, advantages and disadvantages Topical fluorides-agents, composition, methods of application both for professional and home use, advantages and disadvantages Mechanism of action and its anti cariogenic effect Fluoride toxicity and its management De fluoridation techniques	4 hours

4. Pediatric Endodontics Principles and diagnosis Classification of pulp pathology Management of pulpally involved primary, young permanent and permanent teeth including materials used and techniques followed Pulp capping Pulpotomy Pulpectomy Apexogenesis Apexification	4 hours
5. Traumatic injuries to teeth Definition Classification Etiology and incidence Management of trauma to primary teeth Sequelae and reaction following trauma to primary teeth Management of trauma to young permanent teeth Prevention of trauma: mouth protectors	5 hours
6. Preventive and Interceptive Orthodontics Definitions Problems seen during primary and mixed dentition periods and their management Mixed dentition analysis Serial extraction Space management	4 hours
7. Oral Habits in children Definition, classification and aetiology of all habits Clinical features of deleterious oral habits including non-nutritive sucking, mouth breathing, non functional grinding, masochistic and occupational habits Management of oral habits in children	4 hours
8. Dental management of children with special needs Definition, classification, aetiology, clinical features, special considerations in the dental management of: Physically handicapping conditions Mentally handicapping conditions Medically compromising conditions Genetic disorders and importance of genetic counselling	5 hours
9. Oral surgical procedures in children Indications and contra indications for extraction Minor surgical procedures in children Knowledge of local and general anaesthesia	2 hours
10. Preventive dentistry Definition, principles and scope	3 hours

Levels and types of prevention Preventive measures: Minimal Intervention Pit and fissure sealants Preventive resin restorations (PRR, CARR) Newer agents available for caries prevention and re mineralization Caries vaccine	
11. Nanodentistry- introduction, principles and technique -an outline	1 hour
12. Dental health education and school dental health programmes	1 hour
13. Importance of Dental Home	1 hour
14. Dental emergencies in children and their management	1 hour
15. Setting up of Paediatric dental practice including ethics	1 hour

PRACTICALS / CLINICS

1. Student is trained to arrive at proper diagnosis by following a scientific and systematic procedure of history taking and examination of orofacial region. Training is also imparted in management whenever possible.

2. In view of the above each student shall maintain a record of work done, which shall be evaluated for marks at the time of university examination.

3. The following is the minimum prescribed work:

Pre-clinical (III Year)

Drawing of individual primary teeth morphology
Preparation of various cavity designs on typhodont teeth and extracted primary and permanent teeth
Fabrication of habit breaking appliances
Clinical exercises (IV Year)
Case History Recording and Treatment Planning
Communication and Management of child patient
Preventive measures - oral prophylaxis, topical fluoride application
Restoration of carious teeth using different materials
Extraction of primary teeth

SCHEME OF EXAMINATION

A. Theory (University written examination) 70 Marks
Distribution of Types of Questions

Type of Questions and Marks	Marks
Long Essay - 2 x 10 Marks	20
Short Essays - 8 x 5 Marks	40
Short Answers - 2 x 5 Marks	10
Total	70

B. Internal Assessment Theory: 10 Marks, Practicals: 10 Marks

C. Clinical: 90 Marks
1. Clinical in Pedodontics and Preventive Dentistry: 60 Marks

a. Case History, Clinical Examination, Diagnosis and Treatment Planning: 30 Marks

b. Clinicalprocedure: 40 Marks
i. Oral prophylaxis and topical fluoride application
ii. Restoration of decayed tooth
iii. Extraction of primary tooth

c. Overall management of child patient and post-operative instructions: 20 Marks

D. Viva Voce: 20 Marks

Theory - 100

University written exam:	70
Viva Voce:	20
Internal assessment (written):	10
Total	100

Clinical - 100

University exam:	90
Internal assessment (written):	10
Total:	100

BOOKS RECOMMENED

1. Dentistry for the Child and Adolescent- Mc Donald

2. Pediatric Dentistry (Infancy Through Adolescence)- Pinkham

3. Clinical Pedodontics- Sidney B.Finn

4. Paediatric Operative Dentistry-Kennedy

5. Behaviour Management- Wright

6. Clinical Use of Fluorides- Stephen H. Wei

7. Textbook of Pediatric Dentistry-Braham Morris

8. Primary Preventive Dentistry-Norman O Harris, Franklin Garcia-Godoy

9. Understanding of Dental Caries-Nikiforuk

10. Textbook and Color Atlas of Traumatic Injuries to the Teeth - J.O Andreason, C.M Andreason

11. Textbook of Pedodontics- Shobha Tandon

12. Handbook of Clinical Pedodontics- Kenneth D

IV BDS
PROSTHODONTICS, CROWN AND BRIDGE INCLUDING IMPLANTOLOGY

Teaching Hours:
Clinical:
III year :70 hours
IV year 300 hours

Theory:
III year :30 hours
IV year :80 hours

IV PROSTHODONTICS THEORY: 30 HOURS

Sl. No.	Subjects	Hours
1.	Relating the patient to the articulator Articulators - articulators based on theories of occlusion - articulators based on the type of record used for their adjustment Selection of Articulator for complete dentures - Hanau articulator - Whip mix articulator - Dentatus articulator	1 hour
2.	Selecting artificial teeth for edentulous patient Anterior tooth selection Pre extraction guides size of the anterior teeth form of the anterior teeth The dentogenic concept in selecting artificial teeth Posterior tooth selection Bucco lingual width of posterior teeth mesiodistal length of posterior teeth cervico Occlusal Length of Posterior Teeth types of posterior teeth according to materials types of posterior teeth according to cusp inclines	1 hour
3.	Preliminary Arrangement Of Artificial Teeth Guides for preliminarily arranging anterior teeth Relationship to incisive papilla factors governing the anteroposterior position of the dental arch	1 hour

Setting Maxillary anterior teeth in wax for try in Importance of proper Anteroposterior positioning of the anterior teeth Setting mandibular anterior teeth in the wax for try in Horizontal overlap Preliminary arrangement of Posterior teeth Orientation of occlusal plane tentative buccolingual position of the posterior teeth tentative arch form of the posterior teeth Setting posterior teeth for try in guidelines for centric occlusion esthetics and leverage	
4. Perfection and verification of jaw relation records Verifying Vertical Dimension Verifying the centric relation Intraoral observation of intercuspation . Intraoral interocclusal records Extra oral articulator method Creating Facial And Functional Harmony With Anterior Teeth Anatomy of natural appearance and facial expression normal facial landmarks maintaining facial support and neuromuscular balance Basic guides to developing facial and functional harmony preliminary selection of the artificial teeth horizontal orientation of the anterior teeth vertical orientation of the anterior teeth phonetics in the orientation of the anterior teeth inclination of the anterior teeth harmony in the general composition of anterior teeth refinement of individual tooth positions concept of harmony with sex personality and age of the patient correlating esthetics and incisal guidance Patient acceptance of arrangement of anterior teeth	1 hour
5. Completion of the try in : Eccentric Jaw relation adjustment, establishing the posterior palatal seal Protrusive and lateral relations Controlling factors of movement Eccentric relation records Establishing the posterior palatal seal Arranging posterior teeth for functional harmony Importance of occlusion Maintenance of the arches Maintenance of occlusal harmony differences in artificial occlusion and natural occlusion rational for arranging posterior teeth in Temporomandibular joint disturbances Factors of Centric occlusion Critical components in arranging posterior teeth Laws protrusive occlusion	2 hours

Laws of lateral occlusion Occlusal schemes used in complete dentures for the edentulous patients - Anatomic teeth - Non anatomic teeth - Other tooth forms Techniques for arranging cusped teeth in Balanced occlusion techniques for arranging cuspless teeth in occlusion. **Appearance and Functional Harmony of Denture Bases** materials used for denture bases - Acrylic Resin - Metal formation and preparation of the mold packing the mold preserving the orientation relations construction of remounting casts completing the rehabilitation of the patient dentists evaluations patients evaluations friends evaluations elimination of basal surface errors errors in occlusion interocclusal records for remounting dentures interocclusal record of centric relation remounting the mandibular denture verifying centric relation Phonetics - Production of voice and Articulation of sounds Position of teeth and phonetics Neutral, Zone, Relief Processing errors - Reasons and care Selective grinding Remount and correction of occlusal discrepancies Prosthesis - Insertion	
6. Patient instructions , after care and recall and management of patient complaints protrusive inter occlusal record alternative use of plaster inter occlusal records advantages of balanced occlusion in complete dentures special instructions to the patient - individuality of patients - appearance with new dentures - mastication with new dentures - speaking with new dentures - oral hygiene with dentures Maintaining the comfort and health of the oral cavity in a rehabilitated edentulous patient Post Insertion Adjustments - adjustments relaxed to the occlusion - adjustments relaxed to the Denture bases - subsequent oral examinations and treatments	1 hour

7. Rehabilitation of the partially edentulous patients (overdentures) tooth-supported complete dentures - indications and contraindications for over dentures - selection of abutment teeth - clinical procedures	1 hour
8. Immediate Denture Treatment - indication for immediate dentures - contraindications to immediate denture service - delayed and transitional dentures - treatment planning - clinical procedures - waxing and flasking - preparation of the surgical template - processing occlusal correcting, and final preparation of the immediate dentures - surgery and the insertion of the dentures - postoperative patient instructions - perfecting the occlusion - subsequent service for immediate dentures **Single complete dentures opposing natural teeth** - maxillary single dentures - clinical and laboratory procedures - subsequent problems with single dentures against natural teeth - mandibular single dentures - supplemental prosthodontic procedures for the edentulous patient	2 hours
9. Relining or Rebasing of Complete Dentures - treatment rationale - diagnosis - clinical procedures Static impression technique closed and open mouth relines/rebases - functional impression technique - chair side technique **Repair of Complete Dentures And Duplication Of Casts** - Maxillary and mandibular fracture repair - repairs using cold-curing resin - duplication of casts - reversible hydrocolloid technique - irreversible hydrocolloid technique	2 hours
10. Osteo Integrated Supported Prosthesis (Dental Implants) For The Edentulous Patient - maladaptive denture behavior - use of dental implants - patient considerations - tissue integration in the edentulous patient Management of japer-plastic ridges - Atrophied flat mandibular ridges in complete denture prosthesis therapy	1 hour

Geriatric Dentistry: Management of aged, senior citizens, physically, mentally handicapped patients	
REMOVABLE PARTIAL DENTURE PROSTHESIS	
11. 1. Introduction and scope 2. Terminology 3. Classifications 4. Examination. diagnosis and treatment planning 5. Components of removable partial dentures and their functions	3 hours
12. Major connectors Mandibular Major connectors Maxillary Major connectors	2 hours
13. Minor connectors Functions Form and location Tissue stops Finishing lines. reaction of tissues to metallic coverage form of occlusal rests and rest seats	1 hour
14. Rests and rest seats Interproximal occlusal rest seats Internal occlusal rests Incisal rests and rest seats Lingual rests on canines and incisor teeth Possible movements of partial denture Support for rests	1 hour
15. Direct retainers Internal attachments Extra coronal direct retainers Relative uniformity of retention Criteria for selecting a given clasp design Basic principles of clasp design Designs of clasps	3 hours
16. Indirect retainers Denture rotation about an axis Factors influencing effectiveness of indirect retainers Auxiliary functions of indirect retainers Forms of indirect retainers Auxiliary occlusal rests Canine extensions from occlusal rests Canine rests Continuous bar retainers and lingual plates	2 hours

Modification areas Rugae support Direct indirect retention Denture base considerations Tooth supported partial denture base	
17. Distal extension partial denture base: Functions of denture bases Methods of attaching denture bases Ideal denture base material Advantages of metal bases Methods of attaching artificial teeth Need for relining	1 hour
18. Impression materials and procedures for removable partial dentures Rigid materials thermoplastic materials elastic materials impressions of the partially edentulous arch individual impression trays support for distal extension removable partial dentures - factors influencing the support of distal extension bases method for obtaining functional support for distal extension base	3 hours
19. Surveying Description of a dental surveyor Purposes of a surveyor Factors that determine path of placement and removal Step by step procedures in surveying a diagnostic cast Final path of placement Recording relation of cast to surveyor Surveying the master cast Measuring retention and balancing of retention Influence of survey line in designing of clasps Blocking out the master cast Relieving the master cast Paralleled block out. shaped block out, arbitrary block out and relief Preparation of the mouth for removable partial denture Oral surgical preparation Conditioning of abused and irritated tissues Periodontal preparation Periodontal diagnosis and treatment planning Initial disease control therapy Definitive periodontal therapy	3 hours

Recall and maintenance Advantages of periodontal therapy Preparation of abutment teeth Classification of abutment teeth Sequence of abutment preparation on sound enamel Abutment preparation using conservative restorations Abutment preparation using crowns Splinting of abutment teeth Use of isolated teeth as abutment Missing anterior teeth Temporary crowns when a partial denture is being worn Fabricating restorations to fit existing denture retainers	
20 Occlusal relationship for removable partial denture difference in natural and artificial occlusion desirable occlusal contact relationship for removable partial denture method for establishing occlusal relationship materials for artificial posterior teeth establishing jaw relation for mandibular removable partial denture opposing a maxillary complete denture labatory procedures duplicating a stone cast waxing the partial denture framework anatomic replica pattern spruing, investing. burnout, casting and finishing of the partial denture framework making record base occlusal rims making a stone occlusal template from a functional occlusal record arranging posterior teeth to an opposing cast types of anterior teeth waxing & investing the partial denture before processing the acrylic resin base processing the denture remounting and occlusal corrections to an occlusal template polishing the denture **work authorization for removable partial denture** work authorization definitive instructions by work authorization Legal aspects of work authorization Relining and rebasing the removable partial denture Relining tooth support - supported denture base Relining distal extension denture base Method of reestablishing occlusion of a relined partial denture	3 hours
21. Stress breakers Types of stress breakers Advantages of stress breakers Disadvantages of stress breakers Advantages of a rigid design Disadvantages of a rigid design Stress breaking principles Principles of removable partial denture design Biomechanical considerations Other factors influencing Differentiation between two main types of removable partial dentures Essentials of partial denture design Components of partial denture design Additional considerations influencing design	1 hour

22. Repair and additions to removable partial denture Broken clasp arms Fractured occlusal rests Distortion or breakage of other components Loss of teeth not involved in the support or retention of the restoration Loss of an abutment tooth necessitating its replacement and making a new direct retainer Other types of repair Repair by soldering	2 hours
23. Temporary removable partial denture Appearance Space maintenance Reestablishing occlusal relationships Conditioning teeth and residual ridge Conditioning the patient for wearing a prosthesis	2 hours
24. Removable partial denture considerations in maxillofacial prosthodontics - 1 Maxillofacial Prosthodontics Intraoral prosthesis design considerations Maxillary prosthesis Mandibular prosthesis Treatment planning Framework design Class I resections Class II resections Mandibular flange prosthesis	1 hour
ELEMENTS OF FIXED PROSTHODONTICS (CROWN AND BRIDGE PROSTHESIS)	
25. Introduction and definitions. Terminologies Indication and contraindications	2 hours

26. Examination, diagnosis and treatment planning and radiological interpretations.	1 hour
27. Selection and choice of abutment teeth	1 hour
28. Biomechanical principles of tooth preparation Preservation of tooth structure Retention and resistance form Structural durability of the restoration Marginal integrity Preservation of the periodontium Finish lines and the periodontium Occlusal bevels Flares Gingival finish lines Preservation of the periodontium **Instrumentation** Water air cooling Armamentarium	3 hours
29. Full veneer crowns Maxillary and mandibular posterior three quarter crowns Anterior three quarter crown Pin modified three quarter crowns Seven eighths crown Proximal half crowns Inlay MOD onlay	3 hours
30. Anterior/ posterior porcelain fused to metal crowns All ceramic crowns Preparation modifications for damaged teeth Modifications for damaged vital teeth Conversion of defects into retentive features Solution to common problems	3 hours
31. Endodontically treated tooth Preparation modifications for special situations Preparation for fixed bridge abutment Preparation for removable partial denture abutments	3 hours
32. Isolation of working field and temporary protections of prepared tooth Gingival retractions and impression procedures. Construction of DIES of working models, direct and indirect technique. Techniques of fabrication of retainers and materials used, its application with reference to esthetics.	3 hours
33. Selection and fabrication of pontics and esthetics. Connectors, stress - breakers and assembly of fixed bridges.	3 hours

Finishing, cementing and maintenance of crowns and bridges Laser and high speed.	
IMPLANTS	
34. Osseo integrated - Supported prosthesis. Introduction and scope advantages and disadvantages. Classification Applied material science, patient Evaluation pre-surgical preparation treatment plan, applied Linical, surgical and Laboratory Procedure . Osseointegrated supporting prosthesis occlusion, esthetics, insertion and maintenance. Examination, diagnosis and treatment planning and other clinical and Laboratory procedures	5 hours
35. Maxillofacial Prosthesis Restoration of congenital and acquired oral and para-oral Defects. (Facial Prostheses, including implant support Maxillo Facial prosthesis). Splints Obturators Carriers Bruxism and management of occlusal attrition	5 hours
36. Miscellaneous Patient and practice management in Prosthodontic clinic Ethics, Law, Jurisprudence an Forensic Odontology - in Prosthodontic practice Assistants - Laboratories and clinic Communication methods - Technician work Authorization, methods and legality	5 hours
37. Emergencies in Prosthodontics During impression recording in Partially, Completely Edentulous Situation and Maxillofacial Defects. Precautions and management of traumatic accidents in tooth preparation use vasoconstrictor in anaesthetic solutions and retraction cords. ill fitting dentures Broken clasps, facings Broken prosthesis Swallowing Prosthesis General Management of elderly and C.V.S. and immuno compromised patients.	2 hours

CLINICAL ASSIGNMENTS

III & IV BDS

1. Treatment for completely edentulous patients- 3 Patients

2. Treatment for Partially Edentulous Patients
   - Provisional R.P - 5.D
     (Minimum one for each Kennedy's classification)

3. F.P - preparation of crown - anterior and posterior, one each.D.

4. Relining & Rebasing, Repair - 1 each.

5. Immediate denture - 1

6. Single denture -1

Demonstrations of Clinical and Laboratory procedures for :

3- Unit Fixed Partial Denture, Maxillofacial prosthesis, Obturators and implant supported prosthesis.

SCHEME OF EXAMINATION

a. **THEORY**(university written examination) 70 marks
   Distribution of topics and types of questions.

Contents	Type of questions & marks	Marks
One long essay from complete denture One long essay from removable partial denture/fixed partial denture	Long essays 2x10 marks	20
3 short essays from complete denture 3 short essays from removable partial denture 2 short essays from fixed partial denture	Short essays 8x5 marks	40
2 short answers from complete denture 1 short answer from removable partial denture 2 short answers from fixed partial denture	Short answer 2x5 marks	10
	Total	**70**

B. Internal assessment theory: 10 marks, practicals:10 marks.

C. CLINICALS:90 marks

i. Case history 10 marks
ii. Complete denture exercise 50 marks
iii. RPD Designing or Tooth Preparation on Typhodont- 20 Marks

D. Viva-voce 20 marks

Theory- 100
University written exam- 70
Viva-voce- 20
Internal assessment (written)-10
Total- 100
Clinical-100
University exam-90
Internal assessment(written) 10
Total- 100

TEXT BOOKS AND REFERENCE BOOKS

	Author	Name of the Book & Title	Edn.	Yr. of Publ	Publisher's name
1.	Boucher	Prosthodontic Treatment of Edentulous Patients	XI	1997-	Mosby St. Louis, Missouri, USA
2.	Heartwell	Syllabus of Complete Denture	IV	1992	Varghese Publishing House Hind Rajasthan Building Bombay, India
3.	Rosenstiel	Contemporary Fixed Prosthodontics	III	2001	Mosby, St. Louis, Missouri, USA
4.	Sharry	Complete Denture Prosthetics	---	---	---
5.	Shillingburg	Fundamentals of Tooth Preparation	I	1987	Quintessence Publications 551 North Kimberly Drive, Carol Stream, IL-60188-1881
6.	Tylman	Theory and practice of Fixed Prosthodontics	VIII	1993	Ishiyaku EuroAmerica, Inc .. 716, Hanley Industrial Court, St. Louis Missouri, USA

7	Jhonston	Modern practice in Fixed Prosthodontics	---	---	---
8.	Mc Giveney Glen P	MC Cracken's removable Partial Prosthodontics	9th	1995	Mosby
9.	Shillingburg	Fundamentals of Fixed Prosthodontics	III	1997	Quintessence Publications 551, North Kimberly Drive, Carol Street, IL
10.	Stewart	Clinical Removable Partial Prosthodontics	II	1997	All India Publishers & Distributors
11.	Skinner	Science of Dental Materials	X	1996	W.B. Saunders Company, Philadelphia, USA
12.	Craig	Dental Materials, Properties & Manipulation	VI	1996	Mosby, St. Louis Missouri, USA
13.	Combe	Notes on Dental Materials	VI	1992	Churchill Living stone, NY, USA
14.	Carl Misch	Contemporary Implant Dentistry	---	---	---
15.	Branemark	Tissue Integrated Prosthesis	---	---	---
16.	Bernard G. N. Smith	Dental Crowns and Bridges: Design and preparation	---	1986	---
17.	A.A. Grant / W Johnson	Removable Denture Prosthodontics	2nd	--	---
18.	Dr. Sybille K. Leehner, Prof. A. Roy, Mc Gregor	Removable Partial Prosthodontics	2nd	--	---
19.	Grant Heath Mc Cord	Complete Denture	---	---	Wolfe Publishing Europe
20.	George F. Kantorowicz	A Clinical Handbook Inlays, Crowns and Bridges	---	---	Indian Edition by Varghese Company
21.	Bengt 'O' wall Arud F. Kayser	Prosthodontics	---	---	Mosby - Wolfe
22.	Gunnar E. Carlsson	Principles and Management Strategies	---	---	Mosby - Wolfe

IV Year - BDS

CONSERVATIVE TOPICS - 80 hours

1. Casts restorations Indications, contraindications, advantages and disadvantages Materials used Class II cavity preparation for inlays Types of bevels in cast restoration Differences in tooth preparation for amalgam and cast restorations Fabrication of wax paterns	3 hours
2. Casting Die materials and preparation of dies Refractory materials Alloys used for casting Casting machines Casting procedure and defects cementation of restoration	2 hours
3. Temporisation or interim restoration Materials and procedure	1 hours
4. Esthetics in dentistry Introduction and scope Anatomy and physiology of smile Role of colour and translucency Esthetic recontouring Alteration of tooth form,shape ,size and colour Management of discoloured teeth	4 hours
5. Composite restorations Recent advances in posterior composite resins. Indications ,contraindications, advantages and disadvantages Clinical technique for posterior direct composite restorations Finishing and polishing of composite restoration Indirect posterior composite restoration	3 hours
6. Non carious destruction of tooth structure - Definition ,etiology ,diagnosis ,clinical features and management	2 hours
7. Ceramic Restorations Recent advances in ceramic materials & techniques including CADCAM (in brief) Ceramic laminates, inlays, onlays and crowns. Indications, contraindications, advantages, disadvantages and techniques (in brief)	3 hours
8. Direct Filling gold Rëstorátions : Introduction Types of direct filling gold, indications contraindications advantages disadvantages tooth preparation and restoration	1 hours

ENDODONTIC TOPICS - 28 hours

1. Emergency endodontic procedures	2 hours
2. Internal anatomy of pulp space Root canal anatomy of maxillary and mandibular teeth. Classification of cana configuration and variations in pulp space	2 hours
3. Access cavity preparation Objectives Principles Instruments used Sequential steps of access cavity preparation for individual tooth	2 hours
4. Preparation of root canal space . a. Determination of working length definition and methods of determining working length b. cleaning and shaping of root canals objectives principles instruments used techniques-hand and rotary	2 hours
5. Disinfection of root canal space a. irrigation Introduction Function of irrigants Methods and techniques of irrigation b. intracanal medicaments functions requirements types method of placement and limitations	2hours
6. Problems during cleaning and shaping of root canal spaces. Perforation and its management. Broken instruments and its management, management of curved root canals.	2 hours
7. Obturation of the root canal system. a. Materials- Ideal root canal filling material, classification of materials b. Obturation techniques Classification and procedure	2 hours
8. Root canal sealers. Ideal properties classification.,functions Manipulation and application of root canal sealers	2 hours

9. Post endodontic restoration Principles of post endodontic Restorations Post and core-materials and procedure (in brief)	2hours
10. Smear layer and its importance in endodontics and conservative treatment	1 hour
11. Traumatised teeth Classification of fractured teeth. Management of fractured tooth.	2 hours
12. Endodontic surgeries indication contraindications, pre operative preparation. surgical instruments and techniques apicectomy, retrograde filling, post operative sequale, trephination, hemisection, radisectomy reimplantation (both intentional and accidental)	3 hours
13. Root resorption Etiology and management	1 hour
14. Use of specialized equipments like Lasers and microscopes in conservative dentistry and endodontics	1hour

CLINICAL EXERCISES

1. Case history recording, diagnosis and treatment planning.
2. Clinical examination and use of various diagnostic aids
3. Pit and fissure sealants -10
4. Pulp Capping-10
5. Glass ionomer restorations-10
6. Composite restorations in anterior teeth-10
7. Composite restorations in posterior teeth-10
8. CLASS I Amalgam restorations-10
9. CLASS II Amalgam restoration-10
10. Rootcanal treatment for Anterior teeth- 2

Demonstration:

1. Cast inlay restoration
2. Post core restoration
3. Molar endodontic treatment
4. Peri apical surgery
5. Esthetic restorative procedures

- Bleaching of teeth
- Veneers
- Diastema closures etc..

6. Tooth coloured inlays,onlays, crowns.

Scheme of Examination

A. Theory : 70 Marks
Distribution of Topic and Type of Questions

Contents	Type of questions and marks	Marks
One long essay from conservative topics One long essay from endodontics topics	Long essay- 10×2=20	20
Five questions from conservative topics including aesthetic dentistry Three questions from endodontics topics	Short essay 08× 5=40	40
Three questions from conservative topics including esthetic dentistry Two questions from endodontics topics	Short answer 5×2=10	10
	Total	70

B. VIVA VOICE= 20 MARKS
C. INTERNAL ASSESMENT -THEORY :10MARKS, PRACTICALS :10 MARKS
D. PRACTICAL EXERCISE:90 MARKS

1. Preparation of class 2 cavity for amalgam and restoration
   Or
2. Anterior composite restoration
   Or
3. Root canal treatment for anterior tooth up to selection of master cone

Details of marks distribution of the practical examinations

1. Class II amalgam restoration
   a. Case history recording, examination, diagnosis and treatment planning - 15marks
   b. Cavity preparation - 30 marks
   c. Lining and matrix - 15 marks
   d. Restoration and finishing - 30 marks
   Total - 90 marks

2. Anterior composite restoration
   a. Case history recording, examination, diagnosis and treatment planning - 15marks
   b. Tooth preparation, shade selection and isolation - 35 marks
   c. Restoration and finishing - 40 marks
   Total - 90 marks

3. Anterior RCT

a. Case history recording, examination, diagnosis and treatment planning	- 20marks
b. Access cavity preparation	- 25marks
c. Working length	- 20 marks
d. Chemomechanical preparation and master cone selection	- 25marks
Total	- 90 marks

IV BDS
ORAL AND MAXILLOFACIAL SURGERY

IV year BDS Theory: 50 hours

1.	Dento-alveolar surgery	Trans alveolar extraction Impacted teeth: General factors, incidence, etiology Classification and indications Assesment: clinical & radiological Anaesthetic considerations Surgical procedure Impacted maxillary third molar & Impacted Canine	1 hour 4 hours
2.	Endodontic surgery	Introduction, classification, apicectomy, replantation	
3.	Infections of the oral cavity	Introduction, microbiology, anatomy of fascial spaces, course of odontogenic infections, Spread of infection, classification, clinical features, management Dentoalveolar abscess, ludwigs angina osteomyelitis and ORN. Hepatitis B and HIV	4 hours
4.	Cystic lesions of jaws	Definition, classification and pathogenesis Diagnosis, clinical features, radiological, aspiration biopsy, use of contrastmedia and histopathology Management-types of surgical procedures, and complications	3 hours
5.	Oral Implantology	Principles of implantology	2 hours
6.	Ethics		1 hour
7.	Preprosthetic surgery	Introduction, aims, classification Corrective procedures - hard & soft tissues Ridge extension and augmentation procedures	2 hours
8.	Diseases of maxillary Sinus	Surgical anatomy, Acute & chronic sinusitis	1 hour
		Oro antral fistula & Surgical approach for sinus	1 hour

9.	TMJ disorders	Surgical anatomy	1 hour
		Subluxation & Dislocation	1 hour
		Ankylosis	1 hour
		Myofunctional pain dysfunction syndrome	1 hour
		Internal derangement & Arthritis and other disorders	1 hour
10.	Tumors of the oral Cavity	General considerations, Carcinoma of oral cavity, TNM classification	1 hour
		Non odontogenic benign tumors - lipoma,fibroma, papilloma,ossifying fibroma, myoma etc	1 hour
		Ameloblastoma	1 hour
		Biopsy - types	1 hour
		Outline of management of squamous cell carcinoma, surgery, radiotherapy,chemotherapy.	1 hour
11.	Fractures of the jaws	General consideration, types of the fractures, etiology, C/F, and general principles. Dento-alveolar #methods of management	1 hour
		Mandibular Fractures – Applied Anatomy, Classification Diagnosis – Clinical and Radiological Features	1 hour
		Management -# of condyle - aetiology, classification, clinical features and general principles of management reduction and fixation	1 hour
		Fractures of middle third of the face, Definition of midface , applied surgical anatomy, classification, clinical features and outline of management	2 hour
		Orbital fractures & # of Zygomatic complex	1 hour
		Classification, C/F, indications for treatment, various methods of reduction and fixation.	2 hour
		Complications - delayed union, non-union and malunion.	1 hour
12.	Developmental deformities	Basic forms, prognathism, retrognathism and open bite. Reasons for correction, Outline of surgical methods carried out on maxilla and mandible	4 hour

13.	Salivary gland diseases	Salivary calculi and Infections of the salivery glands its management	1 hour
		Tumours of the salivary gland and management	1 hour
14.	Neurological disorders	Trigeminal neuralgia - definition, etiology , C/F and methods of management including surgery. Glossopharyngeal and Facial paralysis - etiology , clinical features	1 hour
		Nerve injuries - classification, neurorhaphy etc.	1 hour
15.	Cleft lip and cleft palate	Etiology, of the clefts, incidence, classifications role of dental surgeon in the management of cleft patients. Outline of the closure procedures.	4 hour

PRACTICAL AND CLINICALS: 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 CLINICALS QUOTA

Year	Clinical exercises	Quota	Category
IV year BDS			
	Extraction of mobile and firm teeth	60 cases	must do
	Trans-alveolar method of extraction with suturing	10 cases	must do
	Surgical removal of Simple impactions	5 cases	Desirable to do
	Management of dento-alveolar fractures with arch bar fixation, eyelets and inter-maxillary fixations	5 cases	Desirable to do
	IM & IV Injection techiniques	5 cases	Desirable to do
	Assisting major surgical procedures under general anaesthesia	5 cases	Desirable to do
	Training in Handling medical emergencies, CPR and basic life support		must do

SCHEME OF EXAMINATION

A. THEORY (UNIVERSITY WRITTEN EXAMINATION) 70 MARKS

DISTRIBUTION OF TOPICS AND TYPES OF QUESTIONS

Contents	Type of questions and marks	Marks
a. 1 Question from Local anaesthesia b. 1 Question from Oral surgery	Long Essays 2 x 10 marks	20
a. 5 Questions from Oral surgery b. 1Question from General anesthesia	Short Essays 6 x 5 marks	30
a. 9 Questions from Oral surgery b. 1 Question from Local anaesthesia	Short Answers 2 x 10	20
Local Anaesthesia		
Total		70

B. Internal Assessment- Theory: 10 marks,
Clinicals: 10 marks

C. Clinicals: **90 Marks**

I. Clinicals in Oral Surgery:
90 Marks (Extraction of firm tooth)

A. Case History	30 Marks
B. Local anaesthesia technique	30 Marks
C. Extraction of firm tooth (Maxillary/ Mandibular tooth) and management of the patient	30 Marks

D. Viva Voce **20 Marks**

Theory-100 marks

University written exam :	70
Viva Voce:	20
Internal assessment:	10
Total	100

Clinical:100 marks.

University exam:	90
Internal assessment	10
Total	100

SECTION V

ETHICS IN DENTISTRY

Introduction

There is a definitie shift now from the traditional patient and doctor relationship and delivery of dental care. With the advances in science and technology and the increasing needs of the patient, theirs families and community, there is a concern for the health of the community as a whole . There is a shift to greater accountability to the society. Dental specialists like the other health professionals are confronted with many ethical problems. It is therefore absolutely necessary for each and every one in the health care delivery to prepare themselves to deal with these problems. To accomplish this and develop human values, it is desired that all the trainess undergo ethical sensitization by lectures or discussion on ethical issues, discussion of cases with an important ethical component.

Course content:

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 ethis.

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

Recommended Reading:

Francis C.M., Medical Ethics, I Ed. 1993, Jaypee Brothers, New Delhi p.189.

Dr. Ramakant Nayak
Principal
M/s. N.G. Halgekar Institute of Dental Sciences
& Research Centre, Belagavi-590010.

REVISED RGUHS M.D.S. SYLLABUS

APPLICABLE TO MAY- 2018 ADMITTED MDS STUDENTS AND ONWARDS

SECTION I REGULATIONS

1. **Title of the Course:** It shall be called Master of Dental Surgery (MDS).

2. **Branches of Study:** The following are the subjects of specialty for the MDS degree:

   a. **Prosthodontics and Crown & Bridge**
   b. **Periodontology**
   c. **Oral & Maxillofacial Surgery**
   d. **Conservative Dentistry and Endodontics**
   e. **Orthodontics & Dentofacial Orthopedics**
   f. **Oral & Maxillofacial Pathology & Oral Microbiology:**
   g. **Public Health Dentistry**
   h. **Pediatric Dentistry**
   i. **Oral Medicine & Radiology**

3. **Eligibility**

A candidate for admission to the MDS course (Master of Dental Surgery) must have a. recognized degree of BDS (Bachelor of Dental Surgery) awarded by an Indian University in respect of recognized Dental College under Section 10(2) of the Dentists Act, 1948 or an equivalent qualification recognized by the Dental Council of India and should have obtained permanent registration with any of the State Dental Council.

Candidates who possess PG Diploma recognized by the DCI with the duration of 2 years in particular specialty is eligible for admission in MDS in the same specialty and the duration will be 2 years. The syllabus of the two years programme i.e PG- Diploma will be as per the existing DCI/university guidelines.

Dr. Ramakant Nayak
Principal
M.M's. N.G. Halgekar Institute of Dental Sciences
& Research Centre, Belagavi-590010.

4. Criteria for Selection for Admission

Students for MDS Course shall be admitted based on performance at the competitive examinations held by Central Government and as per the orders issued by the state government from time to time.

There shall be a uniform NEET for admission to the post-graduate dental courses in each academic year conducted in the manner, as prescribed by the Central Government in this behalf.

5. Eligibility Certificate from RGUHS

No candidate shall be admitted to any postgraduate MDS course unless the candidate has obtained and produced eligibility certificate issued by University. The candidate has to make an application to the University with the following documents along with the prescribed fee:

1. BDS Pass / Degree certificate issued by the University.
2. Marks cards of all the university examinations passed (I to IV BDS year course).
3. Attempt Certificate issued by the Principal.
4. Completion of rotatory internship certificate from a recognized college.
5. Registration by any State Dental Council and
6. Proof of SC / ST or Category I, as the case may be. Candidates should obtain the Eligibility Certificate before the last date for admission as notified by the University.

6. Duration of the Course

The Course shall be of three years duration.

All the candidates for the degree of MDS are required to pursue the recommended course for at least three academic years as full time candidates in an institution affiliated to and approved for Postgraduate studies by Rajiv Gandhi University of Health Sciences, Karnataka, and recognized by the Dental Council India.

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

7. Method of training

The training of postgraduate for degree shall be full time with graded responsibilities in the management and treatment of patients entrusted to his/her care. The participation of the students in all facets of educational process is essential. Every candidate should take part in seminars, group discussions, grand rounds, case demonstration, clinics, journal review meetings, CPC and clinical meetings. Every candidate should participate in the teaching and training programme of

undergraduate students. Training should include involvement in laboratory and experimental work, and research studies.

8. Attendance, Progress and Conduct

A candidate pursuing degree/diploma course should work in the concerned department of the institution for the full period as a full time student. No candidate is permitted to own a clinic/work in clinic/laboratory/nursing home while studying postgraduate course, no candidate shall join any other course of study or appear for any other examination conducted by this university or any other university in India or abroad during the period of registration.
Each year shall be taken as a unit for the purpose of calculating attendance from the date of commencement of academic session as per the COE of university or from the date of admission.

Every candidate shall attend symposia, seminars, conferences, journal review meetings, grand rounds, CPC, case presentation, clinics and lectures during each year prescribed by the department and not absent himself / herself from work without reasons.

Every candidate shall have not less than 80 percent of attendance in each year of the course. However, candidates should not be absent continuously as the course is a full time one.

9. Monitoring Progress of Studies

Work diary / Log Book: Every candidate shall maintain a work diary and record of his/ her participation in the training programme conducted by the department such as journal reviews, seminars, etc. Please see Chapter IV for model checklists and logbook.

Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate. The work diary shall be scrutinized and certified by the Head of the Department and Head of the Institution, and presented in the university practical/clinical examination.

Periodic tests:

In case of degree courses of three years duration, the concerned departments may conduct tests, one test three months before the Part I examination, the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practical / clinical and viva voce. Records and marks obtained in such tests will be maintained by the Head of the Department and sent to the University, when called for.

Records:

Records and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University, when called for.

10. Dissertation

Every candidate pursuing MDS degree course is required to carry out work on a selected research project under the guidance of a recognized post graduate teacher. The results of such a work shall be submitted in the form of a dissertation.

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

Every candidate shall submit to the Registrar of the University in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within six months from the date of commencement of the course on or before the dates notified by the University. The synopsis shall be sent through the proper channel.

Such synopsis will be reviewed and the dissertation topic will be registered by the University. No change in the dissertation topic or guide shall be made without prior approval of the University.

The dissertation should be written under the following headings:

i. **Introduction**
ii. **Aims or Objectives of study**
iii. **Review of literature**
iv. **Results**
v. **Discussions**
vi. **Conclusion**
vii. **Summary**
viii. **Reference**
ix. **Tables**
x. **Annexures**

The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexures. It should be typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69"). Spiral binding should be avoided. The dissertation shall be certified by the guide, head of the department and head of the Institution.

Dissertation thus prepared shall be submitted online to the Registrar (Evaluation), six months before final examination on or before the dates notified by the University.

The dissertation shall be valued by two internal and two external examiners appointed by the University. Of the four examiners, accepted by any three shall be considered as approval. Approval of dissertation work is an essential precondition for a candidate to appear in the University examination.

Guide: The academic qualification and teaching experience required for recognition by this University as a guide for dissertation work is as laid down by Dental Council of India / Rajiv Gandhi University of Health Sciences.

Co-guide: A co-guide may be included provided the work requires substantial contribution from a sister department or from another institution. If the co-Guide is from a different institution, then it should be intimated to the RGUHS.

Change of guide: In the event of a registered guide leaving the college for any reason, in the event of death of guide, guide may be changed with prior permission from the university.

11. Scheme of Examination

Eligibility: The following requirements shall be fulfilled by every candidate to be eligible to appear for the final examination.

i) **Attendance:** Every candidate shall have put in minimum of 80% attendance in each academic year in order to be eligible for the university examination.

ii) **Progress and conduct:** Every candidate shall have participated in seminars, review meetings, symposia, conferences, case presentations, clinics and didactic during each year as designed by the concerned department

iii) **Work diary and Logbook:** Every candidate shall maintain a work diary and logbook for recording his/her participation in the training programmes conducted by the department. The work diary and logbook shall be verified and certified by the Head of the Department and Head of the institution. (Please see Section IV for Model Checklist and Logbook)

The certification of satisfactory progress by the head of the department and head of the institution shall be based on (i), (ii) and (iii) mentioned above.

Schedule of Examination:

M.D.S. Degree examinations in any branch of study shall consist of dissertation, written paper (Theory) Part I at the end of 1ST year and Part II at the end of 3 years including Practical/Clinical and Viva voce.

The Part – I examination for M.D.S. courses shall be held at the end of Ist year of the course and

Part – II examination shall be held at the end of Three years. The university shall conduct two examinations in a year at an interval of four to six months between the two examinations. Not more than two examinations shall be conducted in an academic year.

The university examination shall consist of theory, practical and clinical examination and viva-voce and Pedagogy.

(i) Theory:

Part-I: Basic Sciences Paper shall consist of one paper of 100 marks

There shall be a theory examination in the Basic Sciences at the end of 1st year of course. The question papers shall be set and evaluated by the eligible examiners appointed by the university. The candidates shall have to secure a minimum of 50% in the Basic Sciences and shall have to pass the **Part-I** examination at least six months prior to the final (Part-II) examination.

Part-II: Paper-I, Paper-II & Paper III Shall consist of three papers of 300 marks (100 marks for each paper)

In addition

(ii) Practical and Clinical Examination;

(iii) Viva-voce; and

(iv) Pedagogy.

12. UNIVERSITY SCHEME OF EXAMINATION

M.D.S. Degree examinations in any branch of study shall consist of dissertation, written paper (Theory) Part I at the end of 1ST year and Part II at the end of 3 years including Practical/Clinical and Viva voce.

Theory: Part-I: Basic Sciences Paper - **100 Marks**

Part-II: Paper-I, Paper-II & Paper-III - **300 Marks** (100 Marks for each Paper)

Written examination shall consist of Basic Sciences (Part-I) of three hours duration shall be conducted at the end of First year of MDS course. Part-II Examination shall be conducted at the end of Third year of MDS course.

Part-I: Applied Basic Sciences as specified in the syllabus of each course

Part-II Examination shall consist of Paper-I, Paper-II and Paper-III, each of three hours duration.

Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each.

Paper-III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

DISTRIBUTION OF MARKS:

Theory: (Total 400 Marks)

(1) Part I University Examination (100 Marks):-

There shall be 10 questions of 10 marks each (Total of 100 Marks)

(2) Part II (3 papers of 100 Marks):-

(i) Paper-I: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(ii) Paper-II: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(iii) Paper III: 2 out of 3 essay questions (50 x 2 = 100 Marks)

Practical and Clinical Examination : 200 Marks

Viva-voce and Pedagogy : 100 Marks

EXAMINERS:

Part I: There shall be one internal and one external examiner for evaluating the answer scripts of the same specialty.

Part II: There shall be four examiners in each subject. Out of them, two (50%) shall be external examiners and two (50%) shall be internal examiners. Both external examiners shall be from a university other than the affiliating university and one examiner shall be from a university of different State.

CRITERIA FOR PASS.

To pass the university examination, a candidate shall secure in both theory examination and in practical/clinical including viva voce independently with an aggregate of 50% of total marks allotted (50 out of 100 marks in Part I examination and 150 marks out of 300 in Part II examination in theory and 150 out of 300, clinical plus viva voce together). A candidate securing marks below 50% as mentioned above shall be declared to have failed in the examination.

Sl no	Year /part	Theory		Practical including viva		
1.	Part – 1	Maximum marks 100	Passing criteria 50	Not applicable		
				Maximum marks	Passing criteria	-
2.	Part-II	300	150	300	150	

A candidate who is declared successful in the examination shall be granted a Degree of Master of Dental Surgery in the respective specialty.

Dissertation: Acceptance of dissertation shall be a precondition for the candidate to appear for the final examination.

13. Distribution of Topics in theory papers in various branches of study specialties:

SYLLABUS DISTRIBUTION AMONG 4 PAPERS IN VARIOUS SPECIALITIES:

(i) PROSTHODONTICS AND CROWN & BRIDGE

Part-I

Paper-I: **Applied Basic Sciences:** Applied anatomy, embryology, growth and development Genetics, Immunology, anthropology, Physiology, nutrition and Biochemistry, Pathology and Microbiology, virology, applied pharmacology, Research Methodology and bio statistics, Applied Dental anatomy and histology, Oral pathology & oral Microbiology, Adult and geriatric psychology. Applied dental materials.

Part-II

Paper-I: Removable Prosthodontics and Implant supported prosthosis(Implantology), Geriatric dentistry and Crania Facial Prosthodontics

Paper-II: Fixed Prosthodontics, occlusion, TMJ and esthetics.

Paper-III: Descriptive and analyzing type question

(ii) PERIODONTOLOGY

Part- I

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

Part-II

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

Paper II: Periodontal diagnosis, therapy and Oral implantology

Paper III: Descriptive and analysing type question

(iii) ORAL & MAXILLOFACIAL SURGERY

Part-I

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

Part- II:

Paper-I : Minor Oral Surgery and Trauma

Paper-II : *Maxillo-facial Surgery*

Paper-III : Descriptive and analysing type question

(iv) CONSERVATIVE DENTISTRY AND ENDODONTICS

Part-I

Paper-I : **Applied Basic Sciences:** Applied Anatomy, Physiology, Pathology including Oral Microbiology, Pharmacology, Biostatistics and Research Methodology and Applied Dental Materials.

Part-II

Paper-I : Conservative Dentistry

Paper-II : Endodontics

Paper-III : Descriptive and analysing type question

(v) ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

Part-I

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

Part-II

Paper-I: Orthodontic history, Concepts of occlusion and esthetics, Child and Adult Psychology, Etiology and classification of malocclusion, Dentofacial Anomalies, Diagnostic

procedures and treatment planning in Orthodontics, Practice management in Orthodontic

Paper II: Clinical Orthodontics

Paper III**:** Descriptive and analyzing type question

(vi) ORAL AND MAXILLOFACIAL PATHOLOGY AND ORAL MICROBIOLOGY:

Part-I

Paper-I: **Applied Basic Sciences:** Applied anatomy, Physiology (General and oral), Cell Biology, General Histology, Biochemistry, General Pathology, General and Systemic Microbiology, Virology, Mycology, Basic Immunology, Oral Biology (oral and dental histology), Biostatistics and Research Methodology

Part-II:

Paper-I: Oral pathology, Oral Microbiology and Immunology and Forensic Odontology

Paper-II: Laboratory techniques and Diagnosis and Oral Oncology

Paper-III: Descriptive and analyzing type question

(vii) PUBLIC HEALTH DENTISTRY

Part-I

Paper-I: **Applied Basic Sciences:** Applied Anatomy and Histology, Applied Physiology and Biochemistry, Applied Pathology, Microbiology, Oral Pathology, Physical and Social Anthropology, Applied Pharmacology and Research Methodology and Biostatistics.

Part-II:

Paper-I: Public Health

Paper-II: Dental Public Health

Paper-III: Descriptive and analyzing type question

(viii) PEDIATRIC DENTISTRY

Part-I

Paper I**: Applied Basic Sciences :** Applied Anatomy, Physiology, and Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics Growth and Development and Dental plaque, Genetics.

Part-II:

Paper-I: Clinical Pedodontics

Paper-II: Preventive and Community Dentistry as applied to pediatric dentistry

Paper-III: Descriptive and analyzing type question

(ix) ORAL MEDICINE AND RADIOLOGY

Part-I

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

Part-II:

Paper-I: Oral and Maxillofacial Radiology

Paper-II: Oral Medicine, therapeutics and laboratory investigations

Paper-III: Descriptive and analyzing type question

SECTION II

GOALS & OBJECTIVES OF MDS COURSE

Goals:

The goals of postgraduate training in various specialties is to train B.D.S. graduate who will, after successful completion of the course:

© Practice respective specialty efficiently and effectively, backed by scientific knowledge and skill.

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

© Continue to evince keen interest in continuing professional education in the specialty and allied specialties irrespective of whether in teaching or practice.

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

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

Objectives:

The objective is to train a candidate so as to ensure higher competence in both general and special area of interest and prepare him for a career in teaching, research and specialty practice. A candidate must achieve a high degree of clinical proficiency in the subject matter and develop competence in research and its methodology as related to the field concerned.

The above objectives are to be achieved by the time the candidate completes the course. The objectives may be considered as under -

1. Knowledge (Cognitive domain)
2. Skills (Psycho motor domain)
3. Human values, ethical practice and communication abilities

Knowledge:

© Demonstrate understanding of basic sciences relevant to specialty.

© Describe etiology, pathophysiology, principles of diagnosis and management of common problems within the specialty in adults and children.

© Identify social, economic, environmental and emotional determinants in a given case and take them into account for planning treatment.

© Recognize conditions that may be outside the area of specialty/competence and to refer them to an appropriate specialist.

© Update knowledge by self-study and by attending courses, conferences, seminars relevant to specialty.

© Undertake audit, use information technology and carry out research with the aim of publishing or presenting the work at various scientific gatherings.

Skills:

1. 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.

2. Acquire adequate skills and competence in performing various procedure required in the specialty.

Human values, ethical practice and communication abilities:

© Adopt ethical principles in all aspects of practice.

© Professional honesty and integrity are to be fostered.

© Patient care is to be delivered irrespective of social status, caste, creed or religion of the patient.

© Develop communication skills, in particular and skill to explain various options available in management and to obtain a true informed consent from the patient

© Provide leadership and get the best out of his team in a congenial working atmosphere.

© Apply high moral and ethical standards while carrying out human or animal research.

© Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.

© Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

SECTION III

COURSE DESCRIPTION OF VARIOUS SPECIALTIES

1. DEFINITIONS OF VARIOUS SPECIALITIES:

1. **Prosthodontics and Crown & Bridge**

Prosthodontics and Crown & Bridge and Oral Implantology i.e. that branch of Dental art and science pertaining to the restoration and maintenance of oral function, health, comfort and appearance by the replacement of missing or lost natural teeth and associated tissues either by fixed or removable artificial substitutes.

2. Periodontology

Periodontology and Oral Implantology is the science dealing with the health and diseases of the investing and supporting structures of the teeth and oral mucous membrane.

3.Oral & Maxillofacial Surgery

Oral and Maxillofacial surgery and Implantology deals with the diagnosis and surgical and adjunctive treatment of diseases, injuries and defects of the human jaws and associated oral and facial structures.

4.Conservative Dentistry and Endodontics

Conservative dentistry deals with prevention and treatment of the diseases and injuries of the hard tissues and the pulp of the tooth and associated periapical lesions.

5. Orthodontics and Dentofacial Orthopedics

Deals with prevention and correction of oral anomalies and malocclusion and the harmonizing of the structures involved, so that the dental mechanisms will function in a normal way.

6. Oral Pathology & Microbiology

Oral Pathology deals with the nature of oral diseases, their causes, processes and effects. It relates the clinical manifestation of oral diseases to the physiologic and anatomic changes associated with these diseases.

7. Public Health Dentistry

Community Dentistry is the science and art of preventing and controlling Dental diseases and promoting Dental health through organized community efforts.

8. Pedodontics and Preventive Dentistry

Deals with prevention and treatment of oral and Dental ailments that may occur during childhood.

9. Oral Medicine and Radiology

Oral Medicine is that specialty of dentistry concerned with the basic diagnostic procedures and techniques useful in recognizing the diseases of the oral tissues of local and constitutional origin and their medical management.

Radiology is a science dealing with x-rays and their uses in diagnosis and treatment of diseases in relation to orofacial diseases.

2. Course contents

Prosthodontics

To train dental graduates so as to ensure higher competence in both general and special area of Prosthodontics and prepare a candidate for teaching, research and clinical abilities including prevention and after care in prosthodontics including crown and bridge-and implantology.

General Objectives of the Course:

© Training programme in Prosthodontic dentistry including Crown & Bridge & Implantology is structured to achieve knowledge and skill in theoretical and clinical laboratory, attitude, communicative skills and ability to research with understanding of social, cultural, education and environmental background of the society

© To have acquired adequate knowledge and understanding of applied basic and systematic medical science knowledge in general and particular to head and neck.

© The postgraduates will be able to provide Prosthodontic therapy for patients with competence and working knowledge with understanding of applied medical, behavioral and clinical science that are beyond the treatment skills of the general BDS graduate and MDS graduate of other specialties to demonstrate evaluative and judgment skills in making appropriate decisions regarding prevention, treatment aftercare and referral to deliver comprehensive care to patients.

Knowledge

The candidate should possess knowledge applied basic and systematic medical sciences.

© On human anatomy, embryology, histology, applied in general and particular to head and neck, Physiology & Biochemistry, Pathology and microbiology, virology, Health and diseases of various systems of the body (systemic) principles in surgery and medicine, Pharmacology, Nutrition,

behavioral Science, Age changes, genetics, Immunology, Congenital defects and syndrome and Anthropology, Bioengineering, Bio-medical and Biological Principle and application Dental material science

© Ability to diagnose and plan treatment for patients requiring a Prosthodontic therapy

© Ability to read and interpret a radiograph and other investigations for the purpose of diagnosis treatment planning.

© Tooth and tooth surface restorations, Complete denture prosthodontics, removable partial dentures Prosthodontics, fixed prosthodontics and maxillofacial and Craniofacial Prosthodontics, implants supported Prosthodontics, T.M.J, and occlusion, craniofacial esthetic, and biomaterials. Craniofacial disorders , problems of psychogenic origin.

© Age changes and Prosthodontic Therapy for aged.

© Ability to diagnose failed restoration and provide Prosthodontic therapy and after care.

© Should have essential knowledge on ethics, laws and Jurisprudence and forensic odontology in Prosthodontics

© General health conditions and emergency as related to prosthodontics treatment,

© Identify social, cultural, economic, environmental, educational and emotional determinants of the patient and consider them in planning the treatment.

© Identify cases, which are outside the area of his specialty/ competence and refer them to appropriate specialists.

© Advice regarding case management involving surgical, interim treatment etc.

© Competent specialization in team management of craniofacial design.

© Should attend continuing education programmes, seminars and conferences related to prosthodontics in thus updating himself/herself.

© Teach and guide his / her team, colleague and other students.

© Should be able to use information technology tools and carry out research basic and clinical, with the aims of publishing his/ her work and presenting his/her work at various scientific forums.

© Should have essential knowledge of personal hygiene, infection control, prevent of cross infection and safe disposal of waste, keeping in view the risks of transfer of Hepatitis & HIV

© Should have an ability to plan to establish Prosthodontic clinic/department in a teaching hospital

© Should have a sound knowledge for the application of pharmacology, effects of drugs on oral tissues and systems of the body and on medically compromised individuals.

Skills

© The candidate should be able to examine the patients requiring Prosthodontic therapy, investigate the patient systemically, analyze the investigation results,

radiography, diagnose the ailment, plan a treatment, communicate it with the patient and execute it.

© Understand the prevalence and prevention of diseases of craniomandibular system related to Prosthetic dentistry.

© The candidate should be able to restore the lost functions of the stomatognathic system namely speech, mastication etc to provide a quality health care for craniofacial region

© The candidate should be able to interact with other speciality including a medical speciality for a planned team management of patients for a craniofacial and oral acquired and congenital defects, Temporomandibular joint syndromes, esthetics, Implant supported Prosthetics and problems of Psychogenic origin,

© Should be able to demonstrate the clinical competence necessary to carry out appropriate treatment at higher level of knowledge, training and practice skills currently available in their specialty area.

© Identify target diseases and awareness amongst the population for Prosthodontic therapy.

© Perform clinical and Laboratory procedure with understanding of biomaterials, tissue conditions related to prosthesis and have competent dexterity and skill for performing clinical and laboratory procedures in fixed, removable, implant and maxillofacial TMJ, esthetics Prosthodontics.

© Laboratory technique management based on skills and knowledge of Dental Materials and dental equipment and instruments,

© To understand demographic distribution and target diseases of Cranio mandibular region related to Prosthodontic including crown & bridge and implantology.

Attitudes

© Adopt ethical principles in all Prosthodontic practice. Professional honesty and integrity are to be fostered. Treatment to be delivered irrespective of social status, caste, creed or religion of patient.

© Willing to share the knowledge and clinical experience with professional colleagues.

© Willing to adopt new methods and techniques in prosthodontics from time to time based on scientific research, which is in patient's best interest.

© Respect patient's rights and privileges including patients right to information and right to seek second opinion.

Communication Abilities

© Develop communication skills, in particular, to explain treatment option available in management.

© Provide leadership and get the best out of his group in a congenial working atmosphere.

© Should be able to communicate in simple understandable language with the patient and explain the principles of prosthodontics to the patient. He should be able to guide and counsel the patient with regard to various treatment modalities available.

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

Course Contents

© The candidates shall undergo training for 3 academic years with satisfactory attendance of 80% for each year.

© The course includes epidemiology and demographic studies, research and teaching skills.

© Ability to prevent, diagnose and treat with after care for all patients for control of diseases and / or treatment related syndromes with patient satisfaction for restoring functions of Stomatognathic system by Prosthodontic therapy

The program out line addresses the knowledge, procedural and operative skills needed in Masters Degree in Prosthodontics. A minimum of 3 years of formal training through a graded system of education as specified will enable the trainee to achieve Masters Degree in Prosthodontics including Crown & Bridge and Implantology, competently and have the necessary skills/ knowledge to update themselves with advancements in the field. The course content has been identified and categorized as Essential knowledge as given below.

Essential Knowledge

The topics to be considered are: Basic Sciences, Biological and mechanical considerations in Prosthodontics including Crown and Bridge Implantology and Material Science.

APPLIED BASIC SCIENCES

© Although knowledge on the applied aspects of Anatomy, Embryology, Histology and applied in general and particular to head and neck, Physiology, Biochemistry, Pathology and Microbiology, Virology.

© Pharmacology, Health and diseases of various systems of Body (systemic) principles in surgery medicine and Anesthesia, Nutrition, Behavioral sciences, age changes, genetics, Dental Material Science, congenital defects and Syndromes and Anthropology, Biomaterial Sciences Bio-engineering and Biomedical and Research Methodology as related to Masters degree prosthodontics including crown & bridge and implantology.

It is desirable to have adequate knowledge in Bio-statistics Research Methodology and use of computers. To develop necessary teaching skills in Prosthodontics including crown and bridge and implantology

Applied anatomy of Head and Neck

General Human Anatomy - Gross Anatomy, anatomy of Head & Neck in detail. Cranial and facial bones, TMJ and function, muscles of mastication and facial expression, muscles of neck and chain of back muscles including muscles of deglutition and tongue, arterial supply and venous drainage of the head and neck, anatomy of the Para nasal sinuses with relation**
to the Vth cranial nerve. General consideration of the structure and function of the brain, ^considerations of V, VII, XI, XII, cranial nerves and autonomic nervous system of the dand neck. The salivary glands, Pharynx, Larynx Trachea, Esophagus, Functional Anatomy mastication, Deglutition, speech, respiration, and circulation, teeth eruption, morphology, elusion and function. Anatomy of TMJ, its movements and myofacial pain dysfunction syndrome.

Embryology- Development of the face, tongue, jaws, TMJ, Paranasal sinuses, pharynx, larynx, trachea, esophagus, Salivary glands, Development of oral and Para oral tissue including detailed aspects of tooth and dental hard tissue formation

Growth & Development - Facial form and Facial growth and development overview of Dentofacial growth process and physiology from fetal period to maturity and old age, comprehensive study of craniofacial biology. General physical growth, functional and anatomical aspects of the head, changes in craniofacial skeletal, relationship between . development of the dentition and facial growth.

Dental Anatomy - Anatomy of primary and secondary dentition, concept of occlusion, mechanism of articulation, and masticatory function. Detailed structural and functional study of the oral dental and Para oral tissues. Normal occlusion, development of occlusion in deciduous mixed and permanent dentitions, root length, root configuration, tooth-numbering system.

Histology - histology of enamel, dentin, Cementum, periodontal ligament and alveolar bone, pulpal anatomy, histology and biological consideration. Salivary glands and Histology of epithelial tissues including glands.

Histology of general and specific connective tissue including bone, hematopoietic system, lymphoid etc.

Muscle and neural tissues Endocrinal system including thyroid Salivary glands Histology of skin, oral mucosa, respiratory mucosa, connective tissue, bone, cartilage, cellular elements of blood vessels, blood, lymphatic, nerves, muscles, tongue, tooth and its surrounding structures.

Anthropology & Evolution - Comparative study of tooth, joints, jaws, muscles of mastication and facial expression, tongue, palate, facial profile and facial skeletal system. Comparative anatomy of skull, bone, brain, musculo - skeletal system, neuromuscular coordination, posture and gait - planti gradee and ortho gradee posture.

Applied Genetics and Heredity - Principles of orofacial genetics, molecular basis of genetics, genetic risks, counseling, bioethics and relationship to Orthodontic management. Dentofacial anomalies, Anatomical, psychological and pathological characteristic of major groups of developmental defects of the orofacial structures

cell biology - Detailed study of the structure and function of the mammalian cell with special emphasis on ultra structural features and molecular aspects. Detailed consideration of Intercellular junctions. Cell cycle and division, cell-to-cell and cell- extra cellular matrix interactions.

Applied Physiology and Nutrition - Introduction, Mastication, deglutition, digestion and assimilation, Homeostasis, fluid and electrolyte balance. Blood composition, volume, function, blood groups and hemorrhage, Blood transfusion, circulation, Heart, Pulse, Blood pressure, capillary and lymphatic circulation, shock, respiration, control, anoxia, hypoxia, asphyxia, artificial respiration. Endocrine glands in particular reference to pituitary, parathyroid and thyroid glands and sex hormones. Role of calcium and Vit D in growth and development of teeth, bone and jaws. Role of Vit. A, C and B complex in oral mucosal and periodontal health. Physiology and function of the masticatory system. Speech mechanism, mastication, swallowing and deglutition mechanism, salivary glands and Saliva

Endocrines- General principles of endocrine activity and disorders relating to pituitary, thyroid, pancreas, parathyroid, adrenals, gonads, including pregnancy and lactation. Physiology of saliva, urine formation, normal and abnormal constituents, Physiology of pain, Sympathetic and parasympathetic nervous system. Neuromuscular co-ordination of the stomatognathic system.

Applied Pharmacology and Therapeutics- Definition of terminologies used - Dosage and mode of administration of drugs. Action and fate of drugs in the body, Drug addiction, tolerance and hypersensitive reactions, Drugs acting on the central nervous system, general anesthetics hypnotics. Analeptics and tranquilizers, Local anesthetics, Chemotherapeutics and antibiotics, Antitubercular and anti syphilitic drugs, Analgesics and antipyretics, Antiseptics, styptics, Sialogogues and antisialogogues, Haematinics, Cortisone, ACTH, insulin and other antidiabetics

vitamins: A, D, B - complex group C and K etc. Chemotherapy and Radiotherapy

Applied Pathology - Inflammation, repair and degeneration, Necrosis and gangrene, Circulatory disturbances, Ischemia, hyperemia, chronic venous congestion, edema, thrombosis, embolism and infarction. Infection and infective granulomas, Allergy and hypersensitive reaction, Neoplasm; Classification of tumors, Carcinogenesis, characteristics of benign and malignant tumors, spread of tumors. Applied histo pathology and clinical pathology.

Applied Microbiology- Immunity, knowledge of organisms commonly associated with diseases of the oral cavity (morphology cultural characteristics etc) of strepto, staphylo, pneumo, gono and meningococci, Clostridia group of organisms, Spirochetes, organisms of tuberculosis, leprosy, diphtheria, actinomycosis and moniliasis etc. Virology, Cross infection control, sterilization and hospital waste management

a) **Applied Oral Pathology** -Developmental disturbances of oral and Para oral structures, Regressive changes of teeth, Bacterial, viral and mycotic infections of oral cavity, Dental caries, diseases of pulp and periapical tissues, Physical and chemical injuries of the oral cavity, oral manifestations of metabolic and endocrine disturbances, Diseases of the blood and blood forming organism in relation to the oral cavity, Periodontal diseases, Diseases of the skin, nerves and muscles in relation to the Oral cavity.

b) **Laboratory determinations-** Blood groups, blood matching, R.B.C. and W.B.C. count, Bleeding and clotting time, Smears and cultures - urine analysis and culture

BioStatistics- Study of Biostatistics as applied to dentistry and research. Definition, aim characteristics and limitations of statistics, planning of statistical experiments, sampling, collection, classification and presentation of data (Tables, graphs, pictograms etc) Analysis of data

Introduction to biostatistics- Scope and need for statistical application to biological data. Definition of selected terms - scale of measurements related to statistics, Methods of collecting data, presentation of the statistical diagrams and graphs.
Frequency curves, mean, mode of median, Standard deviation and co-efficient of variation, Correlation - Co-efficient and its significance, Binominal distributions normal distribution and Poisson distribution, Tests of significance

Research methodology - Understanding and evaluating dental research, scientific method and the behavior of scientists, understanding to logic - inductive logic - analogy, models, authority, hypothesis and causation, Quacks, Cranks, Abuses of Logic, Measurement and Errors of measurement, presentation of results, Reliability, Sensitivity and specificity diagnosis test and measurement, Research Strategies, Observation, Correlation, Experimentation and Experimental design. Logic of statistical interference balance judgements, judgement under uncertainty, clinical

vs., scientific judgement, problem with clinical judgement, forming scientific judgements, the problem of contradictory evidence, citation analysis as a Means of literature evaluation, influencing judgement: Lower forms of Rhetorical life, Denigration, Terminal, Inexactitude.

Applied Radiology- Introduction, radiation, background of radiation, sources, radiation biology, somatic damage, genetic damage, protection from primary and secondary radiation, Principles of X-ray production, Applied principles of radio therapy and after care.

Roentgenographs Techniques- Intra oral: Extra oral roentgenography, Methods of localization digital radiology and ultra sound, Normal anatomical landmarks of teeth and jaws in radiograms, temporomandibular joint radiograms, neck radiograms.

Applied medicine-Systemic diseases and its influence on general health and oral and&fenta! health. Medical emergencies in the dental offices - Prevention, preparation, medico legal consideration, unconsciousness, respiratory distress, altered consciousness, seizures, drug related emergencies, chest pain, cardiac arrest, premedication, and management of ambulatory patients, resuscitation, applied.

psychiatry, child, adult and senior citizens. Assessment of case, premaliation, inhibition, monitoring, extubalin, complication assist in O.T. for anesthesia.

Applied surgery & Anesthesia-General principles of surgery, wound healing, incision wound care, hospital care, control of hemorrhage, electrolyte balance. Common bandages, sutures, splints, shifting of critically ill patients, prophylactic therapy, bone surgeries, grafts, etc, surgical techniques, nursing assistance, anesthetic assistance.

Principles in speech therapy, surgical and radiological craniofacial oncology, applied surgical ENT and ophthalmology.

Plastic surgery - Applied understanding and assistance in programmes of plastic surgery for prosthodontics therapy.

Applied Dental Material

© All materials used for treatment of craniofacial disorders - Clinical, treatment, and laboratory materials, Associated materials, Technical consideration, shelf life, storage, manipulations, sterilization, and waste management.

© Students shall be trained and practiced for all clinical procedures with an advanced knowledge of theory of principles, concepts and techniques of various honorably accepted methods and materials for Prosthodontics, treatment modalities including honorably accepted methods of diagnosis, treatment plan, records maintenance, and treatment and laboratory procedures and after care and preventive.

© Understanding all applied aspects for achieving physical, psychological well being of the patients for control of diseases and / or treatment related syndromes with the patient satisfaction and restoring function of Cranio mandibular system for a quality life of a patient

© The theoretical knowledge and clinical practice shall include principles involved for support, retention, stability, esthetics, phonation, mastication, occlusion, behavioral, psychological, preventive and social aspects of science of Prosthodontics including Crown & Bridge and Implantology

© Theoretical knowledge and clinical practice shall include knowledge for laboratory practice and material science. Students shall acquire knowledge and practice of history taking, systemic and oro and Craniofacial region and diagnosis and treatment plan and prognosis record maintaining. A comprehensive rehabilitation concept with pre prosthetic treatment plan including surgical Reevaluation and prosthodontic treatment plan, impressions, jaw relations, utility of face bow and articulators, selection and positioning of teeth for retention, stability, esthetics, phonation and psychological comfort. Fit and insertion and instruction for patients after care and preventive Prosthodontics, management of failed restorations.

© TMJ syndromes, occlusion rehabilitation and craniofacial esthetics. State of the art clinical methods and materials for implants supported extra oral and intra oral prosthesis.

© Student shall acquire knowledge of testing biological, mechanical and other physical property of all materials used for the clinical and laboratory procedures in prosthodontic therapy.

© Students shall acquire full knowledge and practice Equipments, instruments, materials, and laboratory procedures at a higher competence with accepted methods.

© All clinical practice shall involve personal and social obligation of cross infection control, sterilization and waste management.

I. REMOVABLE PROSTHODONTICS AND IMPLANTS

a. Prosthodontic treatment for completely edentulous patients - Complete denture, immediate complete denture, single complete denture, tooth supported complete denture, Implant supported Prosthesis for completely edentulous.

b. Prosthodontic treatment for partially edentulous patients: - Clasp- retained partial dentures, intra coronal and extra coronal precision attachments retained partial dentures, maxillofacial prosthesis.

Prosthodontic treatment for edentulous patients: -Complete Dentures and Implant supported Prosthesis for Edentulous in both the arches

Complete Denture Prosthesis - Definitions, terminology, G.P.T., Boucher's clinical dental terminology

Scope of Prosthodontics - the Cranio Mandibular system and its functions, the reasons for loss of teeth and methods of restorations,

Infection control, cross infection barrier - clinical and laboratory and hospital and lab waste management

a) Edentulous Predicament, Biomechanics of the edentulous state, Support mechanism for the natural dentition and complete dentures, Biological considerations, Functional and Para functional considerations, Esthetic, behavioral and adaptive responses, Temporomandibular joints changes.

b) Effects of aging of edentulous patients - aging population, distribution and edentulism in old age, impact of age on edentulous mouth - Mucosa, Bone, saliva, jaw movements in old age, taste and smell, nutrition, aging, skin and teeth, concern for personal appearance in old age

c) Sequalae caused by wearing complete denture - the denture in the oralenvironment - Mucosal reactions, altered taste perception, burning mouth syndrome, gagging, residual ridge reduction, denture stomatitis, flabby ridge, denture irritation hyperplasia, traumatic Ulcers, Oral cancer in denture wearers, nutritional deficiencies, masticatory ability and performance, nutritional status and masticatory functions.

d) Temporomandibular disorders in edentulous patients - Epidemiology, etiology and management, Pharmacotherapy, Physical modalities, and Bio-behavioral modalities

e) Nutrition Care for the denture wearing patient - Impact of dental status of food intake, Gastrointestinal functions, nutritional needs and status of older adults, Calcium and bone health, vitamin and herbal supplementation, dietary counseling and risk factor for malnutrition in patients with dentures and when teeth are extracted.

f) Preparing patient for complete denture patients - Diagnosis and treatment planning for edentulous and partially edentulous patients - familiarity with patients, principles of perception, health questionnaires and identification data, problem identification, prognosis and treatment identification data, problem identification, prognosis and treatment planning - contributing history - patient's history, social information, medical status - systemic status with special reference to debilitating diseases, diseases of the joint, cardiovascular, disease of the skin, neurological disorders, oral malignancies, climacteric, use of drugs, mental health - mental attitude, psychological changes, adaptability, geriatric changes - physiologic, pathological, pathological and intra oral changes. Intra oral health - mucosa membrane, alveolar ridges, palate and vestibular sulcus and dental health.

Data collection and recording, visual observation, radiography, palpation, measurement

- sulci or fossae, extra oral measurement is the vertical dimension of occlusion, diagnostic casts.

Specific observations - existing dentures, soft tissue health, hard tissue health - teeth, bone.

Biomechanical considerations - jaw relations, border tissues, saliva, muscular development - muscle tones, neuromuscular co-ordination, tongue, cheek and

lips.

Interpreting diagnostic findings and treatment planning

g) Pre prosthetic surgery - Improving the patients denture bearing areas and " relations: - non surgical methods - rest for the denture supporting tissues, 0m! correction of the old prosthesis, good nutrition, conditioning of the patients musculature, surgical methods - Correction of conditions, that preclude optimal prosthetic function - hyperplastic ridge - epulis fissuratum and papillomatosis, frenular attachments and pendulous maxillary tuberosities, ridge augmentation,

maxillary and Mandibular oral implants, corrections of congenital deformities, discrepancies in jaw size, relief of pressure on the mental foramen, enlargement of denture bearing areas, vestibuloplasty, ridge augmentation, replacement of tooth roots with Osseo integrated denture implants.

h) Immediate Denture - Advantages, disadvantages, contra indication, diagnosis treatment plan and prognosis, Explanation to the patient, Oral examinations, examination of existing prosthesis, tooth modification, prognosis, referrals / adjunctive care, oral prophylaxis and other treatment needs.

First extraction / surgical visit, preliminary impressions and diagnostic casts, management of loose teeth, custom trays, final impressions and final casts two tray or sectional custom impression tray, location of posterior limit and jaw relation records, setting the denture teeth / verifying jaw relations and the patient try in, laboratory phase, setting of anterior teeth, Wax contouring, flasking and boil out, processing and finishing, surgical templates, surgery and immediate denture insertion, post operative care and patient instructions, subsequent service for the patient on the immediate denture, over denture tooth attachments, implants or implant attachments.

i) Over dentures (tooth supported complete dentures) - indications and treatment planning, advantages and disadvantages, selection of abutment teeth, lose of abutment teeth, tooth supported complete dentures. Non-coping abutments, abutment with copings, abutments with attachments, submerged vital roots, preparations of the retained teeth.

j) Single Dentures: Single Mandibular denture to oppose natural maxillary teeth, single complete maxillary denture to oppose natural Mandibular teeth to oppose a partially edentulous Mandibular arch with fixed prosthesis, partially edentulous Mandibular arch with removable partial dentures. Opposing existing complete dentures, preservation of the residual alveolar ridge,

necessity for retaining maxillary teeth and mental trauma.

k) Art of communication in the management of the edentulous predicament - Communication - scope, a model of communication, why communication . important, what are the elements of effective communications, special significance of doctor / patient communication, doctor behavior, The iatrosedative (doctor & act of making calm) recognizing and acknowledging the problem, exploring and identifying the problem, interpreting and explaining the problem, offering a solution to the problem for mobilize their resources to operate most efficient way, recognizing and acknowledging the problem, interpreting and explaining the problem, offering a solution to theproblem.

I) Materials prescribed in the management of edentulous patients - Denture base materials, General requirements of biomaterials for edentulous patients, requirement of an ideal denture base, chemical composition of denture base resins, materials used in the fabrication of prosthetic denture teeth, requirement of prosthetic denture teeth, denture lining materials and tissue conditioners, cast metal alloys as denture, bases - base metal alloys.

m) Articulators - Classification, selection, limitations, precision, accuracy and sensitivity, and Functional activities of the lower member of the articulator and uses,

n) Fabrications of complete dentures - complete denture impressions - muscles of facial expressions and anatomical landmarks, support, retention, stability, aims and objectives - preservation, support, stability, aesthetics, and retention. Impression materials and techniques - need of 2 impressions the preliminary impression and final impression.

Developing an analogue / substitute for the maxillary denture bearing area -anatomy of supporting structures - mucous membrane, hard palate, residual ridge, shape of the supporting structure and factors that influence the form and size of the supporting bones, incisive foramen, maxillary tuberosity, sharp spiny process, torus palatinus, Anatomy of peripheral or limiting structures, labial vestibule, Buccal vestibule, vibrating line, preliminary and final impressions, impression making, custom tray and refining the custom tray, preparing the tray to secure the final impression, making the final impression, boxing impression and making the casts

Developing an analogue / substitute for the Mandibular denture bearing area-Mandible - anatomy of supporting structure, crest of the residual ridge, the Buccal shelf, shape of supporting structure, mylohyoid ridge, mental foramen, genial tubercles, torus mandibularis, Anatomy of peripheral or limiting structure - labial vestibule, Buccal vestibule, lingual border, mylohyoid muscle, retromylohyoid fossa, sublingual gland region, alveolingual sulcus, Mandibular impressions - preliminary impressions, custom tray, refining, preparing the tray\, final impressions.

m) Mandibular movements, Maxillo mandibular relation and concepts of occlusion - Gnathology, identification of shape and location of arch form - Mandibular and maxillary, occlusion rim, level of occlusal plane and recording of trail denture base, tests to determine vertical dimension of occlusion, interocclusal, centric relation records, Biological and clinical considerations in making jaw relation records and transferring

records from the patients to the articulator, Recording of Mandibular movements - influence of opposing tooth contacts, Temporomandibular joint, muscular involvements, neuromuscular regulation of Mandibular motion, the envelope of motion, rest position, Maxillo - Mandibular relations - the centric, eccentric, physiologic rest position, vertical dimension, occlusion, recording methods - mechanical, physiological, Determining the horizontal jaw relation - Functional graphics, tactile or interocclusal check record method, Orientation / sagittal relation records, Arbitrary / Hinge axis and face bow record, significance and requirement, principles and biological considerations and securing on articulators.

n) Selecting and arranging artificial teeth and occlusion for the edentulous patient - anterior tooth selection, posterior tooth selection, and principles in arrangement of teeth, and factors governing position of teeth - horizontal, vertical. The inclinations and arrangement of teeth for aesthetics, phonetics and mechanics -to concept of occlusion.

o) The Try in - verifying vertical dimension, centric relation, establishment of posterior palatal seal, creating a facial and functional harmony with anterior teeth, harmony of spaces of individual teeth position, harmony with sex, personality and age of the patient, co-relating aesthetics and incisalguidance.

p) Speech considerations with complete dentures - speech production - structural and functional demands, neuropsychological background, speech production and the roll of teeth and other oral structures - bilabial sounds, labiodentals sounds, linguodental sounds, linguoalveolar sound, articulatoric characteristics, acoustic characteristics, auditory characteristics, linguopalatal and linguoalveolar sounds, speech analysis and prosthetic considerations.

q) Waxing contouring and processing the dentures their fit and insertion and after care - laboratory procedure - wax contouring, flasking and processing, laboratory remount procedures and selective, finishing and polishing. Critiquing the finished prosthesis - doctors evaluation, patients evaluation, friends evaluation, elimination of basal surface errors, errors in occlusion, interocclusal records for remounting procedures - verifying centric relation, eliminating occlusal errors, special instructions to the patient - appearance with new denture, mastication with new dentures, speaking with new dentures, speaking with new dentures, oral hygiene with dentures, preserving of residual ridges and educational material for patients, maintaining the comfort and health of the oral cavity in the rehabilitated edentulous patients. Twenty-four hours oral examination and treatment and preventive Prosthodontic - periodontic recall for oral examination 3 to 4 months intervals and yearly intervals.

m) Implant supported Prosthesis for partially edentulous patients - Science of Osseo integration, clinical protocol for treatment with implant supported over dentures, managing problems and complications, implant Prosthodontics for edentulous patients: current and future directions.

n) Implant supported prosthesis for partially edentulous patients - Clinical and laboratory protocol: Implant supported prosthesis, managing problems andimplications.

© Introduction and Historical Review

© Biological, clinical and surgical aspects of oral implants

© Diagnosis and treatment planning

© Radiological interpretation for selection of fixtures

© Splints for guidance fort surgical placement of fixtures

© Intra oral plastic surgery © Guided bone and Tissue generation consideration for implants fixture. © © Implants supported prosthesis for complete edentulism and partial edentulism

© Occlusion for implants support prosthesis.

© Peri-implant tissue and Management

© Peri-implant and management

© Maintenance and after care

© Management of failed restoration.

© Work authorization for implant supported prosthesis - definitive instructions, legal aspects, delineation of responsibility.

Prosthodontic treatment for partially edentulous patients - Removable partial Prosthodontics -

a.Scope, definition and terminology, Classification of partially edentulous arches - requirements of an acceptable methods of classification, Kennedy's classification, Applegate's rules for applying the Kennedy classification.

b.Components of RPD - major connector - mandibular and maxillary, minor connectors, design, functions, form and location of major and minor connectors, tissue stops, finishing lines, reaction of tissue to metallic coverage

Rest and rest seats - from of the Occlusal rest and rest seat, interproximal Occlusal rest seats, internal Occlusal rests, possible movements of partial dentures, support for rests, lingual rests on canines and incisor teeth, incisal rest and rest seat.

Direct retainer- Internal attachment, extracoronal direct retainer, relative uniformity of retention, flexibility of clasp arms, stabilizing - reciprocal clasp are, criteria for selecting a given clasp design, the basic principles of clasp design, circumferential clasp, bar clasp, combination clasp and other type of retainers.

Indirect Retainer - denture rotation about an axis, factors influencing effectiveness of indirect retainers, forms of indirect retainers, auxiliary Occlusal rest, canine extensions from Occlusal

an opposing cast or template, types of anterior teeth, waxing and investing tinW partial denture before processing acrylic resin bases, processing the denture, remounting and occlusal correction to

an occlusal template, polishing the denture.

m. Initial placement, adjustment and servicing of the removable partial denture - adjustments to bearing surfaces of denture framework, adjustment of occlusion in harmony with natural and artificial dentition, instructions to the patient, follow - up services

n. Relining and Rebasing the removable partial denture - Relining tooth supported dentures bases, relining distal extension denture bases, methods of reestablishing occlusion on a relined partial denture.

o. Repairs and additions to removable partial dentures - Broken clasp arms, fractured occlusal rests, distortion or breakage of other components - major and minor connectors, loss of a tooth or teeth not involved in the support or retention of the restoration, loss of an abutment tooth necessitating its replacement and making a new direct retainer, Other types of repairs, Repair by soldering.

p. Removable partial denture considerations in maxillofacial prosthetics - Maxillofacial prosthetics, intra oral prosthesis, design considerations, maxillary prosthesis. Obturators, speech aids, palatal lifts, palatal augmentations, mandibular prosthesis, treatment planning, framework design, class I resection, Class II resection, mandibular flange prosthesis, jaw relation record

q. Management of failed restorations, work authorization.

I. MAXILLOFACIAL REHABILITATION:

Scope, terminology, definitions, cross infection control and hospital waste management, work authorization.

Behavioral and psychological issues in Head and neck cancer, Psychodynamic interactions - clinician and patient - Cancer Chemotherapy: Oral Manifestations, Complications, and management, Radiation therapy of head and neck tumors: Oral effects, Dental manifestations and dental treatment: Etiology, treatment and rehabilitation (restoration)- Acquired defect of the mandible, acquired defects of hard palate, soft palate, clinical management of edentulous and partially edentulous maxillectomy patients, Facial defects, Restoration of speech, Velopharyngeal function, cleft lip and palate, cranial implants, maxillofacial trauma, Lip and cheek support prosthesis, Laryngectomy aids, Obstructive sleep apnoea, Tongue prosthesis, Esophageal prosthesis, Vaginal radiation carrier, Burn stents, Nasal stents, Auditory inserts, trismus appliances, mouth controlled devices for assisting the handicapped, custom prosthesis for lagophthalomos of the eye. Osseo integrated supported facial and maxillofacial prosthesis. Resin bonding for maxillofacial prosthesis, Implant rehabilitation of the mandible compromise by radiotherapy, Craniofacial Osseo integration, Prosthodontic treatment, Material and laboratory procedures for maxillofacial prosthesis.

II. OCCLUSION

Evaluation, Diagnosis and Treatment of Occlusal Problems

Scope, definition, terminology, optimum oral health, anatomic harmony, functional harmony, occlusal stability, causes of deterioration of dental and oral health, Anatomical, physiological, neuro - muscular, psychological, considerations of teeth, muscles of mastication, temporomandibular joint, intra oral and extra oral and facial musculatures, the functions of Cranio mandibular system.

Occlusal therapy, the stomatognathic system, centric relation, vertical dimension, the neutral zone, the occlusal plane, differential diagnosis of temporomandibular disorders, understanding and diagnosing intra articular problems, relating treatment to diagnosis of internal derangements of TMJ, Occlusal splints, Selecting instruments for occlusal diagnosis and treatment, mounting casts, Pankey-mann-schuyler philosophy of complete occlusal rehabilitation, long centric, anterior guidance, restoring lower anterior teeth, restoring upper anterior teeth, determining the type of posterior occlusal contours, methods for determining the plane of occlusion, restoring lower posterior teeth, restoring upper posterior teeth, functionally generated path techniques fro recording border movements intra orally, occlusal equilibration, Bruxism, Procedural steps in restoring occlusions, requirements for occlusal stability, solving occlusal problems through programmed treatment planning, splinting, solving - occlusal wear problems, deep overbite problems, anterior overjet problems, anterior open bite problems. Treating - end to end occlusion, splayed anterior teeth, cross bite patient, Crowded, irregular, or interlocking anterior bite, using Cephalometric for occlusal analysis, solving severe arch malrelationship problems, transcranial radiography, postoperative care of occlusal therapy.

III.FIXED PROSTHODONTICS

Scope, definitions and terminology, classification and principles, design, mechanical and biological considerations of components - Retainers, connectors, pontics, work authorization.

© **Diagnosis and treatment planning** - patients history and interview, patients desires and expectations and needs, systemic and emotional health, clinical examinations -head and neck, oral - teeth, occlusal and periodontal, Preparation of diagnostic cast, radiographic interpretation, Aesthetics, endodontics considerations, abutment selection - bone support, root proximities and inclinations, selections of abutments, for cantilever, pier abutments, splinting, available tooth structures and crown morphology, TMJ and muscles mastication and comprehensive planning and prognosis.

© **Management of carious teeth** - caries in aged, caries control, removing infected carious materials, protection of pulp, reconstruction measure for compromising teeth - retentive pins, horizontal slots, retention grooves, prevention of caries, diet, prevention of root caries and vaccine for caries.

© **Periodontal considerations** - attachment units, ligaments, gingivitis, periodort^l Microbiological aspect of periodontal diseases, marginal lesion, occlusal trauma, periodontal pockets attached gingiva, interdental papilla, gingival embrasures, radiographic interpretations of Periodontia, intraoral plastics, periodontal splinting -Fixed prosthodontics with periodontially compromised dentitions, placement of margin restorations.

© **Biomechanical principle of tooth preparations** - individual tooth preparations - Complete metal Crowns - P.F.C., All porcelain - Cerestore crowns, dicor crowns, incerem etc. porcelain jacket crowns partial 3/4, half and half, ridiculer, telescopic, telescopic, pin - hole, pin - ledge, laminates, inlays, onlays and preparations for restoration of teeth - amalgam, glass lonomer and composite resins, Resin Bond retainer, Gingival marginal preparations - Design, material selection, and biological and mechanical considerations - intracoronal retainer and precision attachments -custom made and ready made

© **Isolation and fluid control** - Rubber dam applications, tissue dilation - soft tissue management for cast restoration, impression materials and techniques, provisional restoration, interocclusal records, laboratory support for fixed Prosthodontics' Occlusion, Occlusal equilibration, articulators, recording and transferring of occlusal relations, cementing of restoration.

© **Resins, Gold and gold alloys, glass lonomer, restorations.**

© **Restorations of endodontically treated teeth, Stomatognathic Dysfunction and managements**

© **Management of failed restorations**

© **Osseo integrated supported fixed Prosthodontics** - Osseo integrated supported and tooth supported fixed Prosthodontics

IV. TMJ - Temporomandibular joint dysfunction - Scope, definitions, and terminology

Temporomandibular joint and its function, Orofacial pain, and pain from the temporomandibular joint region, temporomandibular joint dysfunction, temporomandibular joint sounds, temporomandibular joint disorders

Anatomy related, trauma, disc displacement, Osteoarthrosis/Osteoarthritis, Hyper mobility and dislocation, infectious arthritis, inflammatory diseases, Eagle's syndrome (Styloid -stylohyoid syndrome), Synovial chondromatosis, Osteochondrrosis disease, Ostonecrosis, Nerve entrapment process, Growth changes, Tumors, Radiographic imaging

© Etiology, diagnosis and cranio mandibular pain, differential diagnosis and management, orofacial pain - pain from teeth, pulp, dentin, muscle pain, TMJ pain - psycho logic, physiologic - endogenous control, acupuncture analgesia, Placebo effects on analgesia, Trigeminal neuralgia, Temporal arteritis

© Occlusal splint therapy - construction and fitting of occlusal splints, management of occlusal splints, therapeutic effects of occlusal splints, occlusal splints and general muscles performance, TMJ joint uploading and anterior repositioning appliances, use and care of occlusal splints.

© Occlusal adjustment procedures - Reversible - occlusal stabilization splints and physical therapies, jaw exercises, jaw manipulation and other physiotherapy or irreversible therapy - occlusal repositioning appliances, orthodontic treatment, Orthognathic surgery, fixed and removable prosthodontic treatment and occlusal adjustment, removable prosthodontic treatment and occlusal adjustment, Indication for occlusal adjustment, special nature of orofacial pain, Indication for occlusal adjustment, special nature of orofacial pain, Psychopathological considerations, occlusal adjustment philosophies, mandibular position, excursive guidance,, occlusal contact scheme, goals of occlusal adjustment, significance of a slide in centric, Preclinical procedures, clinical procedures for occlusal adjustment.

V. AESTHETIC

Scope, definitions -

Morpho psychology and esthetics, structural esthetic rules - facial components, dental components, gingival components physical components. Esthetics and its relationship to function - Crown morphology, physiology of occlusion, mastication, occlusal loading and clinical aspect in bio esthetic aspects, Physical and physiologic characteristic and muscular activities of facial muscle, perioral anatomy and muscle retaining exercises Smile - classification and smile components, smile design, esthetic restoration of smile, Esthetic management of the dentogingival unit, intraoral plastic for management of gingival contours, and ridge contours, Periodontal esthetics, Restorations - Tooth colored restorative materials, the clinical and laboratory aspects, marginal fit anatomy, inclinations, form, size, shape, color, embrasures, contact point.

Teaching and learning activities:

All the candidates registered for MDS course shall pursue the course for a period of three years as full - time students. During this period each student shall take part actively in learning and teaching activities designed by the Institution/ University. The following are the teaching and learning activities in each speciality.

1. **Lectures:** There shall be didactic lectures both in the speciality and in the allied fields. The postgraduate departments should encourage the guest lectures in the required areas to strengthen the training programmes. It is also desirable to have certain integrated lectures by multidisciplinary teams on selected topics

2. **Journal club:** The journal review meetings shall be held at least once a week. All trainees are expected to participate actively and enter relevant details in logbook. The trainee should make

presentations from the allotted journal of selected articles at least 5 times in a year.

3. **Seminars:** The seminars shall be held at least twice a week in the department, all trainees associated with postgraduate teachers are expected to participate actively and enter relevant details in logbook. Each trainee shall make at least 5-seminar presentation in each year.

4. **Symposium:** It is recommended to hold symposium on topics covering multiple disciplines one in each academic year.

5. **Workshops:** It is recommended to hold workshops on topics covering multiple disciplines one in each academic year.

6. **Clinical Postings:** Each trainee shall work in the clinics on regular basis to acquire adequate professional skills and competency in managing various cases to be treated
by a specialist

7. **Clinico Pathological Conference:** The Clinico pathological conferences should be held once in a month involving the faculties of oral biology, oral medicine and radiology, oral pathology, oral surgery, period ontology, endodontia and concerned clinical department. The trainees should be encouraged to present the clinical details, ft radiological and histo-pathological interpretations and participation in the discussions, j

8. **Interdepartmental Meetings:** To bring in more integration among various specialities there shall be interdepartmental meeting chaired by the dean with all heads of postgraduate departments at least once a month.

9. **Rural oriented prosthodontic health care** - To carry out a prosthodontic therapy interacting with rural centers and the institution.

10. **Teaching skills:** All the trainees shall be encouraged to take part in undergraduate teaching programmes either in the form of lectures or group discussions

11. **Evaluation skills:** All the trainees shall be encouraged to take part evaluating the skills and knowledge in clinical laboratory practice including theory by formulating question banks and model answers.

12. **Continuing dental education programmes**: Each Postgraduate department shall organize these programmes on regular basis involving the other institutions. The trainees shall also be encouraged to attend such programmes conducted elsewhere.

13. **Conferences/Workshops/Advanced courses**: The trainees shall be encouraged not only to attend conference/workshops/advance courses but also to present at least two papers at state/national speciality meeting during their training period.

14. **Rotation and posting in other departments**: To bring in more integration between the speciality and allied fields each post graduate department shall workout a programme to rotate the

trainees in related disciplines and Craniofacial and maxillofacial ward.

15. **Dissertation:** Trainees shall prepare a dissertation based on the clinical or laboratory experimental work or any other study conducted by them under the supervision of the post graduate guide.

I YEAR M.D.S.

© Theoretical exposure of all applied sciences of study

© Clinical and non-clinical exercises involved in Prosthodontic therapy for assessment and acquiring higher competence.

© Commencement of Library Assignment within six months.

© Short epidemiological study relevant to Prosthodontics.

© Acquaintance with books, journals and referrals To acquire knowledge of list of published books, journal and website for the purpose of gaining knowledge and reference - in the fields of Prosthodontics including Crown & bridge and implantology

© Acquire knowledge of instruments, equipment, and research tools in Prosthodontics.

© To acquire knowledge of Dental Material Science - Biological and biomechanical, bio- esthetics knowledge of using in laboratory and clinics including testing methods

. © Participation and presentation in seminars, didactics lecture

© Evaluation - Internal Assessment examinations on Applied subjects

II YEAR M.D.S.

© Acquired confidence in obtaining various phases and techniques for providing Prosthodontic therapy.

© Acquiring confidence by clinical practice with sufficient numbers of patient requiring tooth and tooth surface restorations.

© Adequate number of complete denture prosthesis and techniques with higher clinical approach by utilizing in semi-adjustable articulators, face bow and graphic tracing.

© Understanding the use of the dental surveyor and its application in diagnosis and treatment plan in R.P.D.

© Adequate numbers of R.P.D. covering all clinical partially edentulous situation

© Adequate number of Crowns, Inlays, laminates F.P.D. covering all clinically, partial edentulous situation.

© Selection of cases and principles in treatment of edentulous patients, partial or complete by implant supported prosthesis.

© Treating single edentulous situation by implant support.

© Diagnosis and treatment planning.

© 1st stage and 2nd stage implant surgery

© Understanding the maxillofacial Prosthodontics

© Treating craniofacial defects

© Management of orofacial esthetics

© Prosthetic management of TMJ syndrome

© Occlusal rehabilitation

© Maintenance and management of filled restoration

© Prosthodontic Management of patient with psychogenic origin.

© Practice of child and geriatric prosthodontics

© Participation and presentation in seminars, didactics lectures

© Evaluation - Internal Assessment examinations

III YEAR M.D.S

© Clinical and laboratory practice continued from IInd year

© Occlusal equilibration procedures - Fabrication of stabilizing splint for parafunctional disorders, occlusal disorders and TMJ functions.

© Practice of dental, oral and facial esthetics

© The clinical practice of all aspects of Prosthodontic therapy for elderly patients.

© Implants Prosthodontics - Rehabilitation of Partial Edentulous, Complete edentulism and for craniofacial rehabilitation

© Failures in all aspects of Prosthodontics and its management and after care

© Team management for esthetics, TMJ syndrome and Maxillofacial and Craniofacial Prosthodontics

© Management of Prosthodontics emergencies, resuscitation.

© Candidate should complete the course by attending by large number and variety of patients to master the prosthodontic therapy. This includes the practice management, examinations, treatment planning, communication with patients, clinical and laboratory techniques materials and instrumentation requiring different aspects of prosthodontic therapy, Tooth and Tooth surface restoration, Restoration of root treated teeth, splints for periodontal rehabilitations and fractured jaws, complete dentures, R.P.D. FPD. Immediate dentures over dentures implant supported prosthesis, maxillofacial and body prosthesis, occlusal rehabilitation.

© Prosthetic management of TMJ syndrome

© Management of failed restorations

© Complete and submit Library Assignment 6 months prior to examination.

© Candidates should acquire complete theoretical and clinical knowledge through seminars, symposium, workshops and reading.

© Participation and presentation in seminars, didactic lectures.

© Evaluation - Internal Assessment examinations three months before University examinations.

PROSTHODONTIC TREATMENT MODALITIES

1. Diagnosis and treatment plan in prosthodontics
2. Tooth and tooth surface restorations

- Fillings
- Veneers - composites and ceramics
- Inlays- composite, ceramic and alloys

- Onlay - composite, ceramic and alloys

Management of failed restoration

- Partial crowns - % ^{m}, 4/5^{,h}, 7/8^{,h}, Vz crowns
- Pin-ledge
- Radicular crowns
- Full crowns

Management of failed restorations

	PARTIAL	**COMPLETE**
© Tooth supported	Fixed partial denture	Overdenture
©Tissue Supported	Interim partial denture	Complete denture
	Intermidiate partial denture	Immediate denture
		Immediate complete Denture
©Tooth and tissue supported	Cast partial denture	Overdenture
	Precision attachment	
©Implant supported	Cement retained	Bar attachment Screw retained
		Ball attachment Clip attachment
©Tooth and implant supported	Screw retained	
Cement retained		
©Root supported	Dowel and core	Overdenture

Pin retained

Management of failed restorations

> Distal extension prosthesis

© Tooth borne prosthesis

© Combination distal extension and tooth borne prosthesis

© Retainers for partial dentures - intra coronal, extra coronal or Para coronal intraproximal with cantilevered pontics

> Attached to cantilevered pontics

©Pontics between bridge retainers

©Attached to root coping

©Spring loaded bolts or plungers

© Ring springs

© Bolts

© Rubber device

© Slide cap attachments

© Cones crown

© Hybrid telescope

© Ring telescope

© Prefabricated cap-post system

>Precision attachments

© Intra coronal attachments

© Extra coronal attachments

© Bar - slide attachments

© Joints and hinge joint attachments

Management of failed restorations

4. Tooth and tissue defects (Maxillo- facial and Cranio-facial prosthesis)

A. Congenital Defects

a. Cleft lip and palate

Obturators

> Feeding

> Surgical

© Immediate

© Delayed

> Interim

> Definitive

> implant supported prosthesis

b. Pierre Robin Syndrome

c. Ectodermal dysplasia

d. Hemifacial microsomia

e. Anodontia

f. Oligodontia

g. Malformed teeth

> cast partial denture implant supported dentures complete dentures

B. Acquired defects

a. Head and neck cancer patients - prosthodontic splints and stents

b. Restoration of facial defects

-Auricular prosthesis

- Nasal prosthesis

-Orbital prosthesis

- Craniofacial implants

c. Midfacial defects

d. Restoration of maxillofacial trauma

e. Hemimandibulectomy

f. Maxillectomy

g. Lip and cheek support prosthesis

h. Ocular prosthesis

i. Speech and Velopharyngeal prosthesis

j. Laryngectomy aids

k. Esophageal prosthesis

I. Nasal stents

m. Tongue prosthesis

n. Burn stents

o. Auditory inserts

p. Trismus appliances

q. Prosthesis for lagopthalmos of the eye

Management of failed restorations.

5. T.M.J and Occlusal disturbances

a. Occlusal equilibration

b.Splints

-Diagnostic

-Repositioners / Deprogrammers

c. Anterior bite plate

d. Posterior bite plate

e. Bite raising appliances

f. Occlusal rehabilitation

g. Behavioral and psychological care for the cancer patient Management of failed restorations

6. Esthetic/Smile designing

a. Laminates / Veneers

b. Tooth contouring (peg laterals, malformed teeth)

c. Tooth replacements

d. Team management

Management of failed restorations

7. Psychological therapy

a. Questionnaires

b Charts, papers, photographs

c. Models

d Case reports

e. Patient counseling

f. Behavioral modifications

g Referrals

-

8. Geriatric Prosthodontics

a. Prosthodontics for the elderly

b. Behavioral and psychological counseling

c. Removable Prosthodontics

d. Fixed Prosthodontics

e. Implant supported Prosthodontics

f. Maxillofacial Prosthodontics

g. Psychological and physiological considerations

Management of failed restorations

9. Preventive measures

a. Diet and nutrition modulation and counseling

a. Referrals

THE BENCH WORK SHOULD BE COMPLETED BEFORE THE CLINICAL WORK STARTS DURING THE FIRST YEAR OF THE M.D.S COURSE

I. Complete dentures

1. Arrangements in adjustable articulator for

© Class I

© Class II

© Class III

© Cross bite

2. Various face bow transfer to adjustable articulators

3. Processing of characterized anatomical denture

II. Removable partial denture

1. Design for Kennedy's Classification (Survey, block out and design)

a. Class I

b. Class II

c. Class III

d. Class IV

2. Designing of various components of RPD

3. Wax pattern on refractory cast

a. Class I

b. Class II

c. Class III

d. Class IV

4- Casting and finishing of metal frameworks

5- Acrylisation on metal frameworks for

Class I

Class III with modification

III. Fixed Partial Denture

- © Preparation of ivory teeth/natural teeth
- © Fvc for metal
- © FVC for ceramic
- © *Porcelain jacket crown*
- © Acrylic jacket crown
- © PFM crown
- © 3/4th (canine, premolar and central)
- © 7/8th posterior
- © Proximal half crown
- © Inlay - Class I, II, V
- © Onlay-Pin ledged, pinhole
- © Laminates

2. Preparation of different die system
3. Fabrication of wax pattern by drop wax build up technique

- © Wax in increments to produce wax coping over dies of tooth preparations on substructures.

- © 3-unit wax pattern (maxillary and Mandibular)
- © Full mouth
- © Wax additive technique

4. Pontic design in wax pattern

- © Ridge lap Sanitary
- © Modified ridge lap
- © Modified sanitary
- © Spheroidal or conical

5. Fabrication of metal framework

- © Full metal bridge for posterior (3 units)
- © Coping for anterior (3 unit)
- © Full metal with acrylic facing
- © Full metal with ceramic facing

- © Adhesive bridge for anterior
- © Coping for metal margin ceramic crown
- © Pin ledge crown

6. Fabrication of crowns

- © Post and core
- © All ceramic crowns with characterized
- © Metal ceramic crowns with characterized
- © Full metal crown
- © Precious metal crown

7. Laminates
   - © Composites with characterized
   - © Ceramic with characterized
   - © Acrylic

8. Preparation for composites
   - © Laminates
   - © Crown
   - © Inlay
   - © Onlay
   - © Class 1
   - © Class II
   - © Class III
   - © Class IV
   - © Fractured anterior tooth

IV. Maxillofacial prosthesis

1. Eye
2. Ear
3. Nose
4. Face
5. Body
6. Cranial

7. Hemimaxillectomy
8. Hemimandibulectomy
9. Finger prosthesis
10. Guiding flange
11. Obturator

V. Implant supported prosthesis

1. Step by step procedures - laboratory phase

VI. Other exercises

1. TMJ splints - stabilization appliances, maxillary and Mandibular repositioning appliances
2. Anterior disclusion appliances
3. Chrome cobalt and acrylic resin stabilization appliances
4. Modification in accommodation in irregularities in dentures
5. Occlusal splint
6. Periodontal splint
7. Precision attachments - custom made
8. Over denture coping
9. Full mouth rehabilitation (by drop wax technique, ceramic build up)
10. TMJ appliances -stabilization appliances Essential Skills

* Key

O -Washes up and observes. A-Assists a senior

PA- performs procedure under the direct supervision of a senior specialist PI- Performs independently

PROCEDURE	***CATEGORY***			
	0	*A*	*PA*	*PI*
"Tooth and tooth surface restorationa)	2	2	2	10
Composites - fillings, laminates, inlay, onlayb) Ceramics -	2	2	2	10
laminates, inlays, onlaysc) Glass lonomer	1	1	1	10
CROWNS				
FVC for metal	1	2	2	10
FVC for ceramic	1	2	2	10
Precious metal crown	1	-	1	5

Galvanoformed crown	-	-	1	1
3/4th crowns (premolars, canines and centrals)	1	-	-	5
7/8th posterior crown	1	-	-	5
Proximal half crown	1	-	-	5
Pinledge and pinhole crowns	1	-	-	5
Telescopic crowns	1	-	-	5

Intraradicular crowns (central, lateral, canine, premolar, and molar)	1	-	-	5
Crown as implant supported prosthesis	1		1	5

FIXED PARTIAL DENTURES

Cast porcelain(3 unit)	1	-	-	5
Cast metal-precious and non precious (3 unit posterior)	1	-	-	5
Porcelain fused metal (anterior and posterior)	1	1	1	10
Multiple abutment- maxillary and mandibular full arch	1	1	1	5
Incorporation of custom made and readymade precision joint or Attachment	1	1	1	4
Adhesive bridge for anterior/ posterior	1	-	1	10
Metal fused to resin anterior FPD	-	-	1	5

Interim provisional restorations (crowns and FPDs)	*1*	*1*	1	*10*
Immediate fixed partial dentures (interim)	*1*	-	-	5
Fixed prosthesis as a retention and rehabilitation	*1*	*1*	-	5
for acquired and congenital defects – maxillofacial	-	-	-	-

Prosthetics	-	-	-	-
Implant supported prosthesis	*1*	-	*1*	*1*
Implant - tooth supported prosthesis	*1*	-	*1*	*1*
REMOVABLE PARTIAL DENTURE	-	-	-	-
Provisional partial denture prosthesis	*1*	*1*	1	*10*
Cast removable partial denture (for Kennedy's Applegate classification with modification)	*1*	1	1	*6*
Removable bridge with precision attachments and telescopic crowns for anterior and posterior	1	1	2	*4*
Immediate RPD	*1*	*1*	*1*	*5*
Partial denture for medically compromised and handicapped patients	1	1	1	*5*
COMPLETE DENTURES	-	-	-	-
Neurocentric occlusion & characterized prosthesis	-	-	*1*	*5*
Anatomic characterized prosthesis (by using semi adjustable articulator)	-	-	*1*	*25*
Single dentures	-	-	*1*	*5*
Overlay dentures	-	-	*1*	*5*
Interim complete dentures as a treatment prosthesis for abused denture supporting tissues	-	-	*1*	*5*
Complete denture prosthesis (for abnormal ridge relation, ridge form and ridge size)	-	-	*1*	*5*
Complete dentures for patients with TMJsyndromes	-	-	*1*	*5*
Complete dentures for medically compromised and handicapped patients	-	-	*1*	*5*
GERIATRIC PATIENTS	-	-	-	-
Tooth and tooth surface restorations, crowns, fixed prosthesis, removable prosthesis	-	-	*1*	*5*
IMPLANT SUPPORTED COMPLETE PROSTHESIS	-	-	-	-
Implant supported complete prosthesis (maxillary and Mandibular)	-	-	*1*	*1*

MAXILLOFACIAL PROSTHESIS				
Guiding flange and obturators	-	-	1	4
Speech and palatal lift prosthesis	-	-	1	2
Eye prosthesis	-	-	1	2
Ear prosthesis	-	-	1	2
Nose prosthesis	-	-	1	2
Face prosthesis	-	-	'-	1
Hemimaxillectomy	-	-	1	2
Hemimandibulectomy	-	-	1	2
Cranioplasty	-	-	1	1
Finger/ hand, foot	-	-	1	2
Body prosthesis	-	-	1	1
Management of burns, scars	-	-	-	1
TMJ SYNDROME MANAGEMENT				
Splints - periodontal, teeth, jaws	-	-	1	4
TMJ supportive and treatment prosthesis	-	-	1	1
Stabilization appliances for maxilla and mandible with freedom to move from IP to CRCP	-	-	-	1
In IP without the freedom to move to CRCP	-	-	-	1

Repositioning appliances, anterior disclusion	-	-	-	1
Chrome cobalt and acrylic resin stabilization appliances for modification to accommodate for the irregularities in the dentition				2
Occlusal adjustment and occlusal equilibrium	-	-	1	4
FULL MOUTH REHABILITATION				
Full mouth rehabilitation – occlusion	-	-	1	4
Full mouth rehabilitation - restoration of esthetics and function of stomatognathic system	-		1	4
INTER-DISCIPLINARY TREATMENT MODALITIES				
Inter-disciplinary management - restoration of Oro craniofacial defects for esthetics, phonation, mastication and psychological comforts			1	2
MANAGEMENT OF FAILED RESTORATION				
Tooth and tooth surface restorations	-	-	-	5
Removable prosthesis	-	-	-	10
Crowns and fixed prosthesis				5
Maxillofacial prosthesis	-	-	-	2
Implant supported prosthesis	-	-	-	1
Occlusal rehabilitation and TMJ syndrome	-	-	-	2
Restoration failure of psychogenic origin	-	-	-	5
Restoration failure to age changes	-		-	2

UNIVERSITY SCHEME OF EXAMINATION

M.D.S. Degree examinations in any branch of study shall consist of dissertation, written paper (Theory) Part I at the end of Ist year and Part II at the end of 3 years Practical/Clinical and Viva voce.

Theory: Part-I: Basic Sciences Paper - **100 Marks**

Part-II: Paper-I, Paper-II & Paper-III - **300 Marks** (100 Marks for each Paper)

Written examination shall consist of Basic Sciences (Part-I) of three hours duration shall be conducted at the end of First year of MDS course. Part-II Examination shall be conducted at the end of Third year of MDS course.

Part-I : Applied Basic Sciences: Applied Anatomy, embryology, growth and development Genetics, Immunology, anthropology, Physiology, nutrition & Biochemistry, Pathology & Microbiology, virology, Applied pharmacology, Research Methodology and bio statistics,. Applied Dental anatomy & histology, Oral pathology & oral Microbiology, Adult and geriatric psychology. Applied dental materials.

Part-II Examination shall consist of Paper-I, Paper-II and Paper-III, each of three hours duration.

Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each.

Paper-III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

DISTRIBUTION OF MARKS:

Theory:

(1) Part I University Examination (100 Marks):-

There shall be 10 questions of 10 marks each (Total of 100 Marks)

(2) Part II (3 papers of 100 Marks):-

(i) Paper-I: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(ii) Paper-II: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(iii) Paper III: 2 out of 3 essay questions (50 x 2 = 100 Marks)

Practical and Clinical Examination : 200 Marks

Viva-voce and Pedagogy : 100 Marks

A. Practical / Clinical Examination : 200 **Marks**

Examination shall be for three days. If there are more than 6 candidates, it may be extended for one more day. Each candidate shall be examined for a minimum of three days, six hours per day including viva voce

1. Presentation of treated patients and records during their three year training period.

- 25 Marks

2. Present actual treated patients CD. Prosthesis and Insertion - 90 Marks

1. Discussion on treatment plan and patient review -10 marks
2. Tentative jaw relation records - 5 marks
3. Face Bow - transfer - 5 marks
4. Transferring it on articulators - 5 marks
5. Extra oral tracing and securing centric and protrusive/lateral. - 25 marks
6. Transfer in on articulator. - 5 marks
7. Selection of teeth - 5 marks
8. Arrangement of teeth -15 marks
9. Waxedup denture trial -10 marks
10. Fit, insertion and instruction of previously processed

characterized, anatomic complete denture prosthesis - 5 marks All steps will include chair side, lab and viva voce

3. Fixed Partial Denture **- 50 Marks**

a. Case discussion and selection of patients for F.P.D. - 5 marks

b. Abutment preparation isolation and fluid control - 25 marks

c. Gingival retraction and impressions -10 marks

d. Cementation of provisional restoration -10 marks

4. Removable Partial Denture **- 35 Marks**

B. Viva Voce **100 Marks**

i. Viva-Voce examination: 80 marks

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes

presentation and discussion on dissertation also.

ii. Pedagogy Exercise: 20 marks

A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes.

PERIODONTOLOGY

Objectives

The following objectives are laid out to achieve the goals of the course

Knowledge

© Discuss historical perspective to advancement in the subject proper and related topics

© Describe etiology, pathogenesis, diagnosis and management of common periodontal diseases with emphasis on Indian population

© Familiarize with the biochemical, microbiologic and immunologic genetic aspects of periodontal pathology

© Describe various preventive periodontal measures

© Describe various treatment modalities of periodontal disease from historical aspect to currently available ones

© Describe interrelationship between periodontal disease and various systemic conditions

© Describe periodontal hazards due to iatrogenic causes and deleterious habits and prevention of it

© Identify rarities in periodontal disease and environmental/ Emotional determinates in a given case

© Recognize conditions that may be outside the area of his Speciality/competence and refer them to an appropriate Specialist

© Decide regarding non-surgical or surgical management of the case

© Update him by attending course, conferences and seminars relevant to periodontics or by self-learning process.

© Plan out/ carry out research activity both basic and clinical aspects with the aim of publishing his/her work in scientific journals

© Reach to the public to motivate and educate regarding periodontal disease, its prevention and consequences if not treated

© Plan out epidemiological survey to assess prevalence and incidence of early onset periodontitis

and adult periodontitis in Indian population (Region wise)

© Shall develop knowledge, skill in the science and practice of Oral Implantology

© Shall develop teaching skill in the field of Periodontology and Oral Implantology

SKILL

©*Take a* proper clinical history, thorough examination intra orally, extra orally, medical history evaluation, advice essential diagnostic procedures and interpret them to come to a reasonable diagnosis

©Effective motivation and education regarding periodontal disease and maintenance after the treatment

©Perform both non-surgical & education regarding periodontal disease, maintenance after the treatment

©Perform both non-surgical and surgical procedures independently

©Provide Basic Life Support Service (BLS)

Human values, ethical practice & communication abilities

© Adopt ethical principles in all aspects of treatment modalities, Professional honesty & integrity are to be fostered. Develop Communication skills to make awareness regarding periodontal disease Apply high moral and ethical standards while carrying out human or animal research, Be humble, accept the limitations in his/her knowledge and skill, and ask for help from colleagues when needed, Respect patients rights and privileges, including patients right to information and right to seek a second opinion.

Course Contents

Applied Anatomy:

1. Development of the Periodontium
2. Micro and Macro structural anatomy and biology of the periodontal tissues
3. Age changes in the periodontal tissues
4. Anatomy of the Periodontium
   - ©Macroscopic and microscopic anatomy
   - ©Blood supply of the Periodontium
   - ©Lymphatic system of the Periodontium
   - ©Nerves of the Periodontium
5. Temporomandibular joint, Maxillae and Mandible

6. Cranial nerves (5,7,9,11,12)

7. Tongue, oropharynx

8. Muscles of mastication

Physiology

1. Blood

2. Respiratory system - Acknowledge of the respiratory diseases which are a cause of periodontal diseases (periodontal Medicine)

3. Cardiovascular system

h. Blood pressure

i. Normal ECG

j. Shock

4. Endocrinology - hormonal influences on Periodontium

5. Gastrointestinal system

a. Salivary secretion - composition, function & regulation

b. Reproductive physiology

i. Hormones - Actions and regulations, role in periodontal disease

ii. Family planning methods

6. Nervous system

a. Pain pathways

b. Taste - Taste buds, primary taste sensation & pathways for sensation

Biochemistry

1. Basics of carbohydrates, lipids, proteins, vitamins, proteins, enzymes and minerals

2. Diet and nutrition and periodontium

3. Biochemical tests and their significance

4. Calcium and phosphorus

Pathology

1. Cell structure and metabolism

2. Inflammation and repair, necrosis and degeneration

3. Immunity and hypersensitivity

4. Circulatory disturbances - edema, hemorrhage, shock, thrombosis, embolism, infarction and hypertension

5. Disturbances of nutrition

6. Diabetes mellitus

7. Cellular growth and differentiation, regulation

8. Lab investigations

9. Blood

Microbiology:

1. General bacteriology
    a. Identification of bacteria
    b. Culture media and methods
    c. Sterilization and disinfection
2. Immunology and Infection
3. Systemic bacteriology with special emphasis on oral microbiology - staphylococci, genus actinomyces and other filamentous bacteria and actinobacillus actinomycetumcomitans
4. Virology
    a. General properties of viruses
    b. Candidasis

6. Applied microbiology

7. Diagnostic microbiology and immunology, hospital infections and management

Pharmacology:

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

b. Antipsychotics
c. Antidepressants
d. Anxiolytic drugs
e. Sedatives
f. Antiepileptics
g. Antihypertensives
h. Antianginal drugs
i. Diuretics
j. Hormones
k. Pre-anesthetic medications

4. Drugs used in Bronchial asthma cough

5. Drug therapy of
   a. Emergencies
   b. Seizures
   c. Anaphylaxis
   d. Bleeding
   e. Shock
   f. Diabetic ketoacidosis
   g. Acute addisonian crisis

6. Dental Pharmacology

   a. Antiseptics
   b. Astringents
   c. Sialogogues
   d. Disclosing agents
   e. Antiplaque agents

7. Fluoride pharmacology

Biostatistics:

© Introduction, definition and branches of biostatistics

© Collection of data, sampling, types, bias and errors

© Compiling data-graphs and charts

© Measures of central tendency (mean, median and mode), standard deviation variability

© Tests of significance (chi square test't'test and Z-test)

© Null hypothesis

Etiopathogenesis

1. Classification of periodontal diseases and conditions
2. Epidemiology of gingival and periodontal diseases
3. Defense mechanisms of gingiva
4. Periodontal microbiology
5. Basic concepts of inflammation and immunity
6. Microbial interactions with the host in periodontal diseases
7. Pathogenesis of plaque associated periodontal diseases
8. Dental calculus
9. Role of iatrogenic and other local factors

10.Genetic factors associated with periodontal diseases 11.Influence of systemic diseases and disorders of the periodontium 12: Role of environmental factors in the etiology of periodontal disease

13.Stress and periodontal diseases

14. Occlusion and periodontal diseases

15. Smoking and tobacco in the etiology of periodontal diseases 16.AIDS and periodontium

17.Periodontal medicine 18.Dentinal hypersensitivity

Clinical and Therapeutic Periodontology and Oral Implantology Please note:

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

I. *GINGIVAL DISEASES*

1. Gingival inflammation
2. Clinical features of gingivitis
3. Gingival enlargement
4. Acute gingival infections

5. Desquamative gingivitis and oralmucous membrane diseases
6. Gingival diseases in the childhood

II. PERIODONTAL DISEASES

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

Orthodontic

-Endodontic

9. Periodontic considerations

III. TREATMENT OF PERIODONTAL DISEASES

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

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

B. Periodontal instrumentation

1. Instrumentation

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

C. Periodontal therapy

1. Preparation of tooth surface
2. Plaque control
3. Anti microbial and other drugs used in periodontal therapy and wasting diseases of teeth
4. Periodontal management of HIV infected patients
5. Occlusal evaluation and therapy in the management of periodontal diseases
6. Role of orthodontics as an adjunct to periodontal therapy
7. Special emphasis on precautions and treatment for medically compromised patients
8. Periodontal splints
9. Management of dentinal hypersensitivity

D. Periodontal surgical phase - special emphasis on drug prescription

1. General principles of periodontal surgery
2. Surgical anatomy of periodontium and related structures
3. Gingival curettage
4. Gingivectomy technique
5. Treatment of gingival enlargements
6. Periodontal flap
7. Osseous surgery (resective and regenerative)

8. Furcation; Problem and its management

9. The periodontic - endodontic continuum 10.Periodontic plastic and esthetic surgery 11.Recent advances in surgical techniques

E.Future directions and controversial questions in periodontal therapy

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

E. Periodontal maintenance phase

1. Supportive periodontal treatment
2. Results of periodontal treatment

IV. ORAL IMPLANTOLOGY

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

V. MANAGEMENT OF MEDICAL EMERGENCIES IN PERIODONTAL PRACTICE Teaching / learning Activities

© Seminars: - A minimum of 15 seminars to be presented by each student during the P.G. course (At least 5 Seminars per year)

© Journal clubs: - a minimum of 25 Journal articles to be reviewed by each student during the P.G. course

© Interdepartmental Seminars: - Each P.G. student should present at least t seminar in an Interdepartmental meeting during the P.G course. Such meetings maybe held at least once every month

© Library Assignment: - one to be presented at the end of 18 months of the course.

Academic Activities:

I Year

Submission of synopsis for Dissertation - within 6 months from the start of the course

II Year

Scientific Paper presentation at the conferences by the end of the 2nd year

III Year

Scientific Paper/ Poster presentation at conferences

-

Submission of Dissertation - 6 months before completion of III year

Skills First year

Pre - Clinical work

Dental

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

Medical

1. Basic diagnostic microbiology and immunology, collection and handling sample, culture techniques.
2. Basic understanding of immunological diseases
3. Interpretation of various biochemical investigations
4. Practical training and handling medical emergencies and basic life support devices
5. Basic Biostatistics - Surveying and data analysis Clinical work

1. Applied periodontal indices	10 CASES
2. Scaling and root planning (SRP)	
a. Hand	15 CASES
b. Ultrasonic	15 CASES
3. Curettage	10 CASES
4. Gingivectomy	20 CASES
5. Ginqivoplasty	10 CASES

Clinical Work

2. Case history and treatment planning
3. Local Drug Delivery techniques
4. Periodontal surgical procedures
   - -Pocket therapy
   - -Muco-gingival surgeries
   - -Implants (2 implants)

-Management of perio endo problems

10 CASES	5 CASES
5. Occlusal adjustments	10 CASES
6. Perio splints	10 CASES

Third Year

Clinical work

1. Regenerative techniques

- Using various graft and barrier membranes

2. Record, maintenance and follow up of all treated cases including implants **Assessment examinations:** - In addition to the regular evaluation, log book etc., assessment examination should be conducted once every six months & progress of the student monitored

Note: The number of cases mentioned are minimum number to be performed by each candidate.

Submission of Synopsis for Dissertation should be done within 6 months of the commencement of the course.

Submission of two copies of Library Assignments at the end of 1 and 2nd year Submission of pre-clinical work as scheduled. Submission of Dissertation - 6 months before completion of III year. Maintenance of Work Diary/Log book as prescribed by RGUHS.

Monitoring Learning Progress

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

UNIVERSITY SCHEME OF EXAMINATION

M.D.S. Degree examinations in any branch of study shall consist of dissertation, written paper (Theory) Part I at the end of Ist year and Part II at the end of 3 years Practical/Clinical and Viva voce.

Theory: Part-I: Basic Sciences Paper - **100 Marks**

Part-II: Paper-I, Paper-II & Paper-III - **300 Marks** (100 Marks for each Paper)

Written examination shall consist of Basic Sciences (Part-I) of three hours duration shall be conducted at the end of First year of MDS course. Part-II Examination shall be conducted at the end of Third year of MDS course.

Part-I : Applied Basic Sciences: Applied Anatomy, embryology, growth and development Genetics, Immunology, anthropology, Physiology, nutrition & Biochemistry, Pathology & Microbiology, virology, Applied pharmacology, Research Methodology and bio statistics, Applied Dental anatomy & histology, Oral pathology & oral Microbiology, Adult and geriatric psychology. Applied dental materials.

Part-II Examination shall consist of Paper-I, Paper-II and Paper-III, each of three hours duration.

Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each.

Paper-III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

DISTRIBUTION OF MARKS:

Theory :

(1) Part I University Examination (100 Marks):-

There shall be 10 questions of 10 marks each (Total of 100 Marks)

(2) Part II (3 papers of 100 Marks):-

(i) Paper-I: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(ii) Paper-II: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(iii) Paper III: 2 out of 3 essay questions (50 x 2 = 100 Marks)

B. Practical / Clinical Examination : 200 Marks

The clinical examination shall be of two days duration

1st day

Case discussion

- Long case- One
- Short case - One

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

2nd day

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

All the examiners shall participate in all the aspects of clinical examinations / Viva Voce

Distribution of Marks for Clinical examination (recommended)

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

C. Viva Voce: 100 Marks

i. Viva- Voce examination: 80 marks

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

ii. Pedagogy: 20 marks

A topic is given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes

Topic be given to each candidate in the beginning of clinical examination. He/she is asked make a presentation on the topic for 8-10 minutes.

ORAL AND MAXILLOFACIAL SURGERY

Objective :

The training program in Oral and Maxillofacial Surgery is structured to achieve the following four objectives-

© Knowledge

© Skills

©Attitude

© Communicative skills and ability

Knowledge:

© To have acquired adequate knowledge and understanding of the etiology, patho physiology and diagnosis, treatment planning of various common oral and Maxillofacial surgical problems both minor and major in nature.

© To have understood the general surgical principles like pre and post surgical management, particularly evaluation, post surgical care, fluid and electrolyte management, blood transfusion and post surgical pain management.

© Understanding of basic sciences relevant to practice or oral and maxillofacial surgery.

© Able to identify social, cultural, economic, genetic and environmental factors and their relevance to disease process management in the oral and Maxillofacial region.

© Essential knowledge of personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste keeping in view the high prevalence of hepatitis and HIV.

Skill

© To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedures and order relevant laboratory tests and interpn them and to arrive at a reasonable diagnosis about the surgical condition.

© To perform with competence minor oral surgical procedures and common maxillofacial surgery. To treat both surgically and medically (or by other means of the oral and Maxillofacial and the related area).

© Capable of providing care for maxillofacial surgery patients.

Attitude:

© Develop attitude to adopt ethical principles in all aspect of surgical practice, professional honesty and integrity are to be fostered. Surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient.

© Willing to share the knowledge and clinical experience with professional colleagues.

© Wiling to adopt new techniques of surgical management developed from time to time based on scientific research which are in the best interest of the patient

© Respect patient's right and privileges, including patients right to information and right to seek a second opinion.

© Develop attitude to seek opinion from an allied medical and dental specialists as and when required.

Communication skills:

© Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular surgical problem and obtain a true informed consent from them for the most appropriate treatment available at that point of time

© Develop the ability to communicate with professional colleagues.

© Develop ability to teach undergraduates.

Course content:

The program outline addresses both the knowledge needed in Oral and Maxillofacial Surgery and allied medical specialties in its scope. A minimum of three years of formal training through a graded system of education as specified will equip the trainee with skill and knowledge at its completion to be able to practice basic oral and Maxillofacial surgeon competently and have the ability to intelligently pursue

further apprenticeship towards advance Maxillofacial surgery.

The topics are considered as under:-

© Basic sciences

© Oral and Maxillofacial surgery

© Allied specialties

Applied Basic Sciences:

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

© Anatomy

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

© Physiology

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

©Biochemistry

General principles governing the various biological principles of the body, such as osmotic pressure,

electrolytes, dissociation, oxidation, reduction etc; general composition *of* body, intermediary metabolism, carbohydrate, proteins, lipids, enzymes, vitamins, minerals and antimetabolites.

© General Pathology

Inflammation - Acute and chronic inflammation, repair and regeneration, necrosis and gangrene, role of component system in acute inflammation, role of arachictonic acid and its metabolites in acute inflammation, growth factors in acute inflammation role of NSAIDS in inflammation, cellular changes in radiation injury and its manifestation; wound management - Wound healing factors influencing healing; properties if suture materials, appropriate uses of sutures; hemostasis - role of endothelium in thrombogenesis; arterial and venous thrombi, disseminated intravascular coagulation; Hypersensitivity; Shock and pulmonary failure: types of shock, diagnosis, resuscitation, pharmacological support, ARDS and its causes and prevention, ventilation and support, Neoplasm I | of tumors, Carcinogens and Carcinogenesis, grading and staging of tumors, various laboratory investigation.

©General microbiology

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

© Oral pathology and microbiology:

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

©Pharmacology and therapeutics:

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

©Computer science

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

ORAL AND MAXILLOFACIAL SURGERY:

© Evolution of Maxillofacial surgery.

© Diagnosis, history taking, clinical examination, investigations.

© Informed consent/medico-legal issues.

© Concept of essential drugs and rational use of drugs.

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

© Principles of surgical audit - understanding the audit of process and outcome. Methods adopted for the same Basic statistics.

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

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

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

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

© Surgical sutures, drains

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

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

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

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

© Anesthesia - stages of Anesthesia, pharmacology of inhalation, intravenous and regional anesthetics, muscle relaxants.

© Facial pain; Facial palsy and nerve injuries.

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

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

© Clinical oral surgery - all aspects of dento alveolar surgery

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

© Temporomandibular joint disorders - TMJ disorders and their sequelae need e> evaluation, assessment and management. It is preferable to be familiar with diagr and therapeutic arthroscopic surgery procedures.

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

© Reconstructive oral and maxillofacial surgery - hard tissue and so reconstruction.

© Anesthesia - Stages of anesthesia, pharmacology of inhalation, intravenous and regional anesthesia, muscle relaxants.

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

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

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

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

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

© Distraction osteogenesis in maxillofacial region.

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

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

© Aesthetic facial surgery - detailed knowledge of structures of facial neck including skin and

underlying soft tissues, diagnosis and treatment planning of deformities and conditions affecting facial kin, underlying facial muscles, bone, eyelids, external ear etc. surgical management of post acne scaring, face lift, blepharoplasty, otoplasty, facial bone recountouring etc.

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

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

© Micro vascular surgery.

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

© Maxillofacial radiology/radio diagnosis

© Other diagnostic methods and imaging techniques

Allied specialties:

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

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

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

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

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

© Anesthesia: Evaluation of patients for GA techniques and management of emergencies, various IV sedation techniques

Academic Clinical programme (applicable for all three years):

© Seminars to be presented attended once in a week.

© Journal clubs (departmental and interdepartmental) to be conducted once in fifteen days.

© Departmental and interdepartmental discussions to be held once in a month.

© Minimum 2 scientific papers should be presented.

© Every candidate shall maintain a logbook to record his/hers wok or participate all activities such as journal clubs, seminars, CDE programs etc. this wove| scrutinized and certified by the head of the departmental and head of the institute and presented to the university every year

Year by year programme: I Year First 6 Months:

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

Second six Months (rotation and postings in other department):

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

II Year

Minor oral surgery and higher surgical training Submission of library assignment by the end of first term

Examination on minor oral surgical procedures - one paper of three hours duration to be conducted by the college.

III Year

Maxillofacial surgery, submission of dissertation in the first term, i.e. six months before the final examination to the university.

Examination of three hours duration three months before the final examination to be conducted by the college. It is desirable to enter general surgical skills and operative procedure that are observed, assisted or performed in the log book in the format as given by RGUHS in the revised ordinance governing MDS degree course.

Final examination at the end of the third

SL	Procedure	Category	Year	Number

No				
	Injection I.M. and I.V.	PI	I,II	50,20
2	Minor suturing and removal of sutures	Pi	I	N,A
3	Incision & drainage of an abscess	PI	I	10
	Surgical extraction	PI	I	15
5	Impacted teeth	PI, PA	I, II	20,10
6	Pre prosthetic surgery-	PI		
	a) corrective procedures b) ridge extension c) ridge reconstruction	PI PA A	I I,II II,III	15 3 3
7	OAF closure	PI, PA	I, II	3,2
	Cyst enuleation	Pl.PA	I, H	5,5
	Mandibular fractures	PI,PA	I,II	10,10
10	Peri-apical surgery	PI,PA	I	5
11	Infection management	PI,PA	I, II	N,A
12	Biopsy procedures	PI	I, H	N,A
13	Removal of salivary calculi	PA	I, H	3,5
14	Benign tumors	PA, A	II, III	3,3
15	mid face fractures	PA, A	II, III	3,5
16	Implants	PA.A	II, III	5,5
17	Tracheotomy	PA.A	II, III	2,2
18	**Skin grafts**	**PA**	**III**	**3,5**
19	**Orthognathic surgery**	**PA,A**	**II, III**	**3**
20	Harvesting bone & cartilage grafts a) Iliac crest b) Rib c) Calvarial d) Fibula	PA A A A,0		3 2 2
21	T.M. Joint surgery	PA, A	II, I,	1
22	Jaw resections	PA, A	III, II	3,3

23	Onco surgery	A,0	III, III	3,3
24	Micro vascular anastomosis	A,0	III	5,10
25	Cleft lip & palate	PA,A	II, III	10,15
26	Distraction osteogenesis	A,0	II, III	2,3
27	Rhinoplasty	A,0	III	3,5
28	Access osteotomies and base of skull surgeries	A,0	III	1,3

ORAL AND MAXILLOFACIAL SURGERY

Paper I: Applied Basic Sciences: Applied Anatomy, Physiology, Biochemistry, General and Oral Pathology and Microbiology and Pharmacology Applied Anatomy

1. Surgical anatomy of the scalp, temple and face
2. Anatomy of the triangles of neck and deep structures of the neck
3. Cranial and facial bones and its surrounding soft tissues with its applied aspects in maxillofacial injuries.
4. Muscles of head and neck
5. Arterial supply, venous drainage and lymphatics of head and neck
6. Congenital abnormalities of the head and neck
7. Surgical anatomy of the cranial nerves
8. Anatomy of the tongue and its applied aspects
9. Surgical anatomy of the temporal and infratemporal regions
10. Anatomy and its applied aspects of salivary glands, pharynx, thyroid and parathyroid gland, larynx, trachea esophagus
11. Tooth eruption, morphology, and occlusion.
12. Surgical anatomy of the nose.
13. The structure and function of the brain including surgical anatomy of intra cranial venous sinuses.
14. Autonomous nervous system of head and neck
15. Functional anatomy of mastication, deglutition, speech, respiration and circulation 16.Development of face, paranasal sinuses and associated structures and their anomalies **17.**TMJ: surgical anatomy and function

Physiology: 1.Nervous system

© Physiology of nerve conduction, pain pathway, sympathetic and parasympathetic nervous system, hypothalamus and mechanism of controlling body temperature

2. Blood

©Composition

© Haemostasis, various blood dyscrasias and its management of patients with the same

© Hemorrhage and its control

© Capillary and lymphatic circulation.

© Blood grouping, transfusing procedures.

3. Digestive system

© Saliva - composition and functions of saliva

© Mastication deglutition, digestion, assimilation

© Urine formation, normal and abnormal constituents

4. Respiration

© Control of ventilation anoxia, asphyxia, artificial respiration

© Hypoxia - types and management

5. Cardiovascular System

© Cardiac cycle,

© Shock

© Heart sounds,

© Blood pressure,

© Hypertension:

6. Endocrinology

© General endocrinal activity and disorder relating to thyroid gland,

© Parathyroid gland, adrenal gland, pituitary gland, pancreas and gonads:

© Metabolism of calcium

7. Nutrition

© General principles balanced diet, effect of dietary deficiency, protein malnutntton, Kwashiorkor,

Marasmus:

© Fluid and Electrolytic balance in maintaining haemostasis and significance in minor and major surgical procedures

Biochemistry

General principles governing the various biological activities of the body, such as osmotic pressure, electrolytes, dissociation, oxidation, reduction etc. General composition of the body
Intermediary metabolism
Carbohydrates, proteins, lipids, and their metabolism Nucleoproteins, nucleic acid and nucleotides and their metabolism Enzymes, vitamins and minerals Hormones
Body and other fluids. Metabolism of inorganic elements. Detoxification in the body. Antimetabolites.

Pathology:

1. **Inflammation-**

© Repair and regeneration, necrosis and gangrene

© Role of component system in acute inflammation,

© Role of arachidonic acid and its metabolites in acute inflammation,

© Growth factors in acute inflammation

© Role of molecular events in cell growth and intercellular signaling cell surface receptors

© Role of NSAIDs in inflammation,

© Cellular changes in radiation injury and its manifestation:

2. **Haemostasis**

© Role of endothelium in thrombogenisis,

© Arterial and venous thrombi,

© Disseminated Intravascular coagulation

3. **Shock:**

© Pathogenesis of hemorrhagic, neurogenic, septic, cardiogenic shock

© Circulatory disturbances, ischemia hyperemia, venous congestion, eden infarction

4. **Chromosomal abnormalities**:

© Marians Syndrome, Ehler's Danlos Syndrome, Fragile X- Syndrome

5. **Hypersensitivity:**

© Anaphylaxis, type 2 hypersensitivity, type 3 sensitivity and cell mediated reaction. And its clinical importance, systemic lupus erythematosus.

© Infection and infective granulomas.

6. **Neoplasia:**

© Classification of tumors.

© Carcinogenesis and carcinogen- chemical, viral and microbial

© Grading and staging of cancers, tumor Angiogenesis, Paraneoplastic syndrome, spread of tumors.

© Characteristics of benign and malignant tumors

7. Others:

© Sex linked a gamma globulinemia.

© AIDS

© Management of immune deficiency patients requiring surgical procedures

© De George Syndrome

C Ghons complex, post primary pulmonary tuberculosis - pathology and pathogenesis.

8. Oral Pathology:

© Developmental disturbances of oral and Para oral structures

© Regressive changes of teeth.

© Bacterial, viral and mycotic infections of oral cavity

© Dental caries,, diseases of pulp and periapical tissues

© Physical and chemical injuries of the oral cavity

© Oral manifestations of metabolic and endocrinal disturbances

© Diseases of jawbones and TMJ

© Diseases of blood and blood forming organs in relation ot oral cavity

© Cysts of the oral cavity © Salivary gland diseases © Role of laboratory investigations in oral surgery

9. Microbiology:

© Immunity

© Knowledge of organisms commonly associated with disease of oral cavity.

© Morphology cultural characteristics of strepto, staphylo, pneumo, gono, meningo, Clostridium group of organism, spirochetes, organisms of TB, leprosy, diphtheria, actinomycosis and moniliasis

© Hepatitis B and its prophylaxis

© Culture and sensitivity test

© Laboratory determinations

© Blood groups, blood matching, RBC and WBC count

© Bleeding and clotting time etc, smears and cultures,

© Urine analysis and cultures. Applied Pharmacology and Therapeutics:

1. Definition of terminologies used
2. Dosage and mode of administration of drugs.
3. Action and fate of drugs in the body

4. Drug addiction, tolerance and hypersensitive reactions.
5. Drugs acting on the CNS
6. General and local anesthetics, hypnotics, analeptics, and tranquilizers.
7. Chemo therapeutics and antibiotics
8. Analgesics and antipyretics
9. Antitubercular and antisyphilitic drugs. 10.Antiseptics, sialogogues and antisialogogues
11.Haematinics
12. Antidiabetics
13. Vitamins A, B-complex, C, D, E, K

MINOR ORAL SURGERY AND TRAUMA

© Principles of Surgery: Developing a surgical diagnosis, basic necessities! Surgery, Aseptic Techinque, Incisions, Flap Design Tissue handling, Haemostas dead space management, decontamination and debridment, Suturing, Oedema control, patient general health and nutrition.

© Medical Emergencies: prevention and management of altered consciousness (syncope, orthostatic hypotension, seizures, diabetes mellitus, adrenal insufficiency hypersensitivity reactions, chest discomfort, and respiratory difficulty.

1. Examination and Diagnosis: clinical history, physical and radiographic, clinical and laboratory diagnosis, oral manifestations of systemic diseases, implications systemic diseases in surgical patients.
2. Haemorrhage and Shock : applied physiology, clinical abnormalities coagulation, extra vascular hemorrhage, and hemorrhagic lesions, management secondary hemorrhage, shock.
3. Exodontia: principles of extraction, indications and contraindications, types of extraction, complications and their management, principles of elevators and elevators used in oral surgery.
4. Impaction: surgical anatomy, classification, indications and contraindications, diagnosis, procedures, complications and their management.
5. Surgical Aids to Eruption Of Teeth: surgical exposure of unerupted teeth, surgical repositioning of partially erupted teeth.
6. Transplantation of Teeth
7. Surgical Endodontics : indications and contraindications, diagnosis, procedures of periradicular surgery
8. Precedures To Impove Alveolar soft tissues: requirements, types (alveloplasty, tuberosity reduction, mylohyoid ridge reduction, genial reduction, removal of exostosis, vestibuloplasty)
9. Procedures to Improve Alveloar soft Tissues: hypermobile tissues- operative / sclerosing method, epulis fissuratum, frenectomy and frenotomy

10. Infection of Head and Neck: Odontogenic and non Odontogenic infections, factors affecting spread of infection, diagnosis ad differential diagnosis, management of facial space infections, Ludwig angina, cavernous sinus thrombosis.

11. Chronic Infections of the Jaws : Osteomyelitis (types, etiology, pathogenesis, management) osteoradionecrosis

12. Maxillary Sinus: maxillary sinusitis - types, pathology, treatment, closure of Oro - antral fistula. Caldwell- luc operation

13. Cysts of the Orofacial region: classification, diagnosis, management of OKC, dentigerous, radicular non Odontogenic,ranula

14. Neurological Disorders of the maxillofacial region: diagnosis and management of trigeminal neuralgia, MPDS, bell's palsy, Frey's syndrome, nerve injuries.

15. Implantlogy: definition, classification, indications and contraindications, advantages and disadvantages, surgical procedure.

16. Anesthesia

Local Anesthesia: classification of local anesthetic drugs, modes of action indications and contra indications, advantages and disadvantages, techniques, complications and their management.

General Anesthesia: classification, stages of GA, mechanism of action, indications, and contra indications, advantages and disadvantages, post anesthetic complications and emergencies, anesthetic for dental procedures in children, pre medication, conscious sedation, legal aspects for GA

17. Trauma

18. Surgical Anatomy of head and Neck

19. Etiology of Injury

20. Basic Principles of Treatment

21. Primary Care: resuscitation, establishment of airway, management of hemorrhage, management of head injuries and admission to hospital.

22. Diagnosis: clinical, radiological

23. Soft Tissue Injury of Face and Scalp: classification and management of soft tissue wounds, injuries to structure requiring special treatment.

24. Dento Alveoalr Fractures: examination and diagnosis, classification, treatment, prevention.

25. Mandibular Fractures: classification, examination and diagnosis, general principles of treatment, complications and their management

26. Fracture of Zygomatic Complex: classification, examination and diagnosis, general principles of treatment, complications and their management.

27. Orbital Fractures: blow out fractures

28. Nasal Fractures

29. Fractures of Middle third of the Facial Skeleton: emergency care, fractured maxilla, and treatment of le fort I, II, III, fractures of Naso orbito ethmoidal region.

30. Opthalmic Injuries: minor injuries, non-perforating injuries, perforating injuries,retiobulbar hemorrhage, and traumatic optic neuropathy.

31. Traumatic Injuries to Frontal sinus: diagnosis, classification, treatment

32. Maxillofacial injuries in Geriatric and pediatric Patients 33.Gun shot wounds and War Injuries 34.Osseointegration in Maxillofacial Reconstruction

35. Matabolic response to Trauma: neuro endocrine responses, inflammatory medi clinical implications

36. Healing of Traumatic Injuries: soft tissues, bone, cartilage, response of periph nerve to injury

37. Nutritional Consideration following Trauma

38. Tracheostomy: indications and contraindications, procedure, complications and their management.

MAXILLOFACIAL SURGERY

- **Salivary gland**

© Sialography

© Salivary fistula and management

© Diseases of salivary gland - developmental disturbances, cysts, inflam and sialolithiasis

© Mucocele and Ranula

© Tumors of salivary gland and their management

©Staging of salivary gland tumors

©Parotidectomy

Temporomandibular Joint

© Etiology, history signs, symptoms, examination and diagnosis of temporomandibular joint disorders

© Ankylosis and management of the same with different treatment modalities

© MPDS and management

© Condylectomy - different procedures

© various approaches to TMJ

© Recurrent dislocations - Etiology and Management

Oncology

© Biopsy

© Management of pre-malignant tumors of head and neck region

© Benign and Malignant tumors of Head and Neck region

© Staging of oral cancer and tumor markers

© Management of oral cancer

© Radial Neck dissection

© Modes of spread of tumors

© Diagnosis and management of tumors of nasal, paranasal, neck, tongue, cheek, maxilla and mandible

© Radiation therapy in maxillofacial regions.

© Lateral neck swellings

Orthognathic surgery

© Diagnosis and treatment planning

© Cephalometric analysis

© Model surgery

© Maxillary and mandibular repositioning procedures

© Segmental osteotomies

© Management of apertognathia

© Genioplasty

© Distraction osteogenesis

Cysts and tumor of oro facial region

© Odontogenic and non-Odontogenic tumors and their management

© Giant lesions of jawbone

© Fibro osseous lesions of jawbone

© Cysts of jaw

Laser surgery

© The application of laser technology in surgical treatment of lesions Cryosurgery

© Principles, applications of cryosurgery in surgical management of Cleft lip and palate surgery

© Detailed knowledge of the development of the face, head and neck

© Diagnosis and treatment planning

© Current concepts in the management of cleft lip and palate deformity

© Knowledge of Naso endoscopy and other diagnostic techniques in the evaluation of speech and hearing

© Concept of multidisciplinary team management

Aesthetic facial surgery

© Detailed knowledge of the structures of the face and neck including skin a underlying soft tissue

© Diagnosis and treatment planning of deformities and conditions affecting facial skin

© Underlying facial muscles, bone. Eyelids external ear

© Surgical management of post acne scarring, facelift, blepharoplasty, otoplasty, facial bone recontouring, etc

Craniofacial surgery

© Basic knowledge of developmental anomalies of the face, head and neck

© Basic concepts in the diagnosis and planning of various head and neck anomalies including facial clefts, craniosynostosis, syndromes, etc.

© Current concept in the management of Craniofacial anomalies

Monitoring Learning Progress

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

UNIVERSITY SCHEME OF EXAMINATION

M.D.S. Degree examinations in any branch of study shall consist of dissertation, written paper (Theory) Part I at the end of Ist year and Part II at the end of 3 years Practical/Clinical and Viva voce.

Theory: Part-I: Basic Sciences Paper - **100 Marks**

Part-II: Paper-I, Paper-II & Paper-III - **300 Marks** (100 Marks for each Paper)

Written examination shall consist of Basic Sciences (Part-I) of three hours duration shall be conducted at the end of First year of MDS course. Part-II Examination shall be conducted at the end of Third year of MDS course.

Part-I : Applied Basic Sciences: Applied Anatomy, embryology, growth and development Genetics, Immunology, anthropology, Physiology, nutrition & Biochemistry, Pathology & Microbiology, virology, Applied pharmacology, Research Methodology and bio statistics,. Applied Dental anatomy & histology, Oral pathology & oral Microbiology, Adult and geriatric psychology. Applied dental materials.

Part-II Examination shall consist of Paper-I, Paper-II and Paper-III, each of three hours duration.

Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each.

Paper-III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

DISTRIBUTION OF MARKS:

Theory :

(1) Part I University Examination (100 Marks):-

There shall be 10 questions of 10 marks each (Total of 100 Marks)

(2) Part II (3 papers of 100 Marks):-

(i) Paper-I: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(ii) Paper-II: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(iii) Paper III: 2 out of 3 essay questions (50 x 2 = 100 Marks)

Practical and Clinical Examination : 200 Marks

Viva-voce and Pedagogy : 100 Marks

Practical / Clinical Examination : 200 Marks .

a. Minor Oral Surgery -100 Marks

Each candidate is required to perform the minor oral surgical procedures under local anaesthesia. The minor surgical cases may include removal of impacted lower third molar, cyst enucleation, any similar procedure where students can exhibit their professional skills in raising the flap, removing the bone and suturing the wound.

b. One long case - 60 marks

c. Two short cases – 20 marks each

Viva Voce: 100 Marks

i. Viva-voce examination: 80 marks

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

ii. Pedagogy Exercise: 20 marks

A topic be given to each candidate in the beginning of clinical examination. He/she is asked make a presentation on the topic for 8-10 minutes.

CONSERVATIVE DENTISTRY and ENDODONTICS

The following objectives are laid out to achieve the goals of the course. These are to be achieved by the time the candidate completes the course. These objectives may be considered under the following subtitles.

Knowledge

At the end of 36 months of training, the candidates should be able to:

© Describe aeitology, pathophysiology, periapical diagnosis and management of common restorative situations, endodontic situations that will include contemporary management of dental caries, management of trauma and pulpal pathoses including periodontal situations.

© Demonstrate understanding of basic sciences as relevant to conservative / restorative dentistry and Endodontics.

© Identify social, economic, environmental and emotional determinants in a given case or community and take them into account for planning and execution at individual and community level.

© Ability to master differential diagnosis and recognize conditions that may require multi disciplinary approach or a clinical situation outside the realm of the specialty, which he or she should be able to recognize and refer to appropriate specialist.

© Update himself by self-study and by attending basic and advanced courses, conferences, seminars, and workshops in the specialty of Conservative Dentistry- Endodontics-Dental Materials and Restorative Dentistry.

© Ability to teach, guide, colleagues and other students.Use information technology tools and carry out research both basic and clinical with the aim of publishing his/her work and presenting the same at scientific platforms

Skills

© 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 to 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.

© Perform all levels of restorative work and surgical and non-surgical Endodontics including endodontic endoosseous implants, as well as endodontic-periodontal surgical procedures as part of multidisciplinary approach to clinical condition.

© Provide basic life saving support in emergency situations.

© Manage acute pulpal and pulpo periodontal situations.

© Have a thorough knowledge of infection control measures in the dental clinical environment and laboratories.

Human Values, Ethical Practice and Communication Abilities

© Adopt ethical principles in all aspects of restorative and contemporaries Endodontics" including non-surgical and surgical Endodontics. © Professional honesty and integrity should be the top priority.

© Dental care has to be provided regardless of social status, caste, creed or religion of the patient.

© Develop communication skills- in particular to explain various options available management and to obtain a true informed consent from the patient.

© Apply high moral and ethical standards while carrying on human or animal research .He / She shall not carry out any heroic procedures and must know his limitations in performing all aspects of restorative dentistry including Endodontics. Ask for help from colfeagues or seniors when required without hesitation O Respect patient's rights and privileges including patients right to information.

Course Contents :

Applied Anatomy of Head and Neck

© Development of face, paranasal sinuses and the associated structures and their anomalies, cranial and facial bones, TMJ anatomy and function, arterial and venous drainage of head and neck, muscles of face and neck including muscles of mastication and deglutition, brief consideration of structures and function of brain. Brief consideration of all cranial nerves and autonomic nervous system of head and neck. Salivary glands, Functional anatomy of mastication, deglutition and speech. Detailed anatomy of deciduous and permanent teeth, general consideration in physiology of permanent dentition, form, function, alignment, contact, occlusion.)

© Internal anatomy of permanent teeth and its significance

© Applied histology, histology of skin, oral mucosa, connective tissue, bone cartilage, blood vessels, lymphatics, nerves, muscles, tongue.

Development of Teeth

© Enamel - development and composition, physical characteristics, chemical properties, structure

© Age changes - clinical structure

© Dentin - development, physical and chemical properties, structure type of dentin, innervations, age and functional changes.

© Pulp - development, histological structures, innervations, functions, regressive changes, clinical considerations.

© Cementum - composition, cementogenesis, structure, function, clinical consideration.

© Periodontal ligament - development, structure, function and clinical consideration.

© Salivary glands - structure, function, clinical considerations.

Applied Physiology

© Mastication, deglutition, digestion and assimilation, fluid and electrolyte balance.

© Blood composition, volume, function, blood groups, haemostasis, coagulation, blood transfusion, circulation, heart, pulse, blood pressure, shock, respiration, control, anoxia, hypoxia, asphyxia, artificial respiration, and endocrinology - general principles of endocrine activity and disorders relating to pituitary, thyroid, parathyroid, adrenals including pregnancy and lactation.

© Physiology of saliva - composition, function, clinical significance.

© Clinical significance of vitamins, diet and nutrition - balanced diet.

© Physiology of pain, sympathetic and Para sympathetic nervous system, pain pathways, physiology of pulpal pain, Odontogenic and non Odontogenic pain, pain disorders - typical and atypical, biochemistry such as osmotic pressure, electrolytic dissociation, oxidation, reduction etc., carbohydrates, proteins, lipids and their metabolism, nucleoproteins, nucleic acid and their metabolism. Enzymes, vitamin and minerals, metabolism of inorganic elements, detoxification in the body, anti metabolites, chemistry of blood lymph and urine.

Pathology

© Inflammation, repair, degeneration, necrosis and gangrene.

© Circulatory disturbances - ischemia, hyperemia, edema, thrombosis, embolism, infarction, allergy and hypersensitivity reaction.

© Neoplasms - classifications of tumors, characteristics of benign and malignant tumors, spread tumors.

© Blood dyscrasias

© Developmental disturbances of oral and Para oral structures, dental caries, regressive changes of teeth, pulp, periapical pathology, pulp reaction to dental caries and dental procedures.

© Bacterial, viral, mycotic infections of the oral cavity.

Microbiology

© Pathways of pulpal infection, oral flora and micro organisms associated with endodontic diseases, pathogenesis, host defense, bacterial virulence factors, healing, theory of focal infections, microbes or relevance to dentistry - strepto, staphylococci, lactobacilli, comyebacterium, actinomycetes, Clostridium, neisseria, vibrio,bacteriods,fusobacteria,spirochetes,mycobacterium, virus and fungi.

© Cross infection, infection control, infection control procedure, sterilization and disinfection.

© Immunology - antigen antibody reaction, allergy, hypersensitivity and anaphylaxis, auto immunity, grafts, viral hepatitis, HIV infections and aids. Identification and isolation of microorganisms from infected root canals. Culture medium and culturing technique
(Aerobic and anaerobic interpretation and antibiotic sensitivity test).

Pharmacology

© Dosage and route of *administration of drugs, actions and fate of drug in body,* drug *addiction, tolerance of hypersensitivity reactions.*

© Local anesthesia - *agents and chemistry, pharmacological actions, fate and metabolism of anaesthetic, ideal properties, techniques and complications.*

© General *anesthesia - pre medications, neuro muscular blocking agents, induction agents, inhalation anesthesia, and agents used, assessment of anesthetic problems* **in** *medically compromised patients.*

© *Anaesthetic emergencies*

© *Antihistamines, corticosteroids, chemotherapeutic and antibiotics, drug resistance, haemostasis, and haemostatic agents, anticoagulants, sympathomimitic drugs, vitamins and minerals (A, B, C,* D, E, *K IRON), anti sialogogue, immunosupressants, drug interactions, antiseptics, disinfectants, anti viral agents, drugs acting on CNS.*

Biostatistics

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

Research Methodology

© *Essential features of a protocol for research in humans*

© *Experimental and non-experimental study designs*

© *Ethical considerations of research*

Applied Dental Materials

© *Physical and mechanical properties of dental materials, biocompatibility.*

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

© Dental ceramics-recent advances, finishing and polishing materials. © Dental burs - design and mechanics of cutting - other modalities of tooth preparation. © Methods of testing biocompatibility of materials used.

CONSERVATIVE DENTISTRY

1. Examination, diagnosis and treatment plan

2. Occlusion as related to conservative dentistry, contact, contour, its significance. Separation of teeth, matrices, used in conservative dentistry.

3. Dental caries- epidemiology, recent concept of etiological factors, pathophysiology, Histopathology, diagnosis, caries activity tests, prevention of dental caries and management - recent methods.

4. Hand and rotary cutting instruments, development of rotary equipment, speed ranges hazards.

5. Dental burs and other modalities of tooth reparation- recent developments (air abrasions, lasers etc)

6. Infection control procedures in conservative dentistry, isolation equipments etc.

7. Direct concepts in tooth preparation for amalgam, composite, GIC and restorative techniques, failures and management.

8. Direct and indirect composite restorations.

9. Indirect tooth colored restorations- ceramic, inlays and onlays, veneers, crowns, recent advances in fabrication and materials.

a. Tissue management

10. Impression procedures used for direct restorations.

11. Cast metal restorations, indications, contraindications, tooth preparation for class! inlay, Onlay full crown restorations.

Restorative techniques, direct and indirect methods of fabrication including materi used for fabrication like inlay wax, investment materials and

12. Direct gold restorations.

13. Recent advances in restorative materials and procedures.

14. Management of non-carious lesion.

15. Advance knowledge of minimal intervention dentistry.

16. Recent advances in restoration of endodontically treated teeth and grossly mutilated teeth

17. Hypersensitivity, theories, causes and management.

18. Lasers in Conservative Dentistry

19. CAD-CAM & CAD-CIM in restorative dentistry

20. Dental imaging and its applications in restorative dentistry (clinical photography)

21. Principles of esthetics

-Facial analysis

-Smile design

-Principles of esthetic integration

-Treatment planning in esthetic dentistry

Endodontics

1. Rationale of endodontics.
2. Knowledge of internal anatomy of permanent teeth, anatomy of root apex and its implications in endodontic treatment.
3. Dentin and pulp complex.
4. Pulp and periapical pathology
5. Pathobiology of periapex.
6. Diagnostic procedure - recent advances and various aids used for diagnosis-

a. Orofacial dental pain emergencies: endodontic diagnosis and management

7. Case selection and treatment planning
8. Infection control procedures used in endodontics (aseptic techniques such as rubber dam, sterilization of instruments etc.)
9. Access cavity preparation - objectives and principles
10. Endodontic instruments and instrumentation - recent developments, detailed description of hand, rotary, sonic, ultra sonic etc..
11. Working length determination / cleaning and shaping of root canal system and recent development in techniques of canal preparation.
12. Root canal irrigants and intra canal medicaments used including non - surgical endodontics by calcium hydroxide.
13. Endodontic microbiology.
14. Obturating materials, various obturation techniques and recent advances in obturation of root canal.
15. Traumatic injuries and management - endodontic treatment for young permanent teeth. Pediatric endodontics - treatment of immature apex.

16. Endodontic surgeries, recent developments in technique and devices, endoosseous endodontic implants - biology of bone and wound healing.

17. Endoperio interrelationship, endo + Perio lesion and management

18. Drugs and chemicals used in endodontics

19. Endo emergencies and management.

20. Restoration of endodontically treated teeth, recent advances.

21. Geriatric endodontics

22. Endo emergencies and management.

23. Biologic response of pulp to various restorative materials and operative procedures.

24. Lasers in endodontics.

25. Multidisciplinary approach to endodontic situations. 26.Endodontic radiology- digital technology in endodontic practice. 27.Local anesthesia in endodontics.

28.Procedural errors in endodontics and their management. 29.Endodontic failures and retreatment.

30.Resorptions and its management. 31.Microscopes in endodontics.

32. Single visit endodontics, current concepts and controversies.

First Year

Pre Clinical Work - Operative and Endodontics

Preclinical work on typhodont teeth

1. Class 2 amalgam cavities	
a. Conservative preparation	- 03
b. Conventional preparation	- 03
2. Inlay cavity preparation on premolars And molars - MO, DO, MOD	
a. Wax pattern	- 10
b. Casing	- 06
3. Onlay preparation oh molars a. Casting	- 04
4. Full Crown	- 02
a. Anterior	- 01
b. Posterior	05
(2 each to be processed)	05
5. 7/8 crown (1 to be processed)	- 02
6. 3 / 4 crown premolars (1 to be processed) Pre *Clinical work on natural teeth*	- 02

1.Inlay on molars and premolars MO, DO, and MOD	08
a. Casting	02
b. Wax pattern	02

2. Amalgam cavity preparation

*a.*Conventional 02

b. Conservative	02
3. Pin retained amalgam on molar teeth	02
4. Post and core build up	
Anterior teeth	10
Posterior teeth	05
5. *Casting*	
Anterior	*04*
Posterior	*02*
6. Onlay on molars	*03*
(1 to be processed)	
7. Full crown premolars and molars	*04*
8. Full crown anterior	*06*
(2 and 3 to be processed)	
9. Veneers anterior teeth (indirect method)	*02*
10. Composite inlay (class 2)	*03*
11. Full tooth wax carving - all permanent teeth	

Endodontics

1. Sectioning of all maxillary and mandibular teeth.

2. Sectioning of teeth - in relation to deciduous molar, 2nd primary upper and lower molar 1 each

3. Access cavity opening and root canal therapy in relation to maxillary and mandibular permanent teeth

4. Access cavity preparation and BMP Anterior

a. Conventional prep

b. Step back

c. Crown down

Obturation **03**

5. BMP Premolar 06 (2 upper and 2 lower) obturation 1 each

6. BMP Molar 06 (3 upper - 2 first molars and 1 second molar, 3 lower - 2 first molars and 1 second molar) obturation 1 each

7. Post and core preparation and fabrication in relation to anterior and posterior teeth

a. Anterior 10 (casting 4)

b. Posterior 05 (casting 2)

c. Removable dies 04

Note: Technique work to be completed in the first four months Clinical work

A. Composite restorations 30

B. GIC restorations 30

C. Complex amalgam restorations 05

D. Composite inlay + veneers 05

Direct + Indirect

E. Ceramic jacket crown 05

F G Post and core for anterior teeth Bleaching 05
vital

05

Non Vital 05

H. RCT Anterior 20

I. Endo surgery - observation and assisting 05

Presentation of

© Seminars - 5 seminars by each student - should include topics in dental conservative dentistry and endodontics

© Journal clubs - by each student

© Submission of synopsis at the end of 6 months

© Library assignment work

© Internal assessment - theory and clinicals.

Second Year

Case discussion-5

1 Ceramic jacket crowns 10

2 Post and core for anterior teeth 10

3 Post and core for posterior teeth 05

4 Composite restoration 05

5 Full crown for posterior teeth 15

6 Cast gold inlay 05

7 Other special types of work such as splinting-
Reattachment of fractured teeth etc. 05

8 Anterior RCT 20

9 Posterior RCT 30

10 Endo surgery performed independently 05

11 Management of endo - Perio problems 05

© Under graduate teaching program as allotted by the HOD

© Seminars - 5 by each student

- © Journal club - 5 by each student
- © Dissertation work

© Prepare scientific paper and present in conference and clinical meeting

© Library assignment to be submitted 18 months after starting of the course

© Internal assessment - theory and clinical

Third Year

Dissertation work to be submitted 6 months before final examination. Clinical work

© Cast gold inlay- Onlay, cuspal restoration 10

©Post and core 20

©Molar endodontics 50

©Endo surgery 05

All other types of surgeries including crown 05

lengthening, perioesthetics, hemi sectioning, splinting, replantation, endodontic implants.

Presentation of

- © Seminars
- © Journal club

Teaching - lecture (under graduates)

- © Internal assessment - theory and clinical

Monitoring Learning Progress

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

UNIVERSITY SCHEME OF EXAMINATION

M.D.S. Degree examinations in any branch of study shall consist of dissertation, written paper (Theory) Part I at the end of Ist year and Part II at the end of 3 years Practical/Clinical and Viva voce.

Theory: Part-I: Basic Sciences Paper - **100 Marks**

Part-II: Paper-I, Paper-II & Paper-III - **300 Marks** (100 Marks for each Paper)

Written examination shall consist of Basic Sciences (Part-I) of three hours duration shall be conducted at the end of First year of MDS course. Part-II Examination shall be conducted at the end of Third year of MDS course.

Part-I : Applied Basic Sciences: Applied Anatomy, embryology, growth and development Genetics, Immunology, anthropology, Physiology, nutrition & Biochemistry, Pathology & Microbiology, virology, Applied pharmacology, Research Methodology and bio statistics, Applied Dental anatomy & histology, Oral pathology & oral Microbiology, Adult and geriatric psychology. Applied dental materials.

Part-II Examination shall consist of Paper-I, Paper-II and Paper-III, each of three hours duration.

Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each.

Paper-III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

DISTRIBUTION OF MARKS:

Theory :

(1) Part I University Examination (100 Marks):-

There shall be 10 questions of 10 marks each (Total of 100 Marks)

(2) Part II (3 papers of 100 Marks):-

(i) Paper-I: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(ii) Paper-II: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(iii) Paper III: 2 out of 3 essay questions (50 x 2 = 100 Marks)

Practical and Clinical Examination : 200 Marks

Viva-voce and Pedagogy : 100 Marks

A. Clinical 200 Marks

The duration of Clinical and Viva Voce examination will be 2 days for a batch of four students. If the number of candidates exceeds 4, the programe can be extended to 3rd day.

Day 1

Clinical Exercise I - 50 Marks Cast core preparation

(i) Tooth Preparation - 10 marks

(ii) Direct Wax Pattern - 10 marks

(iii) Casting - 10 marks

(iv) Cementation - 10 marks

(v) retention & Elastomeric Impression - 10 marks

Clinical Exercise II - 50 Marks (inlay Exercise)

(i) Tooth preparation for Class II Gold Inlay-25 marks

(ii) Fabrication of Direct Wax Pattern- 25 marks

Day 2

Clinical Exercise III - 100 Marks (Molar Endodontics)

(i) Local Anesthesia and Rubber Dam application-20 marks

(ii) Access Cavity- 20 marks

(iii) Working length determination-20 marks

(iv) Canal Preparation- 20 marks

(v) Master bone selection-20 marks

B. Viva Voce : 100 Marks

i. Viva-Voce examination: 80 marks

ii. All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also Pedagogy Exercise: 20 marks

A topic is given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes.

Day 3:

Viva-Voce (Continued if more than 4 students are taking examination or shortage of time on 2nd day)

Objectives

ORTHODO NTICS & DENTOFACIAL ORTHOPAEDICS

The training programme in Orthodontics is to structure and achieve the following four objectives K**nowledge of**

1. The dynamic interaction of biologic processes and mechanical forces acting on the stomatognathic system during orthodontic treatment
2. The etiology, pathophysiology, diagnosis and treatment planning of various common Orthodontic problems
3. Various treatment modalities in Orthodontics preventive interceptive and corrective.
4. Basic sciences relevant to the practice of Orthodontics
5. Interaction of social, cultural, economic, genetic and environmental factors and their relevance to management of oro - facial deformities
6. Factors affecting the long-range stability of orthodontic correction and their management
7. Personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste, keeping in view the high prevalence of Hepatitis and HIV and other highly contagious diseases.

Skills

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

Attitudes:

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

Communication skills

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

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

Course Content

The program outlined, addresses both the knowledge needed in Orthodontics and allied Medical specialities in its scope. A minimum of three years of formal training through a graded system of education as specifies, will equip the trainee with skill and knowledge at its completion to be able to practice basic Orthodontics and have the ability to intelligently pursue further apprenticeship towards advanced Orthodontics.

Spread of the Curriculum

Six months teaching o basic subjects including completion of pre - clinical exercises 2 ft years of coverage of all the relevant topics in Orthodontics, clinical training invoMng treatment of patients and submission of dissertation. These may be divided into blocks of 6 to 8 months duration each, depending on the training policies of each institution.

I. Applied Anatomy:

© Prenatal growth of head:

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

© Postnatal growth of head:

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

© Bone growth:

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

© Assessment of growth and development:

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

© Muscles of mastication:

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

© Development of dentition and occlusion:

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

© Assessment of skeletal age

The carpal bones, carpal x - rays, cervical vertebrae II

Physiology

© Endocrinology and its disorders

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

© Calcium and its metabolism

© Nutrition-metabolism and their disorders: proteins, carbohydrates, fats, vitamins and minerals.

© Muscle physiology

© Craniofacial Biology: ell adhesion molecules and mechanism of adhesion

© Bleeding disorders in orthodontics: Hemophilia

III Dental materials:

© Gypsum products: dental plaster, dental stone and their properties, setting reaction etc.

© Impression materials: impression materials in general and particularly of alginate impression material.

© Acrylics: chemistry, composition physical properties

© Composites: composition types, properties setting reaction

© Banding and bonding cements: Zn (P04)2, zinc silicophosphate, Zinc polycarboxylate, resin cements and glass lonomer cements

© Wrought metal alloys: deformation, strain hardening, annealing, recovery, recrystallization, grain growth, properties of metal alloys

© Orthodontic arch wires: stainless steel gold, wrought cobalt chromium nickel alloys, alpha&beta titanium alloys

© Elastics: Latex and non-latex elastics.

© Applied physics, Bioengineering and metallurgy.

© Specification and tests methods used for materials used in Orthodontics

© Survey of all contemporary literature and Recent advances in above - mentioned materials.

IV. Genetics:

© Cell structure, DNA, RNA, protein synthesis, cell division

© Chromosomal abnormalities © Principles of orofacial genetics •

© Genetics in malocclusion

© 5 Molecular basis of genetics

© Studies related to malocclusion

© Recent advances in genetics related to malocclusion

© Genetic counseling

© Bioethics and relationship to Orthodontic management of patients.

V Physical Anthropology:

© Evolutionary development of dentition

© Evolutionary development of jaws.

VI Pathology:

© Inflammation

© Necrosis

VII Biostatistics:

© Statistical principles

© Data Collection

© Method of presentation

© Method of Summarizing

© Methods of analysis - different tests/errors

© Sampling and Sampling technique

© Experimental models, design and interpretation

© Development of skills for preparing clear concise and cognent scientific abstracts and publication

VIII. Applied research methodology in Orthodontics

© Experimental design

© Animal experimental protocol

© Principles in the development, execution and interpretation of **methodologies in** Orthodontics

© Critical Scientific appraisal of literature.

IX. Applied Pharmacology:

X. Orthodontic history:

© Relationship of TMJ anatomy and pathology and related neuromuscular physiology.

XII. Etiology and Classification of malocclusion:

© A comprehensive review of the local and systemic factors in the causation of malocclusion

©Various classifications of malocclusion

XIII. Dentofacial Anomalies:

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

XIV. Child and Adult Psychology:

© Stages of child development.

© Theories of psychological development.

© Management of child in orthodontic treatment.

© Management of handicapped child.

© Motivation and Psychological problems related to malocclusion / orthodontics

© Adolescent psychology

© Behavioral psychology and communication

XV. Diagnostic procedures and treatment planning in orthodontics

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

© Problem cases - analysis of cases and its management

© Adult cases, handicapped and mentally retarded cases and their special problems

© Critique of treated cases. Cephalometrics

© Instrumentation

© Image processing

© Tracing and analysis of errors and applications

© Radiation hygiene

© Advanced Cephalometrics techniques

© Comprehensive review of literature

© Video imaging principles and application.

XVII. Practice management in Orthodontics

© Economics and dynamics of solo and group practices

© Personal management

© Materials management

© Public relations

© Professional relationship

© Dental ethics and jurisprudence

© Office sterilization procedures

© Community based Orthodontics.

XVIII.Clinical Orthodontics Myofunctional Orthodontics:

© Basic principles

© Contemporary appliances - their design and manipulation

© Case selection and evaluation of the treatment results

© Review of the current literature.

Dentofacial Orthopedics

© Principles

© Biomechanics

© Appliance design and manipulation

© Review of contemporary literature

Cleft lip and palate rehabilitation:

© Diagnosis and treatment planning

© Mechanotherapy

© Special growth problems of cleft cases

© Speech physiology, pathology and elements of therapy as applied to orthodontics

© Team rehabilitative procedures.

Biology of tooth movement:

© Principles of tooth movement-review

© Review of contemporary literature

© Applied histophysiology of bone, periodontal ligament

© Molecular and ultra-cellular consideration in tooth movement

Orthodontic / Orthognathic surgery:

© Orthodontist' role in conjoint diagnosis and treatment planning

© Pre and post-surgical Orthodontics

© Participation in actual clinical cases, progress evaluation and post retension study

© Review of current literature

Ortho / Perio / Prostho inter relationship

© Principles of interdisciplinary patient treatment © Common problems and their management

Basic principles of Mechanotherapy Includes Removable appliances and fixed appliances

© Design

© Construction

© Fabrication

© Management

© Review of current literature on treatment methods and results

Applied preventive aspects in Orthodontics

© Caries and periodontal disease prevention

© Oral hygiene measures

© Clinical procedures

Interceptive Orthodontics

© Principles

© Growth guidance

© Diagnosis and treatment planning

© Therapy emphasis on:

a. Dento-facial problems

b. Tooth material discrepancies

c. Minor surgery for Orthodontics

Retention and relapse

© Mechanotherapy - special reference to stability of results with various procedures

© Post retention analysis

© Review of contemporary literature

XIX. Recent advances like:

©Use of implants

© Lasers

© Application of FE.M.

© Distraction Osteogenesis

Skills:

II. Pre - Clinical Exercises

A general outline of the type of exercises is given here. Every institution can decide the details of exercises under each category.

1. General Wire bending exercises to develop the manual dexterity.
2. Clasps, Bows and springs used in the removable appliances.
3. Soldering and welding exercises.
4. Fabrication of removable habit breaking, mechanical and functional appliances, also all types of space maintainors and space regainers.
5. Bonwill Hawley Ideal arch preparation.
6. Construction of orthodontic models trimmed and polished preferably as per specifications of Tweed or A.B.O.
7. Cephalometric tracing and various Analyses, also superimposrtion methods -
8. Fixed appliance typhodont exercises.

a) Training shall be imparted in one basic technique i.e. Standard Edgewise / Begg technique or its derivative / Straight wire etc., with adequate exposure to other techniques.

b) Typhodont exercise

i. Band making

ii. Bracket positioning and placement

iii. Different stages in treatment appropriate to technique taught

9. Clinical photography

10. Computerized imaging

11. Preparation of surgical splints, and splints for TMJ problems.

12. Handling of equipments like vacuum forming appliances and hydro solder etc

First Year

I. Basic Pre-Clinical Exercise Work for the MDS Students:

First 6 Months

1. Non-appliance exercises

All the following exercises should be done with 0.7 **or** 0.8mm **wire**

Sl. No.	**Exercise**	**No.**
1	Straightening of 6" & 8" long wire	1 each
2	Square	1
3	Rectangle	1
4	Triangle of 2" side	1
5	Circle of 2" side	1
6	Bending of 5U's	1
7	Bending of 5V's	1

1. Clasps

Sl. No	**Exercise**	**No.**
1	¾ Clasps	2
2	Full clasps	2
3	Triangular Clasps	2
4	Adam's clasp - upper molar	2
5	Adam's Clasp - lower molar	2
6	Adam's Clasp - Pre-molar	2

7	Adam's Clasp – Incisor	2
8	Modification of Adam's - With Helix	2
9	Modification of Adam's - With distal extension	2
10	Modification of Adam's - With soldered tube	2
11	Duyzing Clasps on Molars	2
12	Southend Clasp	1

2. LABIAL BOWS

SL NO	EXERCISE	NO
1	Short labial bow (upper & lower)	1
2	Long labial bow (upper & lower)	1
3	Robert's retractor	1
4	High labial bow-with apron spring's	1
5	Mill's labial bow	1
6	Reverse loop labial bow	1
7	Retention labial bow soldered to Adam's clasp	1
8	Retention labial bow extending distal to second molar	
9	Fitted labial bow	
10	Split high labial bow	1

3. SPRINGS

SL NO	EXERCISE	NO
1	Finger spring-mesial movement	2
2	Finger spring-distal movement	2
3	Double cantilever spring	2
4	Flapper spring	2
5	Coffin spring	2
6	T spring	2

1. CANINE RETRACTORS

SL NO	EXERCISE	NO
1	u loop canine retractor	2PAIRS
2	Helical canine retractor	2PAIRS
3	Palatal canine retractor	2PAIRS
4	Self -supporting canine retractor	2PAIRS
5	Self -supporting canine retractor	2PAIRS

2. Appliances

SL NO	EXERCISE
1	Hawley's retention appliance with anterior bite plane
2	Upper Hawley's appliance with posterior bite plane
3	Upper expansion appliance with coffin spring
4	Upper expansion appliance with coffin spring
5	Upper expansion appliance with expansion screw
6	Habit breaking appliance with tongue crib
7	Oral screen and double oral screen
8	Lip bumper
9	Splint forBruxism
10	Catalans appliance
11	Activator
12	Bionator
13	Frankel-FR 2 appliance
14	Twin block
15	Lingual arch
16	TPA

17	Quad helix
18	Bihelix
19	Utility arches
2 0	Pendulum appliance

3. Soldering exercises

Sl.No.	**Exercise**	**No.**
1	Star	1
2	Comb	1
3	Christmas tree .	1
4	Soldering buccaltube on molar bands	1

4. Welding exercises

Sl.No.	**Exercise**
1	Pinching and welding of molar, premolar, canine and Incisor bands
2	Welding of buccal tubes and brackets on molar bands and incisor bands

5. Impression of upper and lower arches in alginate

6. Study model preparation

7. Model analysis

Sl. No.	**EXERCISE**
1	Impression of upper and lower dental arches
2	PREPARATION OF STUDY MODEL -1 And all the permanent dentition analyses to be done.
3	PREPARATION OF STUDY MODEL - 2And all the permanent dentition analyses to be done.
4	PREPARATION OF STUDY MODEL - 3And all the mixed dentition analyses to be done.

8. Cephalometrics

SI. No.	EXERCISE
1	Lateral cephalogram to be traced in five different colors and super imposed to see the accuracy of tracing
2	Steiner's analysis
3	Down's analysis
4	Tweed analysis
5	Rickett's analysis
6	Burrstone analysis
7	Rakosi's analysis
8	Mc Namara analysis
9	Bjork analysis
10	Coben's analysis
11	Harvold's analysis
12	Soft tissue analysis - Holdaway and Burstone

- **Basics of Clinical Photography including Digital Photography**
- **Light wire bending exercises for the Begg technique**

Sl. No.	Exercise
1	Wire bending technique on 0.016' wire circle "Z" Omega
2	Bonwill-Hawley diagram
3	Making a standard arch wire
4	Inter maxillary hooks- Boot leg and Inter Maxillary type
5	Upper and Lower arch wire
6	Bending a double back arch wire
7	Bayonet bends (vertical and horizontal offsets)
8	Stage-Ill arch wire
9	Torquing auxiliary (upper)
10	Reverse Torquing (lower)
11	Up righting spring

2. Typhodont exercises

1. Teeth setting in Class-ll division I malocclusion with maxillary anterior proclination and mandibular anteriorcrowding
2. Band pinching, welding brackets and buccal tubes to the bands
3. Stage-I
4. Stage-ll
5. Pre Stage-I
6. Stage-Ill

CLINICAL WORK:

Once the basic pre-clinical work is completed the students can take up clinical cases and clinical training is for the two and half years.

Each postgraduate student should start with a minimum of 50 cases of his/her own. Additionally he / she should handle a minimum of 20 transferred cases.

The type of cases can be as follows:

i. Removable activeappliances-5cases
ii. Class-I malocclusion withCrowding
iii. Class-I malocclusion with bi-maxillaryprotrusion
iv. Class-ll division-1
v. Class-ll division-2
vi. Class-Ill (Orthopedic, Surgical, Orthodontic cases)
vii. Inter disciplinary cases
viii. Removable functional appliance cases like activator, Bionator, functional regulator, twin block and new developments
ix. Fixed functional appliances - Herbst appliance, jasper jumper etc - 5 cases
x. Dento-facial orthopedic appliances like head gears, rapid maxillary expansion niti expander etc., - 5 cases
xi. Appliance for arch development such as molar distalization -m 5 cases
xii. Fixed mechano therapy cases (Begg, PEA, Tip edge, Edgewise) Retention procedures of above treated cases.

Other work to be done during FIRST YEAR

1. **Seminars:** One Seminar per week to be conducted in the department. A minimum of five seminars should be presented by each student each year
2. **Journal club:** One Journal club per week to re conducted in the department. A minimum of five seminars should be presented by each student each year
3. Protocol for dissertation to be submitted on or before the end of six months from the date of admission.
4. **Under graduate classes**: Around 4 - 5 classes should be handled by each post- graduate student
5. **Field survey:** To be conducted and submit the report
6. **Inter-departmental meetings:** should be held once in a month.
7. **Case discussions**
8. **Field visits:** To attend dental camps and to educate the masses
9. **Basic subjects classes**
10. **Internal assessment or Term paper Second Year:**

The clinical cases taken up should be followed under the guidance. More case discussions and cases to be taken up. Other routine work as follows.

1. Seminars: One Seminar per week to be conducted in the department. Each student should present a minimum of five seminars each year.
2. Journal club: One Journal club per week to be conducted in the department. Each student should present a minimum of five seminars each year.
3. Library assignment to be submitted on or before the end of six months.
4. Undergraduate classes: each post-graduate student should handle Around 4-5 classes.
5. Inter-departmental meetings: Should be held once in a month
6. Case discussions
7. Field visits: To attend dental camps and to educate the masses.
8. Internal assessment or term paper.
9. Dissertation work: On getting the approval from the university work for the dissertation to be started.

Third Year:

The clinical cases taken up should be followed under the guidance. More cases discussions and cases to be taken up. Other routine work as follows:

1. **Seminars:** One Seminar per week to be conducted in the department. E student should present a

minimum of five seminars each year.

2. **Journal Club:** One Journal club per week to be conducted in the departments minimum of five seminars should be presented by each student each year
3. **Under graduate classes:** each post - graduate student, should handle Around 4-5 classes.
4. **Inter-departmental meetings**: Should be held once in a month.
5. **The completed dissertation should be submitted six months before the final examination**
6. **Case discussions**
7. **Field visits**: To attend dental camps and to educate the masses.
8. **Finishing and presenting the cases taken up.**
9. **Preparation of finished cases and presenting the cases (to be presented for the examination)**
10. **Mock examination Dissertation:**

a. The protocol for dissertation should be submitted on or before the end of six months from the date of admission as per calendar of events to the Registrar, Rajiv Gandhi University of Health Sciences, Karnataka, through proper channel.

b. The completed dissertation should be submitted 6 months before the final examination as per calendar of events to the Registrar (Evaluation), Rajiv Gandhi University of Health Sciences, Karnataka, through proper channel.

c. The dissertation should not be just a repetition of a previously undertaken study but should try to explore some new aspects.

d. Approval of dissertation is essential before a candidate appears for the Univ examination.

Monitoring Learning Progress

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

UNIVERSITY SCHEME OF EXAMINATION

M.D.S. Degree examinations in any branch of study shall consist of dissertation, written paper (Theory) Part I at the end of Ist year and Part II at the end of 3 years Practical/Clinical and Viva voce.

Theory: Part-I: Basic Sciences Paper - **100 Marks**

Part-II: Paper-I, Paper-II & Paper-III - **300 Marks** (100 Marks for each Paper)

Written examination shall consist of Basic Sciences (Part-I) of three hours duration shall be conducted at the end of First year of MDS course. Part-II Examination shall be conducted at the end of Third year of MDS course.

Part-I : Applied Basic Sciences: Applied Anatomy, embryology, growth and development Genetics, Immunology, anthropology, Physiology, nutrition & Biochemistry, Pathology & Microbiology, virology, Applied pharmacology, Research Methodology and bio statistics, Applied Dental anatomy & histology, Oral pathology & oral Microbiology, Adult and geriatric psychology. Applied dental materials.

Part-II Examination shall consist of Paper-I, Paper-II and Paper-III, each of three hours duration.

Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each.

Paper-III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

DISTRIBUTION OF MARKS:

Theory :

(1) Part I University Examination (100 Marks):-

There shall be 10 questions of 10 marks each (Total of 100 Marks)

(2) Part II (3 papers of 100 Marks):-

(i) Paper-I: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(ii) Paper-II: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(iii) Paper III: 2 out of 3 essay questions (50 x 2 = 100 Marks)

Practical and Clinical Examination : 200 Marks

Viva-voce and Pedagogy : 100 Marks

B. Practical / Clinical Examination : 200 Marks

No	Exercise	Marks allotted	Approximate time
1	Functional appliance, • case discussion, bite registration, fabrication and delivering of the appliance	50	1 hour 1 hour
2	III stage mechanics/ Bonding/ arch wire fabrication	50	1 hour 30 min
3	Display of case records (a minimum of 5 patients to be presented with all the records)	75	1 hour
4	Long cases	25	2 hours

C Viva Voce : 100 Marks

i. Viva-Voce examination: 80 marks

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

ii. Pedagogy Exercise: 20 marks

A topic is given to each candidate in the beginning of clinical examination. He/she is asked t make a presentation on the topic for 8-10 minute

ORAL AND MAXILLOFACIAL PATHOLOGY; AND ORAL MICROBIOLOGY

objectives

© To train a post graduate dental surgeon so as to ensure higher competence in both general and special pathology dealing with the nature of oral diseases, their causes, processes and effects.

© An oral pathologist is expected to perform routine histopathological evaluation of specimens relating to oral and perioral tissues, to carry out routine diagnostic procedures including hematological, cytological, microbiological, Immunological and ultrastructural investigations.

© He/she is expected to have an understanding of current research methodology, collection and interpretation of data, ability to carry out research projects on clinical and/or epidemiological aspects,

a working knowledge on current databases, automated data retrieval systems, referencing and skill in writing scientific papers.

© He/she is expected to present scientific data pertaining to the field, in conferences both as poster and verbal presentations and to take part in group discussions.

Broad outline of theoretical, clinical and practical courses.

1. Study of principles of routine and special techniques used for histopathology including principles of histochemistry, Immunochemistry, applied and theoretical biochemical basis of histochemistry as related to oral pathology.

1. Advanced histological and histopathological study of dental and oral tissues including embryonic considerations, clinical considerations, biology, histology, Pathology, prognosis and management of oral oncology, Concepts of oral premalignancy

2. Study of special and applied pathology of oral tissues as well as relation of local pathologic and clinical findings to systemicconditions.

3. Oral microbiology and their relationship to various branches of dentistry.

4. Oral microbiology affecting hard and soft tissues. Study of clinical changes and their significance to dental and oral diseases as related to oral pathology

5. Forensic odontology

6. Inter institutional postings such as cancer hospital, dermatology clinics, regional HIV detection centers, 'sophisticated instrumentation centers for electron microscopy and other techniques.

7. Maintenance of records of all postgraduates activities.

8. Library assignment.

9. University Dissertation.

A. Course contents First year

1) Biostatistics andResearch Methodology

© Basic principles of biostatistics and study as applied to dentistry and research

© Collection/organization of data/measurement scales presentation of data analysis.

© Measures of central tendency.

© Measures of variability.

© Sampling and planning of health survey.

© Probability, normal distribution and indicative statistics.

© Estimating population values.

© Tests of significance (parametric/non-parametric qualitative methods.)

© Analysis of variance

© Association, correlation and regression.

Approach:

© Didactic lectures on biostatistics and discussion on research methodology by eminent researchers.

© Two - day P.G. orientation course including general approach PG course, library and main dissertation, journal club topic selection and presentation, seminars, clinico- pathological meets, teaching methodology and use of audiovisual aids.

2) Applied Gross Anatomy of Head and Neck including Histology:

© Temporomandibular joint

© Trigeminal nerve and facial nerve

© Muscles of mastication

© Tongue

© Salivary glands

© Nerve supply; blood supply, lymphatic drainage and venous drainage of Oro-dental tissues.

© Embryology

-Development of face, palate, mandible, maxilla, tongue and applied aspects of the same

-Development of teeth and dental tissues and developmental defects of oral and maxillofacial region and abnormalities of teeth

© Maxillary sinus

© Jaw muscles and facial muscles

Genetics:

Introduction modes of inheritance, chromosomal anomalies of oral tissues and single genetic disorders.

Approach:

To be covered as didactic lectures.

© Posting in department of anatomy for dissection of head, face and neck.

3) Physiology (General and oral)

© Saliva

© Pain

© Mastication

© Taste

© Deglutition

© Wound healing

© Vitamins (Influence on growth, development and structure of oral soft and hard tissues and para oral

tissues.)

© Calcium metabolism.

© Theories of mineralization.

© Tooth eruption and shedding.

© Hormones. (Influence on growth, development and structure of oral soft and hard tissues and para oral tissues.)

© Blood and its constituents.

Approach:

To be covered as didactic lectures.

4) Cell Biology:

© Cell-structure and function (ultrastructural and molecular aspects), intercellular junctions, cell cycle and division, cell cycle regulators, cell - cell and cell - extra cellular matrix interactions.

© Detailed molecular aspects of DNA, RNA, and intracellular organelles, transcription and translation and molecular biology techniques.

Approach:

To be covered as seminars and didactic lecture.

5) General Histology:

Light and electron microscopy considerations of Epithelial tissues and glands, bone, hematopoietic system, lymphatic system, muscle, neural tissue, endocrinal system (thyroid, pituitary, parathyroid)

Approach:

- © Topics to be covered as didactic lectures.
- © Postings in the department of anatomy and histology for slide discussion
- © Record book to be maintained.

6) Biochemistry:

©Chemistry of carbohydrates, lipids and proteins.

©Methods of identification and purification.

©Metabolism of carbohydrates, lipids and proteins.

©Biological oxidation.

©Various techniques - cell fractionation and ultra filtration, centrifugation, Electrophor Spectrophotometry, and radioactive techniques.

Approach:

© Topics to be covered as didactic lectures.

© Postings to the department of biochemistry to familiarize with various techniques

© Record book to be maintained.

7) General Pathology:

© Inflammation and chemical mediators, thrombosis, embolism, necrosis, repair, degeneration, shock, hemorrhage pathogenic mechanisms at molecular level
and blood dyscrasias, Carcinogenesis and Neoplasia.

Approach:

To be covered as seminars and didactic lectures.

8) General Microbiology:

© Definitions of various types of infections.

© Routes of infection and spread

© Sterilization, disinfection and antiseptics.

© Bacterial genetics.

© Physiology and growth of microorganisms.

Approach:

©To be covered as seminars and didactic lectures.

©Record book to be maintained.

9) Basic Immunology

© Basic principles of immunity, antigen and antibody reactions.

© Cell mediated immunity and Humoral immunity.

© Immunology of hypersensitivity.

© Immunological basis of the autoimmune phenomena.

© Immunodeficiency with relevance to opportunistic infections.

© Basic principles of transplantation and tumor immunity.

Approach:

To be covered as didactic lectures.

10) Systemic microbiology/applied microbiology

Morphology, classification, pathogenicity, mode of transmission, methods of pre collection and transport of specimen, for laboratory diagnosis, staining methods, come culture media, interpretation of laboratory reports and antibiotic sensitivity tests.

© Staphylococci

© Streptococci

© Corynebacterium diphtheria

© Mycobacteria

© Clostridia, Bacteroides and fusobacteria © Actinomycetis

© Spirochetes

Virology:

General properties: structure, broad classification of viruses, pathogenesis, pathology of viral infections.

Herpes virus: list of viruses included, lesions produced, pathogenesis, latency principles and laboratory diagnosis.

Hepatitis virus: list of viruses, pathogenesis, and mode of infection, list of diagnostic tests, and their interpretations, methods of prevention and control.

Human Immunodeficiency virus: structure with relevance to laboratory diagnosis, type of infection, laboratory tests and their interpretation, universal precautions, specific precautions and recent trends in diagnosis and prophylaxis.

Mycology:

© General properties of fungi, classification bases on disease, superficial, subcutaneous, deep opportunistic infections.

© General principles of fungal infections, diagnosis rapid diagnosis method of collection of sample and examination for fungi.

Approach:

© To be covered as seminars and didactic lectures

© Postings to the dept. of microbiology to familiarize with relevant diagnostic methods

© Record book to be maintained

11) Oral Biology (oral and dental histology)

© Structure and function of oral, dental and paraoral tissues including their ultra structure, molecular and biochemical aspects.

© Study of morphology of permanent and deciduous teeth (Lectures and practical demonstrations to be given by PG students)

Approach:

© To be covered as seminars and didactic lectures.

© Slide discussion on histological appearance of normal oral tissues.

© Record book to be maintained.

12) Basic molecular biology and techniques: experimental aspects - DNA extraction, PCR, western blotting. **Approach:**

© To be covered as didactic lectures

© Postings in centers where facilities are available for demonstration of routine molecular biology techniques.

© Record book to be maintained.

13) Basic histo techniques and microscopy:

© Routine hematological tests and clinical significance of the same.

© Biopsy procedures for oral lesions.

© Processing of tissues for Paraffin lesions.

© Microtome and principles of microtomy.

© Routine stains, principles and theories of staining techniques

© Microscope, principles and theories of microscopy.

© Light microscopy and various other types including electron microscopy.

© Methods of tissue preparation for ground sections, decalcified sections.

Approach:

© Topics to be covered as seminars.

© Preparation of ground and decalcified sections, tissue processing, sectioning and staining.

© Record book to be maintained

Academic activities:

© Submission of synopsis of dissertation at the end of six months.

© Journal clubs and seminars to be presented by every post graduate student twice a month.

© To attend interdepartmental meetings.

© To attend dental camps based on the survey to be done.

© Part -1 year ending examination to be conducted by the college.

SECOND YEAR

Oral pathology

© Developmental defects of oral and maxillofacial region and abnormalities of teeth Dental caries (Introduction, Epidemiology, microbiology, cariogenic bacterial including properties, acid production in plaque, development of lesion, response of dentine - pulp unit, histopathology, root caries, sequelae and immunology).

© Pulpal and Periapical diseases

© Infections of oral and Para oral regions (bacterial, viral and fungal infection)

© Non - neoplastic disorders of salivary glands

© Bone pathology

© Hematological disorders

© Physical and chemical injuries, allergic and Immunological diseases.

© Cysts of odontogenic origin

© Dermatologic diseases.

© Periodontal diseases

© Oral manifestations of systemic diseases

© Facial pain and neuromuscular disorders including TMJ disorders

© Regressive alterations of teeth

Clinical Pathology:

© Laboratory investigations - Hematology, Microbiology and Urine analysis

© Postings to Clinical Pathology for relevant training

© Record book to be maintained.

Specialized histological techniques and special stains: Special staining techniques for different tissues.

Immunohistochemistry

Preparation of frozen sections and cy to logical smears

Approach:

Training to be imparted in the department or in other institutions having the facility Record book to be maintained

Recording of Case history and Clinicopathological discussions: Approach

Posting to the department of Oral medicine, Diagnosis and Radiology and Oral and Maxillofacial surgery

Record of case histories to be maintained Dermatology

Study of selected mucocutaneous lesions-etiopathogenesis, pathology, clinical presentation and diagnosis.

Approach

© Posting to the dept of Dermatology of a Medical college

© Topics to be covered as Seminars

© Record of cases seen to be maintained.

Oral oncology

Detailed study including Pathogenesis, molecular and biochemical changes of tumor like lesions and Premalignant lesions affecting the hard and soft tissues of oral and para oral tissues

Tumor markers

Approach

To be covered as seminars

Posting to a Cancer center to familiarize with the pathological appearances, diagnosis, radio-diagnosis and treatment modalities.

Oral Microbiology and immunology

© Normal Oral microbial flora

© Defense mechanism of the oral cavity

© Microbiology and immunology of Dental caries and Periodontal diseases © Dental caries (Introduction, epidemiology, microbiology, cariogenic bacteria including properties, acid production in plaque, development of lesion, response of dentin-pulp unit, histopathology, root caries, sequelae and immunology)

© Tumor immunology

© Infections of Pulp and Periapical and periodontal tissues

© Oral sepsis and Bacteremia

© Microbial genetics

© Infections of oral and Para oral regions (bacterial, viral and fungal infections)

Approach

To be covered as seminars Forensic Odontology:

Legal procedures like inquest, medico-legal evidences post mortem examination of violence around mouth and neck, identification of deceased individual-dental importance.

Bite marks rugae patterns and lip prints.

Approach

To be covered as seminars

Posting to a Cancer center to familiarize with the pathological appearances, diagnosis, and radio-diagnosis and treatment modalities

Histopathology - slide discussion Record book to be maintained Laboratory techniques and Diagnosis

© Routine hematological tests and clinical significance of the same

© Microtome and principles of microtomy

© Routine stains, principles and theories of staining techniques

© Microscope, principles and theories of microscopy

© Light microscopy and various other types including electron microscopy

© Methods of tissue preparation for ground sections, decalcified sections.

© Special stains and staining techniques for different tissues

© Immunohistochemistry

© Preparation of frozen sections and cytological smears

Other Topics in Oral Pathology.

Detailed description of diseases affecting oral mucosa, teeth, supporting tissues & jaws

Cysts of the oral & Para-oral regions

Systemic diseases affecting oral cavity

. Approach: Seminars & Slide discussions. Record notebook to be maintained. Training in histopathology slide reporting.

Experimental aspects of Oral diseases

Approach: Posting is desirable in Centers where animal experimentation is carried out to familiarize with laboratory technique's, upkeep & care of experimental animals.

Recent advances in Oral Pathology.

Approach: Update of knowledge in Oral Pathology through study of recent journals & Internet browsing.

Journal Clubs & Group discussions

Academic activities

© Library assignment to be submitted at the end of 6 months © Commencement of dissertation work

© Journal clubs and seminars to be presented by every PG student © Clinicopathological discussions once in a month by every PG student © To attend interdepartmental meetings.

© Lecture and practical classes and slide discussions to be taken for II BDS students in oral and dental anatomy, dental histology and oral physiology. © Year ending examination (theory and practical) to be conducted by the college.

IIIRD YEAR

© Non-neoplastic disorders of salivary glands.

© Bone pathology

© Physical and chemical injuries, allergic and Immunological diseases.

© Cysts of odontogenic origin

© Oral manifestations of systemic diseases

Approach

To be covered as seminars Slide discussions of the same Record book to be maintained

Academic activities

© Visit to center out Animal experimentation to familiarize with Laboratory techniques, upkeep and care of animals

© Completion of Dissertation work and submission of the same, six months before the Final Examination

© Study of Journals, Internet Browsing, and group discussions, to update knowledge in the recent advances in Oral Pathology

© Lecture and Practical demonstrations for third B.D.S students in Oral pathology and Microbiology

© Reporting of histopathology slides

© Journal clubs and Seminars to be presented by every post graduate student twice a month

© Clinicopathological discussions by every student once in a month

© To attend Interdepartmental meetings.

Monitoring learning Progress

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

UNIVERSITY SCHEME OF EXAMINATION

M.D.S. Degree examinations in any branch of study shall consist of dissertation, written paper (Theory) Part I at the end of 1st year and Part II at the end of 3 years Practical/Clinical and Viva voce.

Theory: Part-I: Basic Sciences Paper - 100 Marks

Part-II: Paper-I, Paper-II & Paper-III - 300 Marks (100 Marks for each Paper)

Written examination shall consist of Basic Sciences (Part-I) of three hours duration shall be conducted at the end of First year of MDS course. Part-II Examination shall be conducted at the end of Third year of MDS course.

Part-I : Applied Basic Sciences: Applied Anatomy, embryology, growth and development Genetics, Immunology, anthropology, Physiology, nutrition & Biochemistry, Pathology & Microbiology, virology, Applied pharmacology, Research Methodology and bio statistics, Applied Dental anatomy & histology, Oral pathology & oral Microbiology, Adult and geriatric psychology. Applied dental materials.

Part-II Examination shall consist of Paper-I, Paper-II and Paper-III, each of three hours duration.

Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each.

Paper-III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

DISTRIBUTION OF MARKS:

Theory :

(1) Part I University Examination (100 Marks):-

There shall be 10 questions of 10 marks each (Total of 100 Marks)

(2) Part II (3 papers of 100 Marks):-

(i) Paper-I: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(ii) Paper-II: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(iii) Paper III: 2 out of 3 essay questions (50 x 2 = 100 Marks)

Practical and Clinical Examination : 200 Marks

Viva-voce and Pedagogy : 100 Marks

B. Practical/Clinical - 200 Marks

1. Case Presentation

a) Long case - 20 marks

b) Short case — 10 marks

2. Clinical Hematology (any two investigations) - 20 Marks

Hb%, bleeding time, clotting time, Total WBC count, Differential WBC count and ESR

3. Smear Presentation - 20 marks

4. Cytology or microbial smear and staining

5. Paraffin sectioning and H & E Staining - 30 Marks

6. Histopathology slide discussion - 100 Marks

C. Viva Voce 100 Marks

i. Viva-Voce examination: 80 marks

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes rill components of course contents. It includes presentation and discussion on dissertation also.

iii. Pedagogy Exercise: 20 marks

A topic is given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes

PUBLIC HEALTH DENTISTY

Objectives

At the end of 3 years of training the candidate should be able to: Knowledge

© apply basic sciences knowledge regarding etiology, diagnosis and management of the prevention, promotion and treatment 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 Program.

© 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, teach, guide and take part in research (both basic and clinical), present and publish the outcome at various scientific conferences and journals, both national and international level.

Skills

The candidate should be able to

1. Take history, conduct clinical examination including all diagnostic procedures to arrive at diagnosis at the individual level and conduct survey of the community at 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 Heal at the individual and community level.

2. Plan appropriate Community Oral Health Program, conduct the program and evaluate, at the community level.

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

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

5. Conduct survey and use appropriate methods to impart Oral Health Education.

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

7. Develop the planning, implementation, evaluation and administrative skills to carry out successful community Oral Health Programs.

Values:

1. Adopt ethical principles in all aspects of Community Oral Health Activities.

2. To apply ethical and moral standards while carrying out epidemiological researches.

3. Develop communication skills, in particular to explain the causes and prevention of oral diseases to the patient.

4. Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when

needed and promote teamwork approach.

5. Respect patient's rights and privileges including patients right to information and right to seek a second opinion.

Course Contents:

Paper I: Applied Basic Sciences

I. Applied Anatomy and Histology

A. Applied Anatomy in relation to:

Development of face

Bronchial arches

Muscles of facial expression

Muscles of mastication

TMJ

Salivary gland

Tongue

Salivary gland

Tongue

Hard and soft palate

Infratemporal fossa

Paranasal air sinuses

Pharynx and larynx

Cranial and spinal nerves- with emphasis on trigeminal, facial, glossopharyngeal and hypoglossal nerve

Osteology of maxilla and mandible

Blood supply, venous and lymphatic drainage of head and neck

Lymph nodes of head and neck

Structure and relations of alveolar process and edentulous mouth

Genetics-fundamentals

B. Oral Histology

Development of dentition, Innervations of dentin and pulp

Periodontium-development, histology, blood supply, nerve supply and lymphatic drainage

Oral mucous membrane

Pulp-periodontal complex

II. Applied Physiology and Biochemistry:

- Cell
- Mastication and deglutition
- Food and nutrition
- Metabolism of carbohydrates, proteins and fats

 Vitamins and minerals

 Fluid and electrolyte balance

 Pain pathway and mechanism-types, properties

 Blood composition and functions, clotting mechanism and erythropoiesis, Blood groups and transfusions, Pulse and blood pressure,

 Dynamics of blood flow

 Cardiovascular homeostasis-heart sounds

 Respiratory system: Normal physiology and variations in health and diseases, Asphyxia and artificial respiration

 Endocrinology: thyroid, parathyroid, adrenals, pituitary, sex hormones and pregnancy, Endocrine regulation of blood sugar.

III. A. Applied Pathology:

Pathogenic mechanism of molecular level

Cellular changes following injury

Inflammation and chemical mediators

Oedema, thrombosis and embolism

Hemorrhage and shock

Neoplasia and metastasis

Blood disorders

Histopathology and pathogenesis of dental caries, periodontal disease, oral mucosal lesions, and malignancies, HIV

Propagation of dental infection

B. Microbiology

- Microbial flora of oral cavity
- Bacteriology of dental caries and periodontal disease
- Methods of sterilization
- Virology of HIV, herpes, hepatitis

- Parasitology
- Basic immunology - basic concepts of immune system in human body Cellular and humoral immunity

Antigen and antibody system

Hypersensitivity and Autoimmune diseases

C. Oral Pathology

- Detailed description of diseases affecting the oral mucosa, teeth, supporting tissues and jaws.

IV. Physical and Social Anthropology

- Introduction and definition
- Appreciation of the biological basis of health and disease
- Evolution of human race, various studies of different races by anthropological methods

V. Applied Pharmacology:

- Definition, scope and relations to other branches of medicine, mode of action, bioassay, standardization, pharmacodynamics , pharmacokinetics.
- Chemotherapy of bacterial infections and viral infections - sulphonamides and antibiotics.
- Local anesthesia
- Analgesics and anti-inflammatory drugs
- Hypnotics, tranquilizers and antipyretics
- Important hormones-ACTH, cortisone, insulin and oral antidiabetics.
- Drug addiction and tolerance
- Important pharmacological agents in connection with autonomic nervous system-adrenaline, noradrenaline, atropine
- Brief mention of antihypertensive drugs
- Emergency drugs in dental practice
- Vitamins and haemopoietic drugs

VI. Research Methodology and Biostatistics:

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

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

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

COMPUTERS-Basic operative skills in analysis of data and knowledge of multimedia.

Paper II - Public Health

1. Public Health

- Definition, concepts and philosophy of dental health
- History of public health in India and at international level
- Terminologies used in public health

2. Health

- Definition, concepts and philosophy of health
- Health indicators
- Community and its characteristics and relation to health

3. Disease

- Definition, concepts.
- Multifactorial causation, natural history, risk factors
- Disease control and eradication, evaluation and causation, infection of specific diseases
- Vaccines and immunization

4. General Epidemiology

- Definition and aims, general principles
- Multifactorial causation, natural history, risk factors
- Methods in epidemiology, descriptive, analytical, experimental and classic epidemiology of specific diseases, uses of epidemiology
- Duties of epidemiologist
- General idea of method of investigating chronic diseases, mostly non-infectious nature, epidemic, endemic, and pandemic.
- Ethical conversation in any study requirement
- New knowledge regarding ethical subjects
- Screening of diseases and standard procedures used

5.Environmental Health:

- Impact of important components of the environment of health
- Principles and methods of identification, evaluation and control of such health hazards
- Pollution of air, water, soil, noise, food
- Water purification, international standards of water
- Domestic and industrial toxins, ionizing radiation
- Occupational hazards
- Waste disposal- various methods and sanitation

6. Public Health Education:

- Definition, aims, principles of health education
- Health education, methods, models, contents, planning health education programs

7. Public Health Practice and Administration System In India

8. Ethics and 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

9. Nutrition In Public Health:

- Study of science of nutrition and its application to human problem e Nutritional surveys and their evaluations

e Influence of nutrition and diet on general health and oral health, dental caries, periodontal disease and oral cancers

- Dietary constituents and carcinogenicityGuidelines for nutrition

lO. Behavioral Sciences:

- Definition and introduction
- Sociology: social class, social group, family types, communities and social relationships, culture, its effect on oral health.
- Psychology: definition, development of child psychology, anxiety, fear and phobia, intelligence, learning, motivation, personalities, fear, dentist-patient relationship, modeling and experience

11 Hospital Administration:

- Departmental maintenance, organizational structures
- Types of practices
- Biomedical waste management

12..Health Care Delivery System:

- International oral health care delivery systems - Review
- Central and state system in general and oral health care delivery system if any
- National and health policy
- National health programme
- Primary health care - concepts, oral health in PHC and its implications
- National and international health organizations
- Dentists Act 1928, Dental council of India, Ethics, Indian Dental Association
- Role of W.H.O. and Voluntary organizations in Health Care for the Community

13. Oral Biology And Genetics:

A detailed study of cell structure

Introduction to Genetics, Gene structure, DNA, RNA

Genetic counseling, gene typing

Genetic approaches in the study of oral disorders

Genetic Engineering - Answer to current health problems

Paper III: Dental Public Health

1. Dental Public Health:

History

Definition and concepts of dental public health

Differences between clinical and community dentistry

Critical review of current practice

Dental problems of specific population groups such as chronically ill, handicapped and institutionalized group

2. Epidemiology of Oral Diseases and Conditions

- Dental caries, gingival, periodontal disease malocclusion, dental Fluorosis, oral cancer, TMJ disorders and other oral health related problems.

3. Oral Survey Procedures:

Planning

Implementation

WHO basic oral health methods 1997

Indices for dental diseases and conditions

Evaluation

4. Delivery of Dental Care

Dental person power - dental auxiliaries

Dentist - population ratios,

Public dental care programs

School dental health programs- Incremental and comprehensive care

Private practice and group practice

Oral health policy - National and international policy

5. Payment for Dental care

- Prepayment
- Post-payment
- Reimbursement plans
- Voluntary agencies
- Health insurance

6. Evaluation of Quality of Dental care

- Problems in public and private oral health care system program

- Evaluation of quality of services, governmental control

7. Preventive Dentistry

Levels of prevention

Preventive oral health programs screening, health education and motivation

Prevention of all dental diseases-dental caries, periodontal diseases, oral cancer, malocclusion and Dentofacial anomalies

- Role of dentist in prevention of oral diseases at individual and community level.
- Fluoride

-History

-Mechanism of action

-Metabolism

-Fluoride toxicity

-Fluorosis

-Systemic and topical preparations

-Advantages and disadvantages of each

-Update regarding Fluorosis

-Epidemiological studies

-Methods of fluoride supplements

-Defluoridation techniques

- Plaque control measures-

-Health Education

-Personal oral hygiene

-Tooth brushing technique

-Dentifrices, mouth rinses

- Pit and fissure sealant, ART
- Preventive oral health care for medically compromised individual
- Update on recent preventive modalities
- Caries vaccines
- Dietary counseling

8. Practice Management

- Definition
- Principles of management of dental practice and types
- Organization and administration of dental practice
- Ethical and legal issues in dental practice
- Current trends Structured Training Schedule First Year Seminars

- 5 seminars in basic sciences subject,
- To conduct 10 journal clubs Library assignment on assigned topics - 2
- Submission of synopsis for dissertation-within 6 months
- Periodic review of dissertation at two monthly intervals

Clinical Training

1. Clinical assessment of patient

2. Learning different criteria and instruments used in various oral indices - 5 cases each

- Oral Hygiene Index - Greene and Vermillion
- Oral Hygiene Index - Simplified
- DMF - DMF (T), DMF (S)
- Def
- Fluorosis Indices - Dean's Fluorosis Index, Tooth Surface Index for Fluorosis and the Thylstrup Fejerskov Index.

Community Periodontal Index (CPI) Plaque Index-Silness and Loe WHO Oral Health Assessment Form - 1997

- Carrying out treatment (under comprehensive oral health care) of 10 patients - maintaining complete records.

Field Programme:

1. Carrying out preventive programs and health education for school children of the adopted school.

2. School based preventive programs-

- Topical Fluoride application-Sodium Fluoride, Stannous Fluoride, AckW* Phosphate Fluoride preparations and Fluoride varnishes, Fluoride mouth rinses
- Pit and Fissure Sealant - chemically cured (GIC), light cured
- Minimal Invasive Treatment-Preventive Resin Restorations (PRR), Atraumatic Restorative Treatment (ART)
- Organizing and carrying out dental camps in both urban and rural areas.

3. Visit to slum, water treatment plant, sewage treatment plant, and Milk dairy, Public Health Institute, Anti-Tobacco Cell, Primary Health Center and submitting reports.

4. In additions the postgraduate shall assist and guide the under graduate students in their clinical and field programs.

Second Year Seminars

- Seminars in Public Health and Dental Public Health topics
- Conducting journal clubs
- Short term research project on assigned topics - 2

- Periodic review of dissertation at monthly reviews

Clinical Training-Continuation of the clinical training

1. Clinical assessment of patient

2. Learning different criteria and instruments used in various oral indices e Oral Hygiene Index - Greene and Vermillion

- Oral Hygiene Index – Simplified
- DMF - DMF (T), DMF (S)
- Def t/s
- Fluorosis Indices - Dean's Fluorosis Index, Tooth Surface Index for Fluorosis, Thylstrup and Fejerskov Index
- Community Periodontal Index (CPI)
- Plaque Index-Silness and Loe
- WHO Oral Health Assessment Form -1987
- Carrying out treatment (under comprehensive oral health care) of 10 patients - maintaining complete records

Field Program - Continuation of field program

1. Carrying out school dental health education

2. School based preventive programs-

- Topical Fluoride application-Sodium Fluoride, Stannous Fluoride, Acidulated Phosphate Fluoride preparations and Fluoride varnishes, Fluoride mouth rinses
- Pit and Fissure Sealant - chemically cured (GIC); light cured
- Minimal Invasive Treatment-Preventive Resin Restorations (PRR), Atraumatic Restorative Treatment (ART)
- Organizing and carrying out dental camps in both urban and rural areas.

5. Assessing oral health status of various target groups like School children, Expectant mothers Handicapped, Underprivileged, and geriatric populations. Plan dental manpower and financing dental health care for the above group.

6. Application of the following preventive measures in clinic-10 Cases each.

- Topical Fluoride application - Sodium Fluoride, Stannous Fluoride, Acidula' Phosphate Fluoride preparations and Fluoride varnishes.
- Pit and Fissure Sealant

7. Planning total health care for school children in an adopted school:

a) Periodic surveying of school children

b) Incremental dental care

c) Comprehensive dental care

8. Organizing and conducting community oral health surveys for all oral condition- 3 surveys

9. In addition the postgraduate shall assist and guide the under graduatestuc in their clinical and field programs

10. To take lecture classes (2) for Undergraduate students in order to learn teaching met (pedagogy) on assigned topic.

Third Year: Seminars

- Seminars on recent advances in Preventive Dentistry and Dental Public Health
- Critical evaluation of scientific articles -10 articles
- Completion and submission of dissertation

Clinical Training

1. Clinical assessment of patient
2. Learning different criteria and instruments used in various oral indices - 5 each

- Oral Hygiene Index - Greene and Vermillion
- Oral Hygiene Index – Simplified
- DMF - DMF (T), DMF (S)
- Def t/s
- Fluorosis Indices - Dean's Fluorosis Index, Tooth Surface Index for FluortT Thylstrup and Fejerskov Index
- Community Periodontal Index (CPI)
- Plaque Index-Silness and Loe
- WHO Oral Health Assessment Form -1987
- Carrying out treatment (under comprehensive oral health care) of 10 patients - maintaining complete records

3. Carrying out school dental health education
4. School based preventive programs-

- Topical Fluoride application - Sodium Fluoride, Stannous Fluoride, Acidulated Phosphate Fluoride preparations and Fluoride varnishes.
- Pit and Fissure Sealant
- Minimal Invasive Techniques - Preventive Resin Restorations (PRR), Atraumatic Restorative Treatment (ART)

5. To take lecture classes (2) for Undergraduate students in order to learn teaching methods (pedagogy) on assigned topic
6. Exercise on solving community health problems -10 problems
7. Application of the following preventive measures in clinic -10 cases each.

- Topical Fluoride application - Sodium Fluoride, Stannous Fluoride, Acidulated Phosphate Fluoride preparations
- Pit and Fissure sealants

8. Dental - health education training of school teachers, social workers, health workers,
9. Posting at dental satellite centers/ nodal centers
10. In addition the post graduate shall assist and guide the under graduate students in their clinical and field programs

Before completing the third year M.D.S., a student must have attended two national conferences. Attempts should be made to present two scientific papers, publication of a scientific article in a journal.

Monitoring Learning Process:

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

UNIVERSITY SCHEME OF EXAMINATION

M.D.S. Degree examinations in any branch of study shall consist of dissertation, written paper (Theory) Part I at the end of Ist year and Part II at the end of 3 years Practical/Clinical and Viva voce.

Theory: Part-I: Basic Sciences Paper - 100 Marks

Part-II: Paper-I, Paper-II & Paper-III - 300 Marks (100 Marks for each Paper)

Written examination shall consist of Basic Sciences (Part-I) of three hours duration shall be conducted at the end of First year of MDS course. Part-II Examination shall be conducted at the end of Third year of MDS course.

Part-I : Applied Basic Sciences: Applied Anatomy, embryology, growth and development Genetics, Immunology, anthropology, Physiology, nutrition & Biochemistry, Pathology & Microbiology, virology, Applied pharmacology, Research Methodology and bio statistics, Applied Dental anatomy & histology, Oral pathology & oral Microbiology, Adult and geriatric psychology. Applied dental materials.

Part-II Examination shall consist of Paper-I, Paper-II and Paper-III, each of three hours duration.

Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each.

Paper-III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

DISTRIBUTION OF MARKS:

Theory :

(1) Part I University Examination (100 Marks):-

There shall be 10 questions of 10 marks each (Total of 100 Marks)

(2) Part II (3 papers of 100 Marks):-

(i) Paper-I: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(ii) Paper-II: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(iii) Paper III: 2 out of 3 essay questions (50 x 2 = 100 Marks)

Practical and Clinical Examination : 200 Marks

Viva-voce and Pedagogy : 100 Marks

B. Practical / Clinical Examination : 200 Marks

1. Clinical examination of at least 2 patients representing the community- includes history, main complaints, examination and recording of the findings, using indices for the assessment of oral health and presentation of the observation including diagnosis, comprehensive treatment planning. (50 Marks -1 Hrs)

2. Performing – MAXIMUM – 50 marks

- One of the treatment procedures as per treatment plan. (Restorative, surgical, rehabilitation)

a. Preventive oral health care procedure.

b. One of the procedures specified in the curriculum

3 Critical evaluation of a given research article published in an international journal

(50 Marks -1 Hour)

4 Problem solving - a hypothetical oral health situation existing in a community is given with sufficient data. The student as a specialist in community dentistry is expected to suggest practical solutions to the existing oral health situation of the
given community.
(50 Marks -1 Hour)
C. Viva Voce 100 Marks
i. Viva-Voce examination: 80 marks
All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation
also.
ii. Pedagogy Exercise: 20 marks
A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minute.

PEDIATRIC DENTISTRY

At the end of 3 years of training the candidate should be able to
1. Create not only a good oral health in the child but also a good citizen tomorrow.
2. Instill a positive attitude and behavior in children
3. Understand the principles of prevention and preventive dentistry right from birth to adolescence

4. Guide and counsel the parents in regards to various treatment modalities including different facets of preventive dentistry
5. Prevent and intercept developing malocclusion
Skills
1. Obtain proper clinical history, methodological examination of the child patient, perform essential diagnostic procedures and interpret them, and arrive at a reasonable diagnosis and treat appropriately
2. Be competent to treat dental diseases which are occurring in child patient.
3. Manage to repair and restore the lost tooth structure to maintain harmony between both hard and soft tissues of the oral cavity.
4. Manage the disabled children effectively and efficiently, tailored to the needs of individual requirement and conditions.
Attitudes
1. Develop an attitude to adopt ethical principles in all aspects of Pedodontic practice.
2. Professional honesty and integrity are to be fostered

3. Treatment care is to be delivered irrespective of the social status, cast, creed, and religion of the patients.

4. Willingness to share the knowledge and clinical experience with professional colleagues.

5. Willingness to adopt, after a critical assessment, new methods and techniques of Pedodontic management developed from time to time, based on scientific research, which are in the best interest of the child patient.

6. Respect child patient's rights and privileges, including child patients right to information and right to seek a second opinion.

7. Develop an attitude to seek opinion from allied medical and dental specialities, as and when required

Course contents

1. Applied Anatomy & genetics

2. Applied Physiology

3. Applied Pathology

4. Nutrition and Die tics

5. Growth & Development: Prenatal and postnatal development of cranium, face, jaws, teeth and supporting structures. Chronology of dental development and development of occlusion. Dimensional changes in dental arches. Cephalometric evaluation of growth.

6. Child Psychology: Development & Classification of behavior, personality, intelligence in children, theories of child psychology, stages of psychological child development, fear anxiety, apprehension dt its management

7. Behavior Management: Non- pharmacological 8b Pharmacological methods.

8. Child Abuse & Dental Neglect

9. Conscious Sedation, Deep Sedation 8s General Anesthesia in Pediatric Dentistry: (Including Other Drugs, Synergic & Antagonistic Actions of Various Drugs Used in Children

10. Preventive Pedodontics: Concepts, chair bide preventive measures for dental diseases, high-risk caries including rampant & extensive caries - Recognition, Features & Preventive Management, Pit and Fissures Sealants, Oral Hygiene measures, Correlation of brushing with dental caries and periodontal diseases. Diet 8s Nutrition as related to dental caries. Diet Counseling

11. Dental Plaque: Definition, Initiation, Pathogenesis, Biochemistry, and Morphology' & Metabolism.

12. Microbiology & Immunology as related to Oral Diseases in Children. Basic concepts, immune system in human body, Auto Immune diseases, Histopathology, Pathogenesis, Immunology of dental caries, Periodontal diseases. Tumors, Oral Mucosal lesions etc.

13. Gingival 8s Periodontal diseases in Children:

- Normal Gingiva & Periodontium in children.
- Gingival & Periodontal diseases - Etiology, Pathogenesis, Prevention & Management

14. Pediatric Operative Dentistry

- Principle Of Operative Dentistry along with modifications of materials/past, current & latest including tooth colored materials.
- Modifications required for cavity preparation in primary and young permanent teeth.
- Various Isolation Techniques
- Restorations of decayed primary, young permanent and permanent teeth in children using various restorative material like Glass Ionomer, Composites, Silver, Amalgam & latest material (gallium)
- Stainless steel, Polycarbonate 8s Resin Crowns / Veneers & fibre pvit systems.

15. Pediatric Endodontics:

a. Primary Dentition: - Diagnosis of pulpal diseases and their management - Pulp capping, Pulpotomy, Pulpectomy (Materials & Methods), Controversies 8s recent concepts.

b. Young permanent teeth and permanent teeth, Pulp capping, Pulpotomy, Apexogenesis, Apexification, Concepts, Techniques and Materials used for different procedures.

c. Recent advances in Pediatric diagnosis and Endodontics.

16. Prosthetic consideration in-Paediatric Dentistry.

17. Traumatic Injuries in Children:

- Classifications & Importance.
- Sequalae & reaction of teeth to trauma.
- Management of Traumatized teeth with latest concepts.
- Management of jaw fracture in children.

18. Interceptive Orthodontics:

a. Concepts of occlusion and esthetics: Structure and function of all anatomic components of occlusion, mechanics of articulations, recording of masticatory function, diagnosis of Occlusal dysfunction, relationship of TMJ anatomy and pathology and related neuromuscular physiology.

b. A comprehensive review of the local and systemic factors in the causation of malocclusion.

c. Recognition and management of normal and abnormal developmental occlusions in primary, mixed and permanent dentitions in children (Occlusal Guidance).

d. Biology of tooth movement: A comprehensive review of the principles of teeth movement Review of contemporary literature. Histopathology of bone and Periodontal ligament, Molecular and ultra cellular consideration in tooth movement.

e. Myofunctional appliances: Basic principles, contemporary appliances: Design & Fabrication

f. Removable appliances: Basic principles, contemporary' appliances: Design & Fabrication

g. Case selection & diagnosis in interceptive Orthodontics (Cephalometric, Image processing, Tracing, Radiation hygiene, Video imaging 8s advance Cephalometric techniques).

h. Space Management: Etiology, Diagnosis of space problems, analysis, Biomechanics, Planned extraction in interception orthodontics.

19. Oral Habits in Children:

- Definition, Etiology & Classification
- Clinical features of digit sucking, tongue thrusting, mouth breathing 8s various other secondary habits.
- Management of oral habits in children

20. Dental ware of Children with special needs:

- Definition Etiology, Classification, Behavioral, Clinical features 8s Management of children with:
- Physically handicapping conditions
- Mentally compromising conditions
- Medically compromising conditions
- Genetic disorders

21. Oral manifestations of Systemic Conditions in Children 8s their Management

22. Management of Minor Oral Surgical Procedures in Children

23. Dental Radiology as related to Pediatric Dentistry

24. Cariology

- Historical background
- Definition, Etiology & 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 8s Management.
- Role of diet and nutrition in Dental Caries
- Dietary modifications 8s Diet counseling.
- Subjective 8s objective methods of Caries detection with emphasis on Caries Activity tests, Caries prediction, Caries susceptibility 8s their clinical Applications

25. Pediatric Oral Medicine 8s Clinical Pathology: Recognition 8s Management of developmental dental anomalies, teething disorders, stomatological conditions, mucosal lesions, viral infections etc.

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

27. Dental Emergencies in Children and their Management.

28. Dental Materials used in Pediatric Dentistry.

29. Preventive Dentistry:

- Definition

- Principles 8s Scope
- Types of prevention
- Different preventive measures used in Pediatric Dentistry including fissure sealants and caries vaccine.

30. Dental Hearth Education 8s School Dental Health Programmes

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

32. Fluorides:

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

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

34. Counseling in Padeiatric Dentistry

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

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

37. Comprehensive Infant Oral Health Care.

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

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

40. Setting up of Pedodontics & Preventive Dentistry Clinic.

41. Emerging concept in Paediatric Dentistry of scope of laser/minimum invasive procedures :

1ST YEAR

Preclinical Work

(Duration - first 6 Months of First Year MDS) (One On Each Exercise)

1. Carving of all deciduous teeth
2. Basic wire bending exercises
3. Fabrication of

a. Maxillary bite plate / Hawley's'

b. Maxillary expansion screw appliance

c. Canine retractor appliance

d. All habit breaking appliances

e. Two Myofunctional appliance

i. Removable type
ii. Fixed type
iii. Partially fixed and removable

f. Making of inclined plane appliance
g. Feeding appliances
4. Basic soldering exercise I - making of a lamppost of stainless steel wire pieces of different gauges soldered on either side of heavy gauge main post.
5. Fabrication of space maintainers
a. Removable type-

- Unilateral Non - functional space maintainer
- Bilateral Non-Functional space maintainer
- Unilateral functional space maintainer
- Bilateral functional space maintainer

b. Space Regainers -

- Hawley's appliances with Helical space regainer
- Removable appliance with Slingshot space regainer
- Removable appliance with Dumbbell space regainer

c. Fixed Space maintainers

- Band & long loop space maintainer
- Band & short loop space maintainer
- Mayne's space maintainer
- Transpalatal arch space maintainer
- Nance Palatal holding arch
- Nance Palatal holding arch with canine stoppers
- Gerbcr space regainer
- Distal shoe appliance

a. Active space maintainers
b. For guiding the eruption of first permanent molar - rags

c. Arch holding device

d. Functional space maintainer

6. Basics for spot welding exercise

7. Collection of extracted deciduous and permanent teeth

a. Sectioning of the teeth at various levels and planes

b. Drawing of section and shapes of pulp

c. Phantom Head Excersies : Performing ideal cavity preparation for various restorative materials for both Deciduous and permanent teeth

d. Performing pulpotomy, root canal treatment and Apexification procedure

i) Tooth preparation and fabrication of various temporary and permanent restorations on fractured anterior teeth.

ii) Preparation of teeth for various types of crowns

iii) Laminates/veneers

iv) Bonding & banding exercise

8. Performing of behavioral rating and IQ tests for children.

9. Computation of: -

Caries index and performing various carrier activity test. Oral Hygiene Index

Periodontal Index

Fluorosis Index

10. Surgical Exercises : a. Fabrication of splints b. Type of Wiring c. Suturing, various pvit system, prcing & porm. tuli

a. Taking of periapical, occlusal, bitewing radiographs of children

b. Developing and processing of films, thus obtained

c. Tracing of soft tissue dental and skeletal landmarks as observed on Cephalometric radiographs and drawing of various planes and angles, further interpretation of Cephalometric radiographs is analysis.

d. Mixed dentition cast analysis

11. Library assignment 12.Synopsis

Clinical work Requirements from 7 to 36 months

The following is the minimum requirement to be completed before the candidate can be considered eligible to appear in the final M.D.S Examinations: -

No,	Clinical Work	Total	7 To 12 Months	13 To 24 Months	25 To 36 Months
1	Behavior Management of different age groups children with complete records.	17 '	2	10	5

2	Detailed Case evaluation with complete records, treatment planning and presentation of cases with chair side and discussion	17	2	10	5
3	Step-by-step chair side preve - ntive dentistry scheduled for high risk children with gingival and periodontal diseases & Dental Caries	11	1	5	5
4	Practical application of Preve - ntive dentistry concepts in a class of 35-50 chiidren& Dental Health Education & Motivation.	7	1	4	2
5	Pediatric Operative Dentistry with application of recent concepts.(a). Management of Dental Caries (I) Class I	50	30	10	10
	(II) Class II	100	40	50	10
	(III) Other Restorations 100	20	50	30	
	(b). Management of traumatized	15	04	06	05
	anterior teeth				
	(c) Aesthetic Restorations	25	05	10	10
	(d). Pediatric Endodontic				

	Procedures-				
	Deciduous teeth				
	Pulpotomy /Pulpectomy	150	30	50	70
	Permanent Molars-	20	3	7	10
	Permanent Incisor-	15	2	3	10
	Apexification &	20	02	08	10
	Apexogenesis				
6	Stainless Steel Crowns	50	10	20	20
7	Other Crowns	05	01	02	02
8	Fixed Space Maintainers	30	08	12	10

9	Removable Space Maintainers	20	05	07	08
10	Functional Maintainers	05	01	02	02
11	Preventive measures like fluoride applications & Pit & Fissure Sealants applications with complete follow-up and diet counseling	20	08	08	04
12	Special Assignments(i) School Dental Health Programmes	03	01	01	01
	(ii) Camps etc.,	02	01	01	

13 Library usage

14. Laboratory usage

15. Continuing Dental Health Programme

(The figures given against Sl. No. 4 to 12 are the minimum number of recommended procedures to be performed)

Monitoring Learning Progress

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

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M.D.S. Degree examinations in any branch of study shall consist of dissertation, written paper (Theory) Part I at the end of Ist year and Part II at the end of 3 years Practical/Clinical and Viva voce.

Theory: Part-I: Basic Sciences Paper - 100 Marks

Part-II: Paper-I, Paper-II & Paper-III - 300 Marks (100 Marks for each Paper)

Written examination shall consist of Basic Sciences (Part-I) of three hours duration shall be conducted at the end of First year of MDS course. Part-II Examination shall be conducted at the end of Third year of MDS course.

Part-I : Applied Basic Sciences: Applied Anatomy, embryology, growth and development Genetics, Immunology, anthropology, Physiology, nutrition & Biochemistry, Pathology & Microbiology, virology, Applied pharmacology, Research Methodology and bio statistics, Applied Dental anatomy & histology, Oral pathology & oral Microbiology, Adult and geriatric psychology. Applied dental materials.

Part-II Examination shall consist of Paper-I, Paper-II and Paper-III, each of three hours duration.

Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each.

Paper-III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

DISTRIBUTION OF MARKS:

Theory :

(1) Part I University Examination (100 Marks):-

There shall be 10 questions of 10 marks each (Total of 100 Marks)

(2) Part II (3 papers of 100 Marks):-

(i) Paper-I: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(ii) Paper-II: 2 long essay questions of 25 marks each and 5 short essays of 10 marks each. (Total of 100 Marks)

(iii) Paper III: 2 out of 3 essay questions (50 x 2 = 100 Marks)

Practical and Clinical Examination : 200 Marks

Viva-voce and Pedagogy : 100 Marks

A. Practical Examination 200 Marks

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First Day:

1. Case Discussion, Pulp Therapy i.e. Pulpectomy on a Primary Molar.

Case Discussion 20 marks

Rubber Dam application 10 marks

Working length X-ray 20 marks

Obturation : 20 marks

Total 70 marks

Case Discussion, Crown preparation on a Primary Molar for Stainless steel crown and cementation of the same.

Case discussion 10 marks

Crown Preparation 20 marks

Crown selection and Cementation 20 marks

Total 50 marks

Case discussion, band adaptation for fixed type of space maintainer and-impression making.

Case discussion 20 marks

Band adaptation 20 marks

Impression 20 marks

Total 60 marks

Second Day:

1. Evaluation of Fixed Space Maintainer and Cementation : 20 marks

B. Viva Voce : 100 Marks

i. Viva-Voce examination: 80 marks

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

ii. Pedagogy Exercise: 20 marks

A topic is given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8-10 minutes

ORAL MEDICINE AND RADIOLOGY

Objectives:

At the end of 3 years of training the candidate should be able to

Knowledge: Theoretical, Clinical and practical knowledge of all mucosal lesions, diagnostic procedures pertaining to them and latest information of imaging modules.

Skills and Attitude: Three important skills need to be imparted

1. . Diagnostic skill in recognition of oral lesions and their management
2. Research skills in handling scientific problems pertaining to oral treatment
3. Clinical and Didactic skills in encouraging younger doctors to attain learning objectives Attitudes:

Positive mental attitude and the persistence of continued learning need to be inculcated

Course Contents

Paper I: Applied Basic Sciences Applied Anatomy

1. Gross anatomy of the face:

a. Muscles of Facial Expression And Muscles Of Mastication

b. Facial nerve

c. Facial artery

d. Facial vein

e. Parotid gland and its relations

2. Neck region:

a. Triangles of the neck with special reference to Carotid, Digastric triangles and midline structures

b. Facial spaces

c. Carotid system of arteries, Vertebral Artery, and Subclavian arteries

d. Jugular system Internal jugular

External jugular

e. Lymphatic drainage

f. Cervical plane

g. Muscles derived from Pharyngeal arches

h. Infratemporal fossa in detail and temporomandibular joint

i. Endocrine glands Pituitary

j. Sympathetic chain

k. Cranial nerves-V, VII, IX, XI, & XII

- Thyroid
- Parathyroid

I. Exocrine glands

- Parotid

- Thyroid
- Parathyroid

3. Oral Cavity:

a. Vestibule and oral cavity proper b.Tongue and teeth

c.Palate - soft and hard 4.Nasal Cavity

a. Nasal septum

b. Lateral wall of nasal cavity c.Paranasal air sinuses 5.Pharynx:

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

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

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

Embryology

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

Histology:

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

Physiology:

1. General Physiology:

- Cell
- Body Fluid Compartments
- Classification
- Composition

- Cellular transport
- RMP and action potential Muscle Nerve Physiology

2. Structure of a neuron and properties of nerve fibers
3. Structure of muscle fibers and properties of muscle fibers
4. Neuromuscular transmission
5. Mechanism of muscle contraction

Blood:

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

Respiratory System:

- Air passages, composition of air, dead space, mechanics of respiration with pressure and volume changes

Lung volumes and capacities and applied aspects
Oxygen and carbon dioxide transport
Neural regulation of respiration
Chemical regulation of respiration
Hypoxia, effects of increased barometric pressure and decreased barometric pressure

- Cardio-Vascular System:
- Cardiac Cycle
- Regulation of heart rate/ Stroke volume / cardiac output / blood flow
- Regulation f blood pressure
- Shock, hypertension, cardiac failure

Excretory system

- Renal function tests

Gastro - intestinal tract:

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

Endocrine system:

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

Central Nervous System:

- Ascending tract with special references to pain pathway

Special Senses:

- Gustation and Olfaction

Biochemistry

3. Carbohydrates - Disaccharides specifically maltose, lactose, sucrose

-Digestion of starch/absorption of glucose

-Metabolism of glucose, specifically glycolysis, TCA cycle, gluconeogenesis

-Blood sugar regulation

-Glycogen storage regulation

-Glycogen storage diseases

-Galactosemia and fructosemia

2. Lipids

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

3. Protein

-Amino acids- essential/non essential, complete/ incomplete proteins

- Transamination/ Deamination (Definition with examples)

-Urea cycle

- Tyrosine- Hormones synthesized from tyrosine

-In born errors of amino acid metabolism

- Methionine and transmethylation

4. Nucleic Acids

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

5. Minerals

- Calcium/Phosphorus metabolism specifically regulation of serum calcium levels

-Iron metabolism

- Iodine metabolism

-Trace elements in nutrition

6. Energy Metabolism

- Basal metabolic rate

- Specific dynamic action (SDA) of foods

7. Vitamins

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

Pathology:

1. Inflammation:

- Repair and regeneration, necrosis and gangrene
- Role of complement system in acute inflammation
- Role of arachidonic acid and its metabolites in acute inflammation
- Growth factors in acute inflammation
- Role of molecular events in cell growth and intercellular signaling cell surface receptors
- Role of NSAIDS in inflammation
- Cellular changes in radiation injury and its manifestations

Homeostasis

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

Shock

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

Hypersensitivity:

- Anaphylaxis
- Type II Hypersensitivity
- Type III Hypersensitivity

- Cell mediated Reaction and its clinical importance
- Systemic Lupus Erythmatosus
- Infection and infective granulomas

Neoplasia:

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

Others:

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

Phamacology:

1. Definition of terminologies used

1. Dosage and mode of administration of drugs

2. Action and fate of drugs in the body

3. Drugs acting on the CNS

4. Drug addiction, tolerance and hypersensitive reactions

5. General and local anesthetics, hypnotics, analeptics, and & tranquilizers
6. Chemotherapeutics and antibiotics
7. Analgesics and anti - pyretics
8. Anti - tubercular and anti - syphilitic drugs 10.Antiseptics, sialogogues, and anti - sialogogues
11. Haematinics
12. Anti - diabetics
13. Vitamins - A B Complex, C, D, E, K
14. Steroids

Paper II: Oral And Maxillofacial Radiology

Study includes Seminars / lectures / Demonstrations

1. History of radiology, structure of x - ray tube, production of x - ray, property of x rays
2. Biological effects of radiation
3. Filtration of collimation, grids and units of radiation
4. Films and recording media
5. Processing of image in radiology
6. Design of x -ray department, dark room and use of automatic processing units
7. Localization by radiographic techniques
8. Faults of dental radiographs and concept of ideal radiograph
9. Quality assurance and audit in dental radiology
10. Extra - oral-imaging techniques
11. OPG and other radiologic techniques
12. Advanced imaging technique like CT Scan, MRI, Ultras one & thermo graphic
13. Radio nucleotide techniques
14. Contrast radiography in salivary gland, TMJ, and other radiolucent pathologies
15. Radiation protection and ICRP guidelines
16. Art of radiographic report, writing and descriptors preferred in reports
17. Radiograph differential diagnosis of radiolucent, radio opaque and mixed lesions
18. Digital radiology and its various types of advantages

Paper III: Oral Medicine, therapeutics and laboratory investigations

1. Study includes seminars / lectures / discussion
2. Methods of clinical diagnosis of oral and systemic diseases as applicable to oral tissue including modern diagnostic techniques
3. Laboratory investigations including special investigations of oral and bro - facial diseases
4. Teeth in local and systemic diseases, congenital, and hereditary disorders

5. Oral manifestations of systemic diseases

6. Oro - facial pain

7. Psychosomatic aspects of oral diseases

8. Management of medically compromised patients including medical emergencies in the dental chair

9. Congenital and Hereditary disorders involving tissues of oro facial region

10. Systemic diseases due to oral foci of infection

11. Hematological, Dermatological, Metabolic, Nutritional, & Endocrinal conditions with oral manifestations

12. Neuromuscular diseases affecting oro -facial region

13. Salivary gland disorders

14. Tongue in oral and systemic diseases

15. TMJ dysfunction and diseases

16. Concept of immunity as related to oro - facial lesions, including AIDS

17. Cysts, Neoplasms, Odontomes, and fibro - osseous lesions 18.Oral changes in Osteo - dystrophies and chondro - dystrophies 19.Pre malignant and malignant lesions of oro facial region 20.Allergy and other miscellaneous conditions

21. Therapeutics in oral medicine -clinical pharmacology

22. Forensic odontology

23. Computers in oral diagnosis and imaging

24. Evidence based oral care in treatment planning

Essential Knowledge

Basic medical subjects, Oral Medicine, Clinical Dentistry, Management of Medical Emergencies, Oral Radiology, Techniques and Inter - Operation, Diagnosis of Oro-facial

Disorders

Procedural and Operative Skills:

(The numbers mentioned are minimum to be performed by each candidate)

1st Year

Observe, Assist, & Perform under supervision

1. *Examination of Patient - Case history recordings -50*

- FNAC & Biopsy - 5 each

Observe, Assist, & Perform under supervision

2. Intra - oral radiograph

Perform an interpret -100

2nd year

1. *Dental treatment to medically compromised patients*

- - Observe, *assist, and perform under supervision*

2. *Extra - oral radiographs, digital radiography* - 25

- - *Observe, assist and perform under supervision*

Operative skills:

1. *Giving intra - muscular and intravenous injections*
2. *Administration of oxygen and life saving drugs to the patients*
3. *Performing basic CPR and certification by Red Cross*

3rd Year

All the above

Performed independently-Case history: Routine cases	-25 Interesting Cases - 25
Intra - oral Radiographs	- 100
Periapical view	- 50
Bitewing view	- 25
- Occlusal view	- 25
Extra-oral radiographs of different views	- 50 Monitoring Learning Progress

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(iii) Paper III: 2 out of 3 essay questions (50 x 2 = 100 Marks)

Practical and Clinical Examination : 200 Marks

Viva-voce and Pedagogy : 100 Marks

B. Practical / Clinical Examination 200 Marks

1st Day

Clinical Case Presentation

2 Spotters 2 x 1 0 = 20 Marks

2 Short Cases 2 x 15 = 30 Marks

1 Long Case 1 x 50 = 50 Marks

Total =100 Marks Radiology Exercise

I.A) One Intra Oral Radiograph 10 Marks

B) One Occlusal Radiograph 30 Marks

II. A) Two Extra Oral Radiograph 2 x 30 = 60 Marks Including technique and interpretation

2"* Day

C. Viva Voce : 100 Marks

i. Viva-Voce examination: 80 marks

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents. It includes presentation and discussion on dissertation also.

ii. Pedagogy Exercise: 20 marks

A topic is given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 8 10 minutes

SECTION IV

TEACHING/LEARNING ACTIVITIES AND MONITORING

LEARNING PROGRESS

All the candidates registered for MDS course in various specialties shall pursue the course for a period of 3 years as full time students.During this period, each student shall take part actively in learning activities designed by the institution / university. A list is given below. Institutions may include additional activities, if so, desired.

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also helps students

to evaluate themselves. The monitoring be done by the staff of the department based on participation of students in various teaching / learning activities using checklists. Model Checklists are given in this section. They may be copied and used. The number of activities attended and the topics prevented are to be recorded in log book. The log book should periodically be validated by the supervisors.

i) Acquisition of Knowledge

Journal Review Meeting (Journal Club): The trainees should make presentation from the allotted journals of selected article at least five times in a year. The ability to do literature search, in depth study, presentation skills, and use of audio- visual aids are to be assessed during presentation. The assessment be made by faculty members and peers attending the meeting using Model Checklist 1 in Section IV.

Seminars: The seminars may be held at least twice a week in each postgraduate department. All candidates are expected to participate actively and enter relevant detail in the logbook. Each candidate shall make at least five seminar presentations in each year. The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth study, presentation skills and use of audio- visual aids are to be assessed using the Model Checklist 2, in Section IV.

Symposium: It is recommended to hold symposiums on topics covering multiple disciplines

Clinico-Pathological Conferences (CPC): The CPCs should be held once in a month involving the faculties in Oral Medicine and Radiology, Oral Pathology and concerned clinical departments. The PG student should be encouraged to present the clinical details, radiological, and histo-pathological interpretations, and participation in the discussion. All departments should attend CPCs.

Interdepartmental meetings: To bring in more integration among various specialities, interdepartmental meetings are recommended, chaired by the dean, with all heads of post graduate departments, at least once a month.

ii) Clinical skills

Day to Day work: Skills in outpatient and ward work should be assessed periodically.

The assessment should include the candidate's sincerity and punctuality, analytical ability and communication skills (see Model Checklist 3, Section IV).

Clinical meetings : Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list (see Model checklist 4, Section IV).

Clinical and Procedural skills : The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation. Particulars are recorded by the student in the log book. (Table No.3, Section IV)

iii) Teaching skills: All the candidates shall be encouraged to take part in undergraduate teaching programs, either in the form of lectures or group discussions. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students (See Model checklist 5, Section IV)

iv) Periodic tests: The concerned departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practicals / clinicals and viva voce.

vii) Work Diary / Log Book: Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.

viii) Records: Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or DCI.

Continuing dental education programmes: Each postgraduate department is recommended to organize these programs on regular basis involving other institutions. The trainees shall also be encouraged to attend such programs conducted elsewhere

Conferences / workshops / advance courses: The trainee shall be encouraged not only to attend conferences/workshops/advanced courses, but also to present at least 2 papers at state, national specialty meetings during their training period.

Dissertation: Every candidate shall prepare a dissertation based on the clinical or experimental work or any other study conducted by them under the supervision of the post graduate guide. (See Model checklist 6 & 7, Section IV) Log book

The log book is a record of the important activities of the candidates during the training, Internal assessment should be based on the evaluation of the log book. Collectively, log books are a tool for the evaluation of the training programme of the institution by exte agencies. The record includes academic activities as well as the presentations and p carried out by the candidate.

Format for the log book for the different activities is given in Tables 1,2 and 3 of Section IV Copies may be made and used by the institutions.

Procedure for defaulters: Every department should have a committee to review such situations. The defaulting candidate is counseled by the guide and head of the department. In extreme cases of default the departmental committee may recommend that defaulting candidate be withheld from appearing the examination, if she/he fails to fulfill the requirements in spite of being given adequate chances to set himself or herself right.

Section V Ethics in Dentistry

Introduction: There is a definite shift now from the traditional patient and doctor relation and delivery of dental care. With the advances in science and technology and the increased needs of the patient, their families and community, there is a concern for the health of community as a whole. There is a shift to greater accountability to the society. specialists like the other health professionals are confronted with many ethical problems is therefore absolutely necessary for each and every one in the health care delivery to prepare themselves to deal with these problems. To accomplish this and develop human values, it is desired that all the trainees undergo ethical sensitization by lectures or discussion on ethical issues, discussion of cases with an important ethical component.

Course Content: 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

Human volunteer research-informed consent for trials Drug trials

Ethical workshop of cases Gathering all scientific factors Gathering all value factors

Fortifying areas of value - conflict, setting of priorities Working out criteria towards decisions.

Recommended Reading:

1. Francis CM., Medical Ethics, 2nd Edn, 2004, Jaypee Brothers, New Delhi, Rs 150/.

2. Ethical Guidelines for Biomedical Research on Human Subjects, Indian Council of Medi, Research, New Delhi, 2000.

CHECKLISTS AND LOGBOOKS

CHECKLIST- 1

MODEL CHECK LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS.

Name of the Trainee: Date:

Name of the Faculty / Observer:

Sl. No	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	*Article chosen was*					
2.	*Extent of understanding of scope & objectives of the paper by the candidate*					
3.	*Whether cross-References*					
	have been consulted					
4.	*Whether other relevant publications consulted*					
5.	*Ability to respond to questions on the paper/ Subject*					
6.	*Audio - Visual aids used*					
7.	*Ability to discuss the Paper*					
8.	*Clarity of presentation*					
9.	*Any other observation*					
	Total Score					

CHECKLIST- 2

MODEL CHECK LIST FOR EVALUATION OF SEMINAR PRESENTATIONS.

Name of the Trainee: Date:

Name of the Faculty / Observer:

Sl no	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1	Whether other relevant publications consulted					
2	Whether cross - references have been consulted					
3	Completeness of Preparation					
4	Clarity of Presentation					
5	Understanding of subject					
6	Ability to answer the questions					
7	Time scheduling					
8	Appropriate use of Audio -Visual aids					
9	Overall performance					
10	Any other observation					
	Total score					

Please use a separate sheet for each faculty member

CHECKLIST- 3

MODEL CHECK LIST FOR EVALUATION OF CLINICAL WORK IN OPD

Name of the Trainee: Date:

Name of the Unit Head:

Sl. No.	Items for observation during presentation	*Poor* 0	*Below Average 1*	*Average 2*	*Good 3*	*Very Good 4*
1.	*Regularity of attendance*					
2.	*Punctuality*					
3.	*Interaction with colleagues and supportive Staff*					
4.	*Maintenance of case Records*					
5.	*Presentation of cases*					
6.	*Investigations work –up*					
7.	*Chair - side manners*					
8.	*Rapport with patients*					
9.	*Overall quality of clinical Work*					
	Total score					

Please use a separate sheet for each faculty member

CHECKLIST - 4
EVALUATION FORM FOR CLINICAL CASE PRESENTATION

Name of the Trainee: *Date:*

Name of the faculty / Observer:

Sl.No	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Completeness of history					
2.	Whether all relevant points elicited					

3.	Clarity of presentation					
4.	Logical order					
5.	Mentioned all positive and negative					
6.	Accuracy of general physical examination					
7.	Investigations required					
	Complete list					
8.	Relevant order					
	Intepretation of Investigations					
	Ability to discuss differential diagnosis.					
9.	Ability to discuss diagnosis.					
10.	Others					
	Grand Total					

Please use a separate sheet for each faculty member

CHECKLIST-5

MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL

Name of the Trainee: Date:

Name of the faculty Observer:

SI. No.		Strong Point	Weak Point
1.	Communication of the purpose of the talk		
2.	Evokes audience interest in the subject		
3.	The introduction		
4.	The sequence of ideas		
5.	The use of practical examples and / or illustrations		
6.	Specking style (enjoyable, monotonous, etc. Specify)		

7.	Attempts audience participation		
8.	Summary of the main points at the end		
9.	Ask questions		
10.	Answer questions asked by the Audience		
11.	Rapport of speaker with his Audience		
12.	Effectiveness of the talk		
13.	Uses AV aids appropriately		

Please use a separate sheet for each faculty member

CHECKLIST- 6

MODEL CHECKLIST FOR DISSERTATION PRESENTATION

Name of the Trainee: Date:

Name of the faculty / Observer:

Sl.No.	Prints to be considered	Poor *0*	*Below* *Average 1*	*Average* *2*	*Good* *3*	*Very* *Good 4*
1.	*Interest show in selecting topic*					
2.	*Appropriate review*					
3.	*Discussion with guide and other faculty*					
4.	*Quality of protocol*					
5.	*Preparation of Proforma*					
	Total Score					

CHECKLIST- **7**

CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE/CO-GUIDE

Name of the Trainee: Date

Name of the Faculty/Observer:

Sl.No.	Items for observation during presentation	Poor *0*	Below Average *1*	Average *2*	Good *3*	Very *Good* *4*
1.	Periodic consultation with guide / co- guide					
2.	Regular collection of case material					
3.	Depth of Analysis / Discussion					
4.	Department presentation of findings					
5.	Quality of final output					
6.	Others					
	ToTotal score					

CHECKLIST - 8 OVERALL ASSESSMENT SHEET

Name of the College: Date:

Check List No	PARTICULARS	A	B	C	D	E	F	G	t	J
1.	Journal Review Presentation									
2.	Seminars									
3.	Clinical work in wards									
4-	Clinical presentation									
5.	Teaching skill practice									
6.										
	TOTAL									

Signature of HOD **Signature of Principal**

The above overall assessment sheet used along with the logbook should form the basis for certifying satisfactory completion of course of study, in addition to the attendance requirement.

Key:
Mean score: Is the sum of all the scores of checklists 1 to 7
A, B,……..: Name of trainees

LOG BOOK

***Table* 1**

Academic activities attended

Name:
Admission Year: College:

Date	Type of activity - Specify Seminar, Journal club, Presentation, UG teaching	Particulars

LOG BOOK

Table 2

Academic Presentations made by the trainee

Name :

Admission Year:

College:

Date	Topic	Type of activity - Specify Seminar, Journal club, Presentation, UG teaching

LOGBOOK

Table3 Diagnostic and operative procedures performed

Name

Admission Year:

College:

Date	Name	OP No.	Procedure	Category **0**, A, PA, PI
		!		

Key:

C - WASHED UP AND OBSERVED - INITIAL 6 MONTHS OF ADMISSION A - ASSISTED A MORE SENIOR SURGEON -1 YEAR MDS

PA - PERFORMED PROCEDURE UNDER THE DIRECT SUPERVISION OF A SENIOR SURGEON - II YEAR MDS

PI - PERFORMED INDEPENDENTLY - III YEAR MDS

SECTION VI

LIBRARY & EQUIPMENT REQUIREMENTS

1. Infrastructure & Functional Requirements:

1. Space: In addition to the BDS functional programme the following physical facilities shall be made available to start postgraduate training programmes leading to MDS degree.

feet visual

a. A separate clinical area for postgraduate students. Minimum Area-600 sq

b. A seminar room furnished with proper seating arrangement and audio-

equipments - Minimum area -300 sq. ft.

c. A separate room for the use of postgraduate students - Minimum area -200

sq.ft.

2. Equipment: Each postgraduate department shall be provided with the required equipments as recommended by Dental Council of India.

3. Library: A departmental library shall be provided with copies of relevant books. In addition a central library should provide all the recent editions of books pertaining to the speciality and allied subjects as per the recommendations of Dental Council of India.

All the journals of relevant specialty and allied subjects shall be made available..

2. Recommended Books And Journals

I. Prosthodontics Implantology

	Title	*Author*
1.	Osseo integration in skeletal reconstruction and joint Replacement	Branemark
2.	Advanced osseointegration surgery	Philip
3.	Surgical atlas of dental implant technique	Bubbush
4.	Contemporary implant dentistry	Carl Misch
5.	Dental implant are they for me?	Thomas d Taylor
6.	A color atlas of dental implant surgery	Block
7.	A color atlas of dental and maxillofacial implantology	John Hobkrick
8.	The Branemark novum protocol for same day	Branemark
9.	Osseo integration and esthetics	Branemark
10.	Color atlas of Branemark system of oral reconstruction	Richard A/ Rassmuser
11.	Color atlas of dental medicine (implantology)	Spekerman
12	Osseo integration in craniofacial reconstruction	Branemark
13	Endosteal implant	McKiney
14	Implant Prosthodontics	M. Fagan

15.	Dental Implant	Wolfe
16.	Dental Implant: Implant support prosthesis	Vincente Jimenz
17.	Periodontal and Prosthodontic management of Advanced case.	Marvian
18.	Oral implantology: Basic ITV cylinder	Schroeder
19.	Dental Implant	McKiney
20.	Tissue Integrated prosthesis	Branemark/ Zarb/ Alberketson
21.	Dental implants (The art and science)	Charles Bubbush
22.	Implant and restorative dentistry Carl Misch /Klaus U. Benner	Gerald M. Scortecci/
23.	Tissue integration in orthopedic and maxillofacial Reconstruction	William R. Laney
24.	Oral Implantology	Andre
25.	Implant therapy	Myron
26.	Guided bone regeneration: Inlmplant dentistry	Daniel Buser
27.	Laboratory techniques for Branemark system	Taylor &Bergman
28.	Implant Prosthodontics: Surgical and prosthetic techniques For dental implants	Fagan
29.	A color atlas of the Branemark system on oral reconstruction	George A. Zarb
30.	Dental implant color atlas fundamentals and advance Laboratory technology	Robert

Dental Materials

Title		**Author**
1.	Dental ceramics; proceedings of the First international symposium on ceramics	John W. McLean
2.	The science and art of dental ceramics	John W. McLean
3.	Science of dental materials (9th and 10th edition)	Philips
4.	Biocompatibility of dental materials (Vol 1 - 4)	Dennis G Smith / David Williams
5.	Dental materials; Multiple-choice questions	
6.	Dental materials, properties and manifestations	William O. Brien
7.	Porcelain and composite inlays and onlays	Graber and Goldstein

8.	Applied dental materials	Anderson
9.	Dental material science	Basu
10.	Notes on dental materials	Combe
11.	Dental materials a problem oriented approach	Craig
12.	Restorative dental materials	Craig
13	Dental materials: Properties and manipulation	Craig
14	Clinical restorative materials and techniques	Leineelder and Lemons
15.	Restorative dental materials - A preview	Reese and Valega
16.	Dental materials in clinical dentistry	Reisbick
17.	Science of dental materials	Skinner
18.	Clinical handling of dental materials	Smith
TMJ and Occlusion		
Sl. No	**Title**	**Author**
1	Introduction to Gnathology	Dr.E.GR. Solomon
2	Clinical management of head, neck and TMJ pain and dysfunction	Harold Gelb
3	The TMJ; a biological basis for clinical practice	Sarnat Laskin
4	Clinical management of TM Disorder and orofacial pain	Richard Pertes / Sheldon G. Gross Gerber

5	Dental occlusion and the TMJ	
6	Imaging atlas of TMJ	Leslie B. Heffez/ Mehmood
7	A color atlas of occlusion and malocclusion	A.P. Howard/N.J. Capp
8	Occlusion (3rd edition)	Ramfjord/Ash
9	Current controversies in TM disorders	Charles McNeill
10	Anthroscopic atlas of TMJ	David I. Blaustein/Leslie B. Heffez
11	Craniomandibular disorders and oro facial pain	Iven Klineberg
12	A text and color atlas of TM JOral rehabilitation; Clinical	John Norman/Paul
	determination of occlusion	BramelySumiya Hobo
13	Total TMJ reconstruction	
14	Medical management of TM disorders	

15	Modern g-nathological concepts (updated)	Victor Lucian
16	Principles and practice of TMJ anthroscopy	Joseph P McCain
17	Evaluation, Diagnosis and treatment of occlusal problems	Dawson
18	Management of TMD and occlusion	Okeson
19	TMD Classification, diagnosis and management	Welden E. Bell
20	TMJ and craniofacial pain diagnosis and management	James R. Fricton
21	TMJ dysfunction: A practice guide	Annika Isberg
22	Occlusion principles and concepts	Jose Dos Santos Jr.
23	Oral rehabilitation problem cases: treatment and Evaluation	Schweizer
24	Occlusion collection of monographs	Guichet
25	Conjoint in occlusion	Marquette. University
26	Occlusion in clinical practice	Thomson

Maxillofacial Surgical Considerations And Reconstruction

Sl. No	**Title**	**Author**
1	Color atlas of dental medicine. Oral surgery for the general Dentist	Hermann F. Seiler
2	Maxillofacial rehabilitation; Prosthodontic and surgical Consideration	John Berumer III / Thomas A. Curtis
3	Management of facial head and neck pain	Barry C. Cooper / Frank E. Zucente
4	Prosthetic rehabilitation	Keith F. Thomas
5	Maxillofacial rehabilitation; Prosthodontic and Surgical consideration	John Beumer III / Thomas A. Curtis Branemark
6	Complex cleft palate and cranio-maxillofacial defects	
7	Medical emergencies in dental office	

Fixed Partial Prosthodontics

Sl. No	Title	**Author**
1	Fixed bridge prosthesis	D.H. Roberts
2	Fundamentals of Fixed Prosthodontics	Shillinburg
24	Essentials of removable partial dentures	Applegate

25	Planned partials	Applegate
26	Color atlas of Removable Partial Denture	I.C. Devenport

General Prosthodontics

Sl. No	**Title**	**Author**
1	DENTISTRY: An illustrated history	Malvin E. Ring
2	Text book of Geriatric dentistry	Paul Holm/Pedersor
3	Prosthodontics: Principle and management strategies	Bengt *OwaW*
4	Prosthodontics for the elderly: Diagnosis and Treatment	Ejvind Budtz
5	Dental secrets	Stephen
6	Essentials of Clinical dental assisting	Joseph
7	Clinical Dental Prosthesis	Fenn
8	Essentials of dental Technology	Fowler
9	Management of Geriatric dental patients	Freedman
10	Diagnosis and treatment plan of maxillofacial prosthodontics	Laney and Gibilisco
11	Facial growth and Facial Orthopedics	Wander Linden
12	Lasers in Dentistry	Leo
13	Pharmacology and therapeutics for dentistry	John A. Yagiela
14	Dental drug reference	Delmars
15	Modern concepts in diagnosis and treatment of fissure caries	Paterson / Watts
16	Biomechanics in clinical dentistry	Caputo and Standlee
17	Color atlas of preprosthetic surgery	Hopkins
18	Clinical epidemiology and biostatistics	Rebecca Knapp
19	Legal procedure in medical cases	Apurva Nandy
20	Law and medicine	Jogaroa
21	Modern dental assisting	Torres
22	Preservation and restoration of tooth structure, esthetics	Graham J. Mount
23	Fundamentals of esthetics	Claud R. Rufenacht
24	Esthetic dentistry and ceramic restorations	Bernard Tauti
25	Esthetic dentistry - Ceramic restorations	loraWc
26	Esthetics in dentistry	Goldstein
27	Esthetics	Lauller

28	Esthetic guidelines for restorative dentistry	Schareer
29	Suggested chair side procedures for natural esthetics in complete denture	Branemark
30	Esthetic approach in metal ceramic restoration for the mandibular anterior region	Muthethies
31	Natural ceramics	Korson
32	The polychromatic layering techniques	Rinn
33	Creative ceramic color - a practical system	Hegenbarth
34	Basic techniques for metai ceramics	Yamamoto
35	Porcelain laminate	Garber
36	Fundamentals of esthetics	Rufenacht
37	Color atlas of porcelain laminate veneers	Freedman
38	Perspective in dental ceramics	Preston
39	Techniques for porcelain laminate veneers	Haga and Nakazawa

3	Planning and making crowns and bridges	Bernard G.N. Smith
4	Johnston's modern practice in fixed prosthodontics	Dykema
5	Failures in restored dentition; management and Treatment	Michael D. Wise
6	Precision fixed prosthodontics; Clinical and lab aspects	M.Martigone ;
7	Contemporary fixed Prosthodontics	SteephenS. Rosenstie
8	Theory and practice of Fixed Prosthodontics	Tyllman
9	Fundamentals of esthetics	Rufeflacht
10	Esthetics of anterior fixed prosthodontics	Gerald J. Chiche
11	Precision attachment	Gareth
12	Color atlas of ceramo metal technology	Kuwata
13	Inlays, crown and bridges	Krantirowich
14	Advanced restorative dentistry	Bacom
15	Fixed and removable prosthodontics	Bardy
16	Metal ceramic crown and fixed partial denture	Calomn
17	_aboratory manual for fixed partial denture	Douglas
18	Adhesive metal free restorations	Dietschi & Spreafico
19	Ceramo metal fixed partial denture	George
20	Essentials of dental ceramics - an artistic approach	Chuiche&Alspnault
21	Direct bonded retainers	McLaughlin
22	Crown and Bridge Prosthodontics	Allan and Foreman
23	Inlays crowns and Bridges	Cowell
24	Clinical procedures for partial crowns, inlays and pontics	Ravasini
25	Fixed Prosthodontics manual of procedures	Riis
26	Fixed Prosthodontics manual of procedures	Schorr
27	Multiple cantilevers in fixed prosthetics	Schweikert
28	Laboratory procedures for inlays. Crowns and bridges	Stananought
29	Precision fixed prosthodontics	Martignoni Schonenberger

Complete Dentures

Sl. No	**Title**	**Author**
1	Treatment of edentulous patient	Victor 0. Lucia
2	A color of Complete Dentures	JA. Hobkirk

3	Esthetics in Complete Dentures	Dr. E.G.R. Solomon
4	Syllabus of Complete Denture	Heartwell
5	Prosthodontic treatment for edentulous patients	Zarb/Boucher
6	Dental lab procedure - Complete Denture	Morrow and Rudd
7	Color atlas of complete denture fabrication	Hirosh Muraoka
8	Complete Denture Prosthodontics (3rd edition)	Sharry
9	Principles and practice of Complete Dentures	Iwao Hayakawa
10	Handbook of immediate over dentures	Robert
11	Over denture	Allen
12	Occlusal correction: Principles and Practice	John
13	Immediate and replacement dentures	Albert
14	Sectional dentures: A clinical and treatment manual	Pullen
15	Mastering the art of complete dentures	Alexander
16	Dental laboratory procedures in complete dentures	Robert
" 17	Overdenture made easily	Harold
18	Full dentures	Mack
19	Sectional dentures	Pullen-Wamer& Lestrance
20	Atlas of over dentures and attachments	Kumber
21	Immediate and Replacement dentures	Anderson and Storer
22	Complete dentures	Hobkirk
23	Impressions for Complete Dentures	Levin
24	Complete denture prosthetics, clinical and laboratory manual	Nell and Niern
25	Complete denture prosthetics	Nell and Niern
26	Designing Complete Dentures	Watt and Maggregor
27	Atlas of complete denture	Passamonti
28	Fundamental of complete denture prosthodontics	Shillingburg
29	Essentials of complete denture Prosthodontics	Coinkler

Removable Partial Prosthodontics

Sl. No	**Title**	**Author**
1	Removable Partial Prosthodontics	Mc Cracken's

2	Clinical Removable Partial Prosthodontics	Sterward
3	Color atlas of dental medicine	
4	Removable Partial Prosthodontics	George Graber
5	Attachments for Prosthetic Dentistry	Michael Sherring
6	Laboratory procedures forfull and partial dentures	Derek Stannought
7	Fundamentals of removable partial dentures	Owen
8	Designing partial dentures	David
9	Advanced removable partial dentures	James Brudvik
10	Partial dentures Singer	
11	Restoration of partially dentate mouth	Bates
12	Removable partial denture construction	Bates
13	Treatment of partially edentulous patients	Boucher and Renner
14	Introduction to removable denture prosthetics	Grant and Johnson
15	Partial removable prosthodontics	Kratochvil
16	Partial denture prosthetics	Neill and Walter
17	Removable partial denture laboratory manual	Reitz and Yokoyama
18	Removable partial dentures	Renner and Boucher
19	Removable partial dentures	Taylor
20	Prosthodontic treatment of partially edentulous patients	Zarb
21	Atlas of removable partial denture design	Starrttpm
22	Removable partial denture	Grassoand Miller
23	Precision attachments in prosthodontics	Preiskel

I. Periodontics

1. Textbook of clinical periodontology and implant dentistry, by Janlinde, Nicklans Lang and Thorklid K., 1st edn. 1997.
2. The periodontium by Schroeder
3. Periodontal Ligament by Berkovitz
4. Contemporary Periodontics by Geneo R. J. and. Cohen S.

5. Periodontics by Grant, Stern and Listgarten
6. Periodontal regeneration-current concepts-further directions by Aban Poison
7. Periodontal Instrumenarium by Gill and Ginger
8. Periodontitis in man and other animals by Page and Schroeder
9. Crevicular fluid updated by Cimason
10. Colour Atlas of Periodontal surgery by Cohen E.
11. Colour Atlas of Periodontal surgery by Cohen E.
12. Advances in periodontics by Wilson and Karnman.

II. Oral & Maxillofacial Surgery

1. Principles of Oral & Maxillofacial Surgery; Vol. 1,2 & 3; Peterson I.J & etal.
2. Rowe and Williams Maxillofacial injuries Vol. 1 & 2; Williams Jlied
3. Handbook of Medical emergencies in the dental office; Malamed S.F.
4. Plastic surgery; Vol. 1 - 5; McCarthy JG
5. Cancer of the face and mouth; McGregor IA & Mc
6. Oral & Maxillofacial Surgery Vol. 1 & 2; Laskin DM
7. Oral & Maxillofacial Trauma; Vol 1 & 2; Fonseca RJ & Davis
8. Oral & Maxillofacial infections; Topazian RG & Goldberg MH
9. Surgical correction of dentofacial deformities Vol 1,2 & 3; Bell WH & etal
10. Surgery of the mouth and jaws; Moore JR.
11. Dentofacial deformities:integrated orthodontic and surgical correction; Vol 1 to 4; Epker BN & Fish LC
12. Maxillofacial Surgery; Peter Wardbooth

CONSERVATIVE DENTISTRY :

Reference:

1. Fractures of the teeth, prevention and treatment of the vital and non-vital pulp by Basrani
2. Textbook of operative dentistry by Baum
3. Dentin and pulp in restorative dentistry by Brannstorm
4. Principles and practice of operative dentistry by Charbeneau
5. Operative dentistry by Gilmore
6. Esthetic composite bonding by Jordan

7. Operative dentistry: modem theory and practice by Marzook
8. Art, science and practice of operative dentistry by Sturdevant
9. Atlas of operative dentistry - pre clinical and clinical procedures by Evans & Wetz
10. New concepts in operative dentistry by Fusiyama
11. Handbook of clinical Endodontics by Bence.
12. Pathways of the pulp by Cohen & Burns
13. Bleaching teeth by Feinman
14. Endodontic practice by Grossman
15. Problem solving in Endodontics, prevention, identification and management by Gutmann
16. Endodontics in clinical practice by Harty
17. Endodontics by Ingle & Taintor
18. Endodontics- science and practice by Schroeder
19. Endodontology - biologic considerations in Endodontic procedures by Seltzer
20. Restoration of the endodontically treated tooth by Schillingberg & Kessler
21. Principles and practice of Endodontics by Walton & Torabinejad
22. Endodontic therapy by Weine
23. Colour atlas of Endodontics by Messing & Stock
24. The dental pulp by Seltzer & Bender
25. Experimental Endodontics by Spangberg
26. Cariology by Newbrun
27. Silver amalgam in clinical practice by Gainsford
28. Glass lonomer cement by Wilson & Mcclean
29. Pediatric operative dentistry by Kenedy
30. Fluorides in caries prevention by Murroy & Rugg-Geenn
31. Color atlas and text of Endodontics by Stock
32. Why root canal therapy? By Berns 1986.
33. Contemporary esthetic dentistry- practice fundamentals by Crispin 1994
34. Enamel micro abrasion by Croll 1991
35. Advances in Glass lonomers by Davidson 1991
36. Complete dental bleaching by Goldstein 1995
37. Fiber reinforced composite in clinical dentistry by Freilich 2000
38. Dental ceramics by Mclean 1983
39. LASERS in dentistry by Miserendind 1995

40. Esthetic approach to metal ceramic restorations by Muterthies 1990
41. Life and times of GV. Black by Pappas 1983
42. Bonded ceramic inlays by Roulat 1991
43. Fundamentals of tooth preparation by Schillingburg 1996
44. Esthetics with indirect restorations by Stein 1992
45. Surgical Endodontics by Barnes 1991
46. Operative dentistry by Marzook 1996
47. Inlays, crowns and bridges by GF.Kantorowicz 19.93

ORTHODONTICS : Recommended:

1. WILLIAM R.PROFFIT, Contemporary Orthodontics
2. GRABER & VANARSDALL, Orthodontics - Current Principles & Techniques
3. MOYERS, Text Book of Orthodontics
4. GRABER, Orthodontics Principles and practice.
5. GRABER, PETROVIC, & RAKOSI Dentofacial Orthopedics with Functional Appliances
6. ATHENASIOU E ATHENASIOU, Orthodontic cephalometry
7. JACOBSON, Radiographic Cephalometry
8. RAKOSI, An Atlas And Manual of Cephalometric Radiography
9. ENLOW, Handbook of Facial Growth
10. EPKER & FISH, Dentofaical Deformities Vol. 1
11. PROFFIT & WHITE, Surgical Orthodontic Treatment
12. NANDA, Biomechanics in Clinical Orthodontics
13. NANDA & BURSTONE, Retention and Stability in Orthodontics
14. OKESON, Management of T.M. Disorders And Occlusion
15. LOU NORTON &DAVIDOWITCH, Biology of tooth movement
16. GERHARD PFIEFER, Craniofacial Abnormalities and clefts of thelip, Alveolus and Palate.
17. OKESON, TMJ Disorders.

References

1. L. JOHNSTON, New Vistas in Orthodontics
2. LEE GRABER, Orthodontics - State of theArt-
3. The Essence of Science
4. NIKOLAI, Bio Engineering Analysis of Orthodontic Mechanics
5. M. RAKOSI & GRABER, A Color Atlas of Dental Medicine
6. BURSTONE, Modern Edgewise Mechanics and Segmented Arch Technique
7. W J CL ARK, The Twin Block Functional Thepary
8. McNAMARA & BRUDON, Mixed Dentition
9. R D ROBLEE, Interdisciplinary Dentofacial Therapy
10. NANDA, The Developmental Basics of Occlusion and Malocclusion
11. TIMMS, Rapid Maxillary Expansion
12. WILLIAMS & COOKS, Fixed Orthodontic Appliances
13. RICKETTS, Bioprogresssive Therapy
14. VAN DER LINDEN, Quintessence Series
15. MICHIGAN CENTER, Craniofacial Growth Series for human growth and Development
16. SALZMAN, Practice of Orthodontics VoL II and I
17. ROHIT SACHDEVA, Orthodontics for the next millennium
18. SCHWIDLING, The Jasper Jumper
19. ROBERT RICKETTS, Provocations and preceptions in Craniofacial Orthopedics

ORAL PATHOLOGY

I. Oral Anatomy, Histology & Physiology & Biochemistry

1. Oral Histology, development, structure & function - A Color atlas & text book of Oral Anatomy, histoLogy & embryoLogy - A.R.Tencate
2. B.K.B.Berkovitz, GR.Holland & B.J.Moxham
3. Ham's HistoLogy -David.H.Cormaek
4. AppLied OraL PhysioLogy - Lavelle

5. Basic & AppLied DentaL Biochemistry - R.A.D.WiLLiams & J.C.Elliot

II. Microbiology, Immunology & Basic Molecular Biology & Genetics

1. Text book of Microbiology - R.Ananthnarayan & C.K.J.Paniker
2. Essential Immunology-Ivan.M.Roitt
3. Immunology of OraL diseases -Thomas lehner
4. OraL Microbiology & Immunology-Newman & Nisengard
5. PCR - a practical approach - Me Pherson, Quirke P & TayLor
6. MoLecuLar Cloning - a Laboratory manual - Sambrook J, FriLsch E.F & Maniafjs

III. Physiology

1. Review of Medical Physiology - Ganong

IV. General Pathology & Haematology

1. Cell, tissue & Disease - Wolf
2. Robbin's pathologic basis of disease - Cotran, Kumar & Robbins
3. Clinical Haematology - R.D.Eastham

V. Oral Medicine & Radiology

1. Burket's Oral Medicine - Lynch, Brightman & Greenberg
2. Oral Radiology - principles & Interpretation - S.C.White, Pharoah M.J

VI. Oral Pathology & Forensic Odontology & Histopathology Techniques.

1. A Text Book of Oral Pathology -Shafer W.G, M.K.Hine & B.M.Levy
2. Oral Pathology - Clinical Pathologic correlations-J.A.Regezi & James Sciubba
3. Oral Diseases in the Tropics- S.R.Prabhu, D.F.Wilson, D.K.Daftary & N.W.Johnson
4. Soft tissue tumours -S.M. Weiss, J.S.Brooks
5. Color atlas of Oral disease, Clinical & Pathologic Correlations - Cawson R.A, Binnie W.H, J.H.Eveson
6. Atlas & text of pathology of.tumours of the oral tissues - R.B.Lucas
7. Evan's histological appearances of tumours -David B.Ashley
8. Histopathology of Skin - Lever
9. Cysts of the Oral regions - Mervyn Shear

10. Cellular Pathology Technique - c.F.A.Culling.R.T.AIlison & W.T.Barr
11. Surgical Pathology of Salivary Glands - Ellis, Auclair, Gnepp
12. Syndromes of Head & Neck - Smith.D.W
13. Forensic Dentistry - Cameroone J.M, Sims

1. Dentistry, dental practice and community by Striffler DF
2. Primary preventive dentistry by Harris N & Christen AG
3. Community dental health by Jong AW
4. Principles of dental public health vol I part 1 &2 vol 2 by Dunning JM
5. Dental public health: an introduction to community dentistry by Slack G.L.
6. Fluoride in dentistry by Fejerskar Ok & Etal Ed
7. Fluorides & dental caries by Tiwari A
8. Text book of preventive and social medicine by Mahajan BK & Gupta Mc
9. Dental health education by Who Expert Committee
10. Metabolism and toxicity of fluoride vol I by Whitford GM.
11. Epidemiology bio-statistics and preventive medicine by Jekel JF & Etal
12. Introduction to oral preventive medicine: a programme for the first clinical experience by Muhlemann HR
13. Text book of preventive medicine by Stallard CE
14. Handbook of dental jurisprudence and risk management by Pollack BR ED
15. Fluorides and human health by World Health Organisation
16. Appropriate use of fluorides for human health by Murry JJ ED
17. Community health by Green LW
18. Prevention of dental diseases by Murry JJ ED
19. Color atlas of forensic dentistry by Whittaker DK & DAC Donald DG
20. Health research design and methodology by Okolo EN
21. Oxford text book of public health vol.3 by Holland WW & Et Al
22. Guidelines for drinking water quality vol 1 recommendations by WHO
23. Introduction to Bio-statistics by Mahajan B.K.

24. Guidelines for drinking water quality vol. 2 health criterial & other supporting information by WHO

25. Dentistry, dental practice and the community by Burt BA & Et Al

26. Occupational hazards to dental staff by Scully C

27. Forensic dentistry by Cameron JM

28. Research methodology: methods & techniques Kothari R

29. Law & ethics in dentistry by Shear J & Walters L

30. Health research methodology : a guide for training in research methods (western pacific education in action series no.5) by WHO

31. Community oral health by Pine CM

32. Park's text book of preventive and social medicine by Park K

33. Epidemiology, bio-statistics and preventive medicine by Katz Dl

34. Oral health surveys basic methods by WHO

35. Essentials of preventive and community dentistry by Peter S

36. Fluorides in caries prevention by Murry Jl ED

37. Preventive dentistry by Forrest John 0

38. Fluorine and fluorides: a report by World Health Organisation

39. Planning and evaluation of public dental health services: a technical report by World Health Organization

40. Prevention methods and programmes for oral diseases: a technical report by World Health Organization

41. Community periodontal index of treatment needs development, field-testing and statically evaluation by World Health Organization

42. Planning oral health services by World Health Organization

43. Guide to epidemiology and diagnosis of oral mucosal diseases and conditions by World Health Organization

44. Community dentistry (pgd hand book series vol 8) by Silberman SI & Tryon AF.ED.

PEDODONTICS & PREVENTIVE DENTISTRY

1. Pediatric Dentistry (Infancy through Adolescences) - Pinkham.

2. Kennedy's Pediatric Operative Dentistry - Kennedy & Curzon.
3. Occlusal guidance in Pediatric Dentistry - Stephen H. Wei.
4. Clinical Use of Fluorides - Stephen H. Wei.
5. Pediatric Oral & Maxillofacial Surgery - Kaban.
6. Pediatric Medical Emergencies - P. S. whatt.
7. Understanding of Dental Caries - Niki Foruk.
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 Adolescence - Mc. Donald.
16. Pediatric Dentistry - Damle S. G
17. Behaviour Management – Wright
18. Pediatric Dentistry - Mathewson.
19. Traumatic Injuries - andreason.
20. Occlusal guidance in Pediatric Dentistry - Nakata.
21. Pediatric Drug Therapy – Tomare
22. Contemporary Orhtodontics - Profitt.
23. Endodontic Practice - Grossman.
24. Endodontics-Ingle.
25. Pathways of Pulp - Cohen.
26. Management of Traumatized anteriorTeeth - Hargreaves.
27. Essentials of Community & Preventive Dentistry - Soben Peters.
28. Post graduate hand book by Barber
29. Scientific foundation of Pediatric Dentistry by Stewart and Barber

30. Diet and Nutrition in dentistry by Rutgunn

31. Preventive Dentistry by Murray.

ORAL MEDICINE AND RADIOLOGY

a) Oral Diagnosis, Oral Medicine & Oral Pathology

1. Burkit - Oral Medicine - J.B. Lippincott Company
2. Coleman - Principles of Oral Diagnosis - Mcsby Year Book
3. Jones - Oral Manifestations of Systemic Diseases - W.B. Saunders company
4. Wood and Goaz - Differential diagnosis of Oral Lesions - Mosby Year Book
5. Langlais - Oral Diagnosis / Oral Medicine and Treatment planning Lea & Febiger & Waverly Co.,
6. Mitchell - Oral Diagnosis & Oral Medicine
7. Pindburg- Syndromes of the Head & Neck
8. Stones - Oral Diseases
9. Irwin Walter Scopp - Oral Medicine
10. Kerr - Oral Diagnosis
11. Miller - Oral Diagnosis & Treatment
12. Bennier - Differential diagnosis & Oral Lesions
13. Munford - Orofacial pain
14. Bell - Oral facial pain
15. Tullmen - Systemic diseases in Dental Treatment
16. Mean - Diseases of the Mouth
17. Hutchinson - clinical Methods
18. McCleods - Clinical Examination
19. Chamberlin - Symptoms & Signs of Clinical Medicine
20. Davidson - Principles and :.ctice of Medicine

21. Harrison - Principles of Interns Medicine

22. Schweitner - Oral Rehabilitation problem cases

23. Burkhardt - Oral Cancer

24. Dolby - Oral Mucosa in Hearth & Diseases

25. Sonis.S.T, Fazio.R.C. and Fang.L - Principles and practice of Oral Medicine

26. Nally F.F. and Eggleston.D. J. - A Manual of Oral Medicine

27. Prabhu.S.R. et al - Oral Diseases in the Tropics

28. Samaranayake L.Ret al - Oral Candidos is

b) **Oral Radiology**

1. White & Goaz - Oral Radiology - Mosby year Book

2. Weahrman - Dental Radiology - C.V. Mosby Company

3. Stafne - Oral Roentgenographic Diagnosis - W.B.Saunders Co.,

4. Langlairs - Diagnostic Imaging of the Jaws - William & Wilkins

5. Smith - Dental Radiography - Blackwell Scientific Publication

6. Eric Whaites - essentials of Dental Radiography - Churchill Livingstone

7. Sonis.S.T., Fazio.R.C. and Fang.L - Principles and practice of Oral Medicine

8. Malamed S.F. - Book of Medical Emergencies in the Dental

9. Cawson.R.A. and Scully CM. - Medical Problems in Dentistry

10. Pindborg.J.J. - Atlas of diseases of the oral mucosa

11. Linch M.A. - ET'S Oral Medicine, Diagnosis and Treatment

12. Dayal P.K. - Text book of Oral Medicine

c) Forensic Odontology

1. Derek H.CLark - Practical Forensic Odontology - Wright

2. Cottone Standish - Outline of Forensic Dentistry

3. Whittaker - A colour atlas of Forensic Dentistry

JOURNALS:

The journals are best source of information for professionals to keep abreast with the recent developments and trends in their respective specialties. Considering the array of journals that are available today the council xjesires that !he institutions provide as a minimum requirement the list of journals mentioned below:

Pertaining to Dental education and practice.

1. Journal of Indian Dental Association

2. British Dental Journal

3. Journal of American Dental Association

4. Journal of Dentistry

5. Dental Clinics of North America

6. Journal of Dental Education

7. Dental Abstracts

8. Journal of Dental Research

9. Dental Index '

10. Quintessence International

11. International Dental Journal

12. Australian Dental Journal

13. Journal of dental materials

14. Journal of aesthetic dentistry

15. Journal of cleft palate

PROSTHODONTICS

1. International Journal of Oral & Maxillofacial Implants
2. International Journal of Prosthodontics
3. Journal of Dental Materials
4. Journal of Esthetic Dentistry
5. Journal of Geriatric Dentistry
6. Journal of Prosthetic Dentistry
7. Journal of Prosthodontics
8. International Journal of Oral & MaxiLLofacial Surgery
9. Journal of ClinicaL PeriodontoLogy.
10. Journal of PeriodontoLogy.
11. Dental Technician.
12. Journal of Endodontics.
13. European Journal of Prosthetics & Restorative Dentistry.
14. The Journal of Adhesive Dentistry.
15. International Journal of Endodontics.
16. Journal of OraL & MaxillofaciaL Surgery

PERIODONTICS

1. Journal of periodontoLogy
2. Journal of clinicaL periodontoLogy
3. Journal of periodontal Research
4. International journal of periodontics
5. Journal of Indian Society of periodontics
6. Journal of oral and maxillofacial implants
7. Periodontology 2000
8. Annals of periodontology

ORAL & MAXILLOFACIAL SURGERY

1. Journal of Oral & MaxillofaciaL Surgery
2. International Journal of OraL & Maxillofacial Surgery
3. Journal of Cranio Maxillofacial Surgery
4. British JournaL of Oral & Maxillofacial Surger
5. Oral, Surgery, Oral Medicine, Oral Pathology
6. Oral & Maxillofacial clinics of North America
7. Journal of oro-facial pain
8. Int. Journal of Oral & Maxillofacial Implants
9. Indian Journal of Oral & Maxillofacial Surgery
10. Plastic & Reconstructive Surgery
11. Cancer

CONSERVATIVE DENTISTRY

1. Endodontics & Dental Traumatology
2. International Endodontic Journal
3. Operative Dentistry
4. Esthetic Dentistry
5. Endodontology
6. Dental Materials
7. OraL Surgery, Oral Medicine, Oral Pathology
8. Oral Radiology & Endodontics
9. Journal of Prosthetic Dentistry
10. International Journal of Prosthetic Dentistry
11. Periodontics & Restorative Dentistry
12. Index to Dental Literature

ORTHODONTICS

1. American Journal of Orthodontics and Dentofacial Orthopedics
2. Journal of Orthodontics (formerly British Journal of Orthodontics)
3. Angle Orthodontics
4. Journal of Clinical Orthodontics
5. JournaL of Indian Orthodontic Society
6. Seminars in Orthodontics
7. Journal of Orthodontics and Dentofacial Orthopedics

8. European Journal of Orthodontics
9. Australian Journal of Orthodontics
10. International Journal of Adult Orthodontics and Orthognathic surgery
11. The Functional Orthodontist.

ORAL PATHOLOGY

1. Journal of Oral Pathology
2. Journal of Oral Medicine, Oral Surgery, Oral Pathology
3. Journal of Oral and Maxillofacial Surgery
4. British journal of Oral and Maxillofacial Surgery
5. International journal of Oral and Maxillofacial Surgery
6. Journal of Craniofacial surgery
7. Cancer

COMMUNITY DENTISTRY

1. Journal of Community Dentistry and Oral Epidemiology
2. Journal of Public Health Dentistry
3. Fluoride Journal of International Society
4. Journal of Community Dental Health
5. Journal of Fluoride research
6. Journal of clinical preventive dentistry

PEDODONTICS & PREVENTIVE DENTISTRY .

1. ASDC Journal of Dentistry for children.
2. International Journal of Pediatric Dentistry
3. Pediatric Dentistry
4. Journal of Indian Society of Pedodontics & Preventive Dentistry

ORAL MEDICINE AND RADIOLOGY

1. Journal of Oral Pathology/Oral Medicine and Radiology/Oral Surgery
2. Journal of Oral Diseases
3. Journal of Oral Pathology / Medicine
4. Journal of Community Dentistry & Oral Epidemiology
5. Journal of Indian Academy of Oral Medicine and Radiology
6. Journal of Indian association of Oral Pathology

EQUIPMENTS
DEPARTMENT: PROSTHODONTICS AND CROWN & BRIDGE

S. No.	NAME	SPECIFICATION	Quantity		Availability
1.	Electrical Dental Chairs and Units	With shadowless lamp, spittoon, 3 way syringe, instrument tray and motorized suction, micromotor and airotor attachment with handpieces.	One chair and unit per PG student and two chairs with unit for the faculty.		
			1 Unit	2 Units	
2.	Articulators – semi adjustable/ adjustable with face bow		6	12	
3.	Micromotor – (Lab Type can also be attached (fixed) to wall		2	4	
4.	Ultrasonic scaler		2	2	
5.	Light cures		2	2	
6.	Hot air oven		1	1	
7.	Autoclave		2	2	
8.	Surveyor		2	2	
9.	Refrigerator		1	1	
10.	X-ray viewer		1	2	
11.	Pneumatic, Crown bridge remover		2	3	
12.	Needle destroyer		1	2	
13.	Intra oral camera		1	1	
14.	Digital SLR camera		1	1	
15.	Computer with internet connection with attached printer and scanner		1	1	
16.	LCD projector		1	1	
	Clinical Lab for Prosthetics				
1.	Plaster dispenser		2	2	
2.	Model trimmer with carborundum Disc		1	2	
3.	Model trimmer with diamond disc		1	2	
4.	High speed lathe		2	3	
5.	Vibrator		2	4	
6.	Acrylizer		1	2	
7.	Dewaxing unit		1	2	
8.	Hydraulic press		1	1	
9.	Mechanical press		1	1	
10.	Vacuum mixing machine		1	1	
11.	Micro motor lab type		2	3	
12.	Curing pressure pot		1	1	
13.	Pressure molding machine		1	1	

	Chrome – Cobalt Lab Equipment				
1.	Duplicator	Micro and macro	1	1	
2.	Pindex system		1	1	
3.	Burn-out furnace		1	1	
4.	Welder		1	1	
5.	Sandblaster		1	1	
6.	Electro polisher		1	1	
7.	Model trimmer with carborandum disc		1	1	
8.	Model trimmer with diamond disc		1	1	
9.	Model trimmer with double disc (one Carborandum and one diamond disc)		1	1	
10.	Casting machine, motor cast with the safety door closure, gas blow torch with regulator		1	1	
11.	Dewaxing furnace		1	1	
	Induction casting machine with vacuum pump, capable of casting titanium chrome cobalt precision metal		1	1	
12.	Spot welder with soldering, attachment of cable		1	1	
13.	Steam cleaner		1	1	
14.	Vacuum mixing machine		1	1	
15.	Spindle grinder 24,000 RPM with vacuum suction		1	1	
16.	Wax heater		2	3	
17.	Wax carvers (Full PKT Set)		2	3	
18.	Milling machine		1	1	
19.	Stereo microscope		1	1	
20.	Magnifying work lamp		1	1	
21.	Heavy duty lathe with suction		1	1	
22.	Preheating furnace		1	1	
23.	Dry model trimmer		1	1	
24.	Die cutting machine		1	2	
25.	Ultrasonic cleaner		1	1	
26.	Composite curing unit		1	1	
	Ceramic Lab Equipment				
1.	Fully programmable porcelain furnace with vacuum gauge		1	1	
2.	Ceramic kit (instruments)		3	3	
3.	Ceramic materials (kit)		1	1	
4.	Ceramic polishing kit		2	2	
	Implant Equipment				
1.	Electrical dental chair and unit	Minimum 2 systems	1	1	
2.	Physio dispenser		1	1	
3.	Implant kit		2	2	
4.	Implants		10	10	
5.	Prosthetic components		10	10	
6.	Unit mount light cure		1	2	
7.	X-ray viewer		1	2	
8.	Needle destroyer		1	2	
9.	Ultrasonic cleaner capacity 3.5 lts		1	1	
10.	Autoclave programmable for all recommended cycles		1	2	
11.	X-ray machine with RVG		1	1	
12.	Refrigerator		1	1	
13.	Surgical kit/prosthetic kit		2	2	
14.	Educating models		1	1	
15.	Implant removing instruments		1	1	

DEPARTMENT: PERIODONTOLOGY

S. No.	NAME	SPECIFICATION	Quantity		Availability
1.	Dental Chairs and Units	Electrically operated with shadowless lamp, spittoon, 3 way syringe, instrument tray and motorized suction, micromotor attachment with contra angle handpiece,airotor attachment, ultrasonic scaler (Piezo with detachable autoclavable hand piece	One chair and unit per post-graduate student and Two chairs with unit for the faculty		
			1 Unit	2 Units	
2.	Auto clave (fully automatic) front loading		1	2	
3.	Steel bin		4	6	
4.	Airotor hand pieces		2	2	
5.	UV chamber		1	1	
6.	Formalin chamber		1	1	
7.	WHO probe		2	2	
8.	Nabers probe		2	2	
9.	Williams probe		2	2	
10.	CNC-15 probe		4	4	
11.	Gold Man fox probe		1	1	
12.	Pressure sensitive probe		1	1	
13.	Marquis color coded probe		1	1	
14.	Supra gingival scalers	set	2	2	
15.	Sub gingival scaler	set	2	2	
16.	Arkansas sharpening stone		1	1	
	Surgical Instruments				
1.	Routine surgical instrument kit (Benquis periostical elevator, periotome)	set	2	3	
2.	Surgery trolleys		6	6	
3.	X ray viewer		1	2	

4.	Surgical cassette with sterilisation pouches		4	6	
5.	Electro surgery unit		1	1	
	Special Surgical Instruments				
1.	Kirkland's knife	set	1	1	
2.	Orban's knife	set	1	1	
3	Paquette blade handle		1	1	
4.	Krane kaplan pocket marker	set	1	1	
5	Mc Calls universal curettes	set	1	1	
6.	Gracey's curettes (No.1-18)	set	2	2	
7.	Mini five curettes	set	1	1	
8.	Cumine scaler		1	1	
9.	Mallet		1	1	
10.	Chisel		1	1	
11.	Ochsenbein chisel	straight, curved	1	1	
12.	Schluger bone file		1	1	
13.	Bone fixation screw kit		1	1	
14.	Bone scrapper		1	1	
15.	Bone trephines for harvesting autografts	1 set	1	1	
16.	Bone regenerative materials	Bone graft and GTR membranes	5	5	
17.	Local drug delivery systems	At least two different agents	1 each	1	
18.	Root conditioning agent	At least two different agents	2	2	
19.	Micro needle holder		1	1	
20.	Micro scissors		1	1	
21.	Magnifying loop (2.5 – 3.5)		1	2	
22.	Operating microscope	optional	1	1	
23.	3rd generation digital probe	optional	1	1	
24.	Bone expander and bone crusher	optional	1	1	
25.	Distraction osteogenesis kit	optional	1	1	
26.	Bone mill	optional	1	1	
27.	Bone graft / membrane placement spoon		1	1	
28.	Bone condenser		1	1	
29.	Peizo-surgery unit	optional	1	1	
30.	Centrifuge for PRP/PRF preparation	optional	1	1	
31.	Soft tissue laser (8 watt)		1	1	
32.	Osteotome	set optional	1	1	
	MISCELLANEOUS INSTRUMENTS				

1.	Composite gun with material kit		1	1	
2.	Splinting kit with material		2	3	
3.	Composite finishing kit		1	1	
4.	Glass Ionomer cement		1	1	
5.	Digital camera		1	1	
6.	Intra Oral camera		1	1	
7.	Ultrasonic cleaner		1	1	
8.	Emergency kit		1	1	
9.	Refrigerator		1	1	
10.	X-ray viewer		2	2	
11.	LCD projector		1	1	
12.	Computer with internet connection with attached printer and scanner		1	1	
13.	Implant Equipment				
14.	Electrical dental chair and unit		1	1	
	Physio dispenser		1	1	
15.	Implant kit	At least two different systems	2	2	
16.	Implants		10	10	
17.	Implant maintenance kit (plastic instruments)		1 set	1 set	
18.	Implant guide		1	1	
19.	X-ray viewer		1	2	
20.	Needle destroyer		1	2	
21.	Ultrasonic cleaner capacity 3.5 ltr		1	1	
22.	Autoclave programmable for all recommended cycles		1	1	
23.	RVG with x-ray machine		1	1	
24.	Refrigerator		1	1	
25.	Surgical kit		2	2	
26.	Sinus lift kit		1	1	
27.	Educating models		1	1	
28.	Implant removing kit		1	1	

DEPARTMENT: ORAL & MAXILLOFACIAL SURGERY

S.No.	NAME	SPECIFICATION	Quantity		Availability
1.	Dental Chairs and Units	Electrically operated with shadowless lamp, spittoon, 3 way syringe, instrument tray and high evacuation, with micromotor and micro motor attachment	One chair and unit per post-graduate student and Two chairs with unit for the faculty		
			1 Unit	2 Units	

2.	Autoclave	Front loading	2	3	
3.	Fumigators		1	1	
4.	Oscillating saw	With all hand pieces pieces	1	1	
5.	**Surgical instruments** General surgery kit including tracheotomy kit Minor oral surgery kit Osteotomy kit		2 5 1	2 10 1	
	Cleft surgery kit Bone grafting kit Emergency kit Trauma set including bone plating kit Implantology kit with implants	Minimum 2 systems	1 1 1 2 1 2 10	1 1 1 2 1 2 10	
6	Distraction osteogenesis kit		1	1	
7.	Peizo surgical unit		1	1	
8.	Magnifying loops		1	1	
9.	Operating microscope and Microsurgery kit	desirable	1	1	
10.	Dermatomes		1	1	
11.	Needle destroyer		2	3	
12.	Ultrasonic Cleaner capacity 3.5 ltr		1	1	
13.	Formalin chamber		1	1	
14.	Pulse oxymeter		1	1	
15.	Ventilator		1	1	
16.	Major operation theatre with all facilities		1	1	
17.	Recovery and Intensive Care Unit with all necessary life support equipments		2 beds	2 beds	
18.	Fiberoptic light		1	1	
19.	Inpatient beds		20	20	
20.	Fiber optic laryngoscope		1	1	
21.	Computer with internet connection with attached printer and scanner		1	1	
22.	LCD projector		1	1	
23.	Refrigerator		1	1	

DEPARTMENT : CONSERVATIVE DENTISTRY AND ENDODONTICS

S.No.	NAME	SPECIFICATION	Quantity	Availability
1.	Dental Chairs and Units	Electrically operated with shadowless lamp, spittoon, 3 way syringe, instrument tray and motorized	One chair & unit per post-graduate student and two chairs with unit for the faculty	

		suction, micromotor, airotor attachment with hand pieces		
2.	ENDOSONIC HANDPIECES Mano endosonic Tips retro treatment		1 Unit 2	2 Units 3
3.	Mechanised rotary instruments including hand pieces (speed and torque control) and hand instruments various systems		3	6
4.	Rubber dam kit		1 per chair	1 per chair
5.	Autoclaves for bulk instrument sterilization vacuum (front loading)		2	3
6.	Autoclaves for hand piece sterilization		1	1
7.	Apex locators one for every two chairs		2	4
8.	Pulp tester		2	4
9.	Equipments for injectable thermoplasticized gutta percha		1	2
10.	Operating microscopes 3 step or 5 step magnification		1	1
11.	Surgical endo kits (Microsurgery)		2	2
12.	Set of hand instruments (specifications required)		1	2
13.	Sterilizer trays for autoclave		4	4
14.	Ultrasonic cleaner capacity 3.5 ltr		1	1
15.	Variable Intensity polymerization equipments - VLC units	Desirable	1	1
16.	Conventional VLC units one for every two chairs		2	4
17.	Needle destroyer		2	2
18.	Magnifying loupes one for students and one for faculty		1	2
19.	LCD projector		1	1
20.	Composite kits with different shades and polishing kits		2	4
21.	Ceramic finishing kits metal finishing kits	In ceramic labs	2	3
22.	Amalgam finishing kits		2	3
23.	RVG with x-ray machine developing kit		1	1
24.	Chair side micro abrasion		1	1
25.	Bleaching unit		1	1
26.	Instrument retrieval kits		1	1
27.	Computer with internet connection with attached printer and scanner		1	1
28.	Refrigerator		1	1
29.	Equipments for casting procedures		1	1
30.	Equipments for ceramics including induction casting machines/ furnace preheat furnaces/ wax elimination furnaces		1	1
31.	Lab micro motor/ metal grinders / sand blasters/ polishing lathes/ duplicator equipment/ vacuum investment equipments		1	1

32.	Laser (preferably hard tissue)	1	1	
33.	Face bow with semi adjustable articulator	1	2	

DEPARTMENT : ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

S. No.	NAME	SPECIFICATION	Quantity		Availability
1.	Dental Chairs and Unit	Electrically operated with shadow less lamp, spittoon, 3 way syringe, instrument tray and motorized suction	One chair & unit per PG student and Two chairs with unit for the faculty		
2.			1 Unit	2 Units	
3.	Vacuum /pressure moulding unit		1	1	
4.	Hydrogen soldering unit		1	1	
5.	Lab micromotor		3	5	
6.	Spot welders		3	5	
7.	Model trimmer (Double disc)		2	3	
8.	Light curing unit		2	2	
9.	High intensity light curing unit		1	2	
10.	Polishing lathes		2	3	
11.	Tracing tables		3	5	
12.	SLR digital camera		1	1	
13.	Scanner with tranqparency adapter		1	1	
14.	X ray viewer		3	4	
15.	LCD projector		1	1	
16.	Autoclaves for bulk instrument Sterilization vacuum (Front loading)		1	1	
17.	Needle destroyer		1	1	
18.	Dry heat steriliser		1	1	
19.	Ultrasonic scaler		1	1	
20.	Sets of Orthodontic pliers		3	3	
21.	Orthodontic impression trays		3	5	
22.	Ultrasonic cleaner capacity 3.5 ltr		1	1	
23.	Electropolisher		1	1	
24.	Typodonts with full teeth set		3	3	
25.	Anatomical articulator with face bow attachments		1	1	
26.	Free plane articulators		1	1	
27.	Hinge articulators		4	4	
28.	Computer software for cephalometrics		1	1	
29.	Computer with internet connection with attached printer and scanner		1	1	
30.	Refrigerator		1	1	

DEPARTMENT: ORAL & MAXILLOFACIAL PATHOLOGY AND ORAL MICROBIOLOGY

S. No.	NAME	SPECIFICATION	Quantity		Availability
			1 Unit	2 Units	
1.	Dental Chairs and Units	Electrically operated with shadow less lamp, spittoon, 3 way syringe, instrument tray and suction	3	6	

2.	Adequate laboratory glassware's as required for processing of biopsy specimens and staining.	Reasonable quantity should be made available		
3.	Adequate tissue cupsules / tissue embedding cassettes	Reasonable quantity should be made available		
4.	Paraffin wax bath	thermostatically controlled	1	1
5.	Leuckhart pieces		10	10
6.	Block holders		25	25
7.	Microtome	Manual	1	1
8.	Microtome	semi automated	1	1
9.	Tissue floatation water bath	thermostatically controlled	1	1
10	Slide warming table		1	1
11	Steel slide racks for staining		5	5
12	Diamond glass marker		2	2
13	Research microscope with phase contrast, dark field, polarization, image analyzer, photomacrography attachments		1	1
14.	Multi head microscope	Penta headed	1	1
15.	Binocular compound microscope		2 for faculty and one per student	4 for faculty and one per student
16.	Stereo microscope		1	1
17.	Aluminium slide trays		5	5
18.	Wooden / plastic slide boxes		5	5
19.	Wax block storing cabinet		5,000 capacity	10,000 capacity
20.	Slide storing cabinet		5,000 capacity	10,000 capacity
21.	Refrigerator		1	1
22.	Pipettes		5	5
23.	Surgical kit for biopsy		3	6
24.	Immuno histo chemistry lab		1	1
25.	Computer with Internet Connection with attached printer and scanner		1	1
26.	LCD projector		1	1
27.	**Desirable Equipment**			
28.	Cryostat		1	1
29.	Fluorescent microscope		1	1
30.	Hard tissue microtome		1	1
31.	Tissue storing cabinet (freezer)		1	1
32.	Microwave		1	1

DEPARTMENT : PUBLIC HEALTH DENTISTRY

S. No.	NAME	SPECIFICATION	Quantity	Availability
	Instruments in the department for comprehensive Oral health care programme			
1.	Dental chairs	Electrically operated with shadowless lamp, spittoon, 3 way syringe, instrument tray and motorized suction, micromotor attachment	One chair and unit per post graduate student and one chair with unit for	

		with contra angle handpiece,airotor attachment, ultrasonic scaler (Piezo) with detachable autoclavable hand piece with min 3 tips.	the faculty			
2. 3.	Extraction forceps		1 Unit 4 sets		2 Units 6 sets	
4.	Filling instruments		4 sets		6 sets	
5.	Scaling instruments	Supra gingival scaling	4 sets		6 sets	
6.	Amalgamator		1		1	
7.	Pulp tester		1		1	
8.	Autoclave		1		1	
9.	X ray viewer		1		1	
10.	Instrument cabinet		1		1	
11.	LCD or DLP multimedia projector		1		1	
	Computer with internet connection with attached printer and scanner		1		1	
13.	**For peripheral dental care or field programme**					
14.	Staff bus		1		1	
15.	Mobile dental clinic fitted with at least 2 dental chairs with complete dental unit with fire extinguisher		1		1	
16.	Ultrasonic scaler,		1		2	
17.	Ultrasonic cleaner capacity 3.5 ltr		1		1	
18.	Compressor	One with chair				
19.	Generator		1		1	
20.	Public address system, audio-visual aids		1		1	
21.	Television		1		1	
22.	Digital Versatile Disc Player		1		1	
23.	Instrument cabinet, emergency medicine kits, Blood pressure apparatus		1		1	
24.	Portable oxygen cylinder		1		1	
25.	Portable chair		1		1	
26.	Refrigerator		1		1	

DEPARTMENT : PAEDODONTICS AND PREVENTIVE DENTISTRY

S. No.	NAME	SPECIFICATION	Quantity	Availability
1	Dental Chairs and Units	Electrically operated with shadowless lamp, spittoon, 3 way syringe, and motorised suction.	One chair and unit per post-graduate student and Two chairs with unit for the faculty	

		microvisor attachment with contra angle miniature handpiece,airotor attachment with miniature handpiece, dental operator stool (40") dental chairs shall be pedo chairs	
2.			1 Unit / 2 Units
3.	Pedo extraction forceps sets		3 / 4
4.	Autoclaves for bulk instrument sterilization vacuum (Front loading)		1 / 2
5.	RVG with intra oral x-ray unit		1 / 1
6.	Automatic developer		1 / 1
7.	Pulp tester		2 / 3
8	Apex locator		1 / 1
9.	Rubber dam kit	One set per students	1 / 1
10.	Injectable GP condenser		1 / 1
11.	Endodontic pressure syringe		1 / 1
12.	Glass bead sterilizer		2 / 4
13.	Spot welder		2 / 3
14.	Ultrasonic scalers		2 / 4
15.	Needle destroyer		1 / 1
16.	Formalin chamber		1 / 1
17.	Ultrasonic cleaner capacity 3.5 lts		1 / 1
18.	X-ray viewer		2 / 3
19.	Amalgamators		1 / 2
20.	Plaster dispenser		2 / 2
21.	Dental lathe		1 / 2
22.	Vibrator		2 / 3
23.	Typodonts	One set per student	1 / 1
24.	Soldering unit		1 / 1
25.	Band pushing beak pliers		2 Sets / 2 Sets
26.	Proximal contouring pliers		2 / 3
27.	Crown crimping pliers		2 / 3
28.	Double beak pliers anterior and posterior		2 / 3
29.	Lab micro motor		2 / 3
30.	Acryliser		1 / 2
31.	Magnifying loupes		1 / 1
32.	Convection oxidation unit	Desirable	1 / 1
33.	Pulse oxymeter		1 / 1
34.	Phantom head table with attached Light, Airotor and micro motor	One set per each P.G. Student	1 / 1
35.	Computer with internet connection with attached printer and scanner		1 / 1
36.	LCD projector		1 / 1
37.	Refrigerator		1 / 1

DEPARTMENT: ORAL MEDICINE AND RADIOLOGY

S. No.	NAME	SPECIFICATION	Quantity	Availability
1.	Dental Chairs and Units	Electrically operated with shadowless lamp, spittoon, 3 way syringe.	One chair and unit per post-graduate student and one chair with unit	

		instrument tray and suction	for the faculty	
2.			1 Unit	2 Units
3.	RVG with intra oral radiography machine (FDA Approved)	55-70 kVp with digital compatibility	1	1
4.	Extra oral radiography machine	100 kvp	1	1
5.	Panoramic radiography (OPG) machine with cephalometric and TMJ attachment with printer	Digital compatibility	1	1
	Intra-oral camera		1	2
	Pulp tester		2	4
	Autoclave		1	1
	Punch biopsy tool		2	3
	Biopsy equipment		1	2
	Surgical trollies		2	2
	Emergency medicines kit		1	1
	Extra oral cassettes with intensifying screens (Conventional and rare earth)		4	6
	Lead screens		2	2
	Lead aprons		2	2
	Lead gloves		2	2
	Radiographic filters (Conventional and rare earth)		1	1
	Dark room with safe light facility		1	1
	Automatic radiographic film processors		2	2
	Radiographic film storage lead containers		1	1
	Thyroid collars		1	1
	Digital sphygmomanometer		1	1
	Digital blood glucose tester		1	1
	Digital camera		1	1
	X-ray viewer boxes		2	3
	Lacrimal probes		2 sets	2 Sets
	Sialography cannula		2 sets	2 Sets
	Illuminated mouth mirror and probe		2	2
	Computer with internet connection with attached printer and scanner		1	1
	LCD projector		1	1
	Refrigerator		1	1

Note: Any regulations, clause which is not mentioned in the above, shall be as per the DCI – MDS Regulations notified vide ref No. DE-87-2017, Dated 1st September 2017.

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