

SIBAR INSTITUTE OF DENTAL SCIENCES, GUNTUR

COURSE OUTCOMES FOR BDS DEGREE

| BDS COURSE AND YEAR | COURSE OUTCOMES |
|--|---|
| I YEAR BDS | |
| HUMAN ANATOMY, EMBRYOLOGY, HISTOLOGY & MEDICAL GENETICS | <p>a) KNOWLEDGE & UNDERSTANDING: At the end of the 1st year BDS course in Anatomical Sciences the undergraduate student is Expected to:</p> <ol style="list-style-type: none">1. Know the normal disposition of the structures in the body while clinically examining a Patient 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 of The disease processes.4. Know the nervous system to locate the site of lesions according to the sensory and or motor Deficits encountered.5. Have an idea about the basis of abnormal development, critical stages of development, effects Of teratogens, genetic mutations and environmental hazards.6. Know the sectional anatomy of head neck and brain to read the features in radiographs and Pictures taken by modern imaging techniques.7. Know the anatomy of cardio-pulmonary resuscitation. <p>b) SKILLS</p> <ol style="list-style-type: none">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. |

| | |
|--------------------------------|---|
| <p>HUMAN PHYSIOLOGY</p> | <p>a) KNOWLEDGE At the end of the course, the student will be able to:</p> <ol style="list-style-type: none"> 1. Explain the normal functioning of all the organ systems and their interactions for well co-ordinated Total body function. 2. Assess the relative contribution of each organ system towards the maintenance of the milieu Interior. 3. List the physiological principles underlying the pathogenesis and treatment of disease. <p>b) SKILLS At the end of the course, the student shall be able to :</p> <ol style="list-style-type: none"> 1. Conduct experiments designed for the study of physiological phenomena. 2. Interpret experimental and investigative data 3. Distinguish between normal and abnormal data derived as a result of tests which he/she has Performed and observed in the laboratory. |
| <p>BIOCHEMISTRY</p> | <p>KNOWLEDGE 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 acid tests can be used to determine what is to be taught or what is to Be learnt. A few examples are given below.</p> <ol style="list-style-type: none"> 1. Need not know the structure of cholesterol. Should know why it cannot be carried free in Plasma. 2. Mutarotation should not be taught. Student should know why amylase will not hydrolyse Cellulose. 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 |

| | |
|---|--|
| | <p>glycogen level in liver or muscle.</p> <p>7. Need not know about urea or creatinine clearance tests. Should know the basis of increase of urea and creatinine in blood in renal insufficiency.</p> <p>8. Need not know the structure of insulin. Should know why insulin level in circulation is normal in most cases of maturity onset diabetes.</p> <p>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.</p> <p>10. Need not know the mechanism of action of prolyhydroxylase. Should know why the gum bleeds in scurvy.</p> <p>11. Need not know the structure of Vitamin K. Should know the basis of internal bleeding arising due to its deficiency.</p> <p>12. Need not remember the structure of HMGCoA. Should know why it does not lead to increased cholesterol synthesis in starvation.</p> |
| <p>DENTAL ANATOMY, EMBRYOLOGY AND ORAL HISTOLOGY</p> | <p>SKILLS</p> <p>The student should acquire basic skills in :</p> <ol style="list-style-type: none"> 1. Carving of crowns of permanent teeth in wax. 2. Microscopic study of Oral tissues. 3. Identification of Deciduous & Permanent teeth. 4. Age estimation by patterns of teeth eruption from plaster casts of different age groups. <p>OBJECTIVES</p> <p>After a course on Dental Anatomy including Embryology and Oral Histology,</p> <ol style="list-style-type: none"> 1. The student is expected to appreciate the normal development, morphology, structure & functions of Oral tissues & variations in different pathological/non-pathological states. 2. The student should understand the histological basis of various dental treatment procedures and Physiologic ageing process in the dental tissues. 3. The students must know the basic knowledge of various research methodologies. |

II YEAR BDS

GENERAL PATHOLOGY

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 alterations in 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 and

Explain their observations in terms of disease processes.

3. To Integrate knowledge from the basic sciences, clinical medicine and dentistry in the study of Pathology.

4. To demonstrate understanding of the capabilities and limitations of morphological Pathology in its

Contribution to medicine, dentistry and biological research.

5. To demonstrate ability to consult resource materials outside lectures, laboratory and tutorial

Classes.

MICROBIOLOGY

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 knowledge

Relevantly.

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

| | |
|--|---|
| | <p>various oral lesions.</p> <p>2. Should be able to select, collect and transport clinical specimens to the laboratory.</p> <p>3. Should be able to carry out proper aseptic procedures in the dental clinic.</p> |
| <p>GENERAL AND DENTAL PHARMACOLOGY AND THERAPEUTICS</p> | <p>OBJECTIVES:</p> <p>At the end of the course the student shall be able to:</p> <p>i) Describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs in general and in dentistry in particular.</p> <p>ii) List the indications, contraindications; interactions, and adverse reactions of commonly used Drugs with reason.</p> <p>iii) Tailor the use of appropriate drugs in disease with consideration to its cost, efficacy, safety for Individual and mass therapy needs.</p> <p>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.</p> <p>v) Integrate the rational drug therapy in clinical pharmacology.</p> <p>vi) Indicate the principles underlying the concepts of “Essential drugs”.</p> <p>SKILLS:</p> <p>At the end of the course the student shall be able to:</p> <p>1) Prescribe drugs for common dental and medical ailments.</p> <p>2) To appreciate adverse reactions and drug interactions of commonly used drugs.</p> <p>3) Observe experiments designed for study of effects of drugs.</p> <p>4) Critically evaluate drug formulations and be able to interpret the clinical pharmacology of Marketed preparations commonly used in dentistry.</p> <p>5) INTEGRATION: Practical knowledge of use of drugs in clinical practice will be acquired through Integrated teaching with clinical departments.</p> |

| | |
|--|--|
| <p>DENTAL MATERIALS</p> | <p>OBJECTIVES:</p> <p>To understand the evolution and development of science of dental material.</p> <p>To explain purpose of course in dental materials to personnels concerned with the profession of the Dentistry. Knowledge of physical and chemical properties. Knowledge of biomechanical requirements of Particular restorative procedure. An intelligent compromise of the conflicting as well as co-ordinating Factors into the desired Ernest. Laying down standards or specifications of various materials to guide to Manufacturers as well as to help professionals.</p> <p>Search for newer and better materials which may answer our requirements with greater satisfaction. To understand and evaluate the claims made by manufactures of dental materials</p> <p>NEEDS FOR THE COURSE:</p> <p>The profession has to rise from an art to a science, , the need for the dentist to possess adequate knowledge of materials to exercises his best through knowledge of properties of different types of Materials. The growing concern of health hazards due to mercury toxicity, inhalation of certain vapor or dust materials, irritations and allergic reaction to skin due to contact of materials. Materials causing irritation of oral tissues, pH of restorative materials causing inflammation and necrosis of pulp which is a cause for the dentist to possess wider knowledge of physical, chemical and biological properties of Materials being used. For the protection for the patient and his own protection certain criteria of selection are provided that will enable the dentist to discriminate between facts and propaganda, which Will make a material biologically accept</p> |
| <p>PRE CLINICAL CONSERVATIVE DENTISTRY LABORATORY</p> | <p>1. Identification and study of handcutting instruments chisles, gingival margin trimmers, Excavators and hatchet.</p> <p>2. Identification and use of rotary cutting instruments in contra angle hand pieces burs (Micromotor)</p> |

| | |
|--|--|
| | <p>3. Preparation class I and extended class I and class II and MOD's and class V amounting to 10 Exercises in plaster models.</p> <p>4. 10 exercises in mounted extracted teeth of following class I, 4 in number class I extended cavities 2, class II 4 in number and Class V 2 in number. Cavity preparation base application matrix and Wedge placement restoration with amalgam.</p> <p>5. Exercises on phantom head models which includes cavity preparation base and varnish application matrix and wedge placement followed by amalgam restoration. Class I 5 Class I with extension 2 Class II 10 Class II Mods 2 Class V and III for glass ionomers 4 Class V for amalgam 2</p> <p>6. Polishing of above restorations.</p> <p>7. Demonstration of Class III and Class V cavity preparation. For composites on extracted tooth Completing the restoration.</p> <p>8. Polishing and finishing of the restoration of composites.</p> <p>9. Identification and manipulation of varnish bases like Zinc Phosphate, Poly carboxylate, Glass Ionomers, Zinc Oxide, Eugenol cements.</p> <p>10. Identification and manipulation of various matrices, tooth separators and materials like Composites and modified glass ionomer cements.</p> <p>11. Cast Restoration 1. Preparation of Class II inlay cavity 2. Fabrication of wax pattern 3. Sprue for inner attachment investing 4. Investing of wax pattern 5. Finishing and cementing of class II inlay in extracted tooth.</p> <p>12. Endodontics 1. Identification of basic endodontic instruments 2. Coronal access cavity preparation on extracted. Upper central incisors 3. Determination of working length.</p> |
|--|--|

| | |
|---|---|
| | <p>4. Biomechanical preparation of root canal space of central incisor</p> <p>5. Obfuration of root canal spaces. Absens of cornal access cavity.</p> <p>6. Closure of acess cavity</p> |
| ORAL PATHOLOGY & ORAL MICROBIOLOGY | <p>OBJECTIVES:</p> <p>At the end of Oral Pathology & Oral Microbiology course, the student should be able to comprehend -</p> <ol style="list-style-type: none"> 1. The different types of pathological processes that involves the oral cavity. 2. The manifestations of common diseases, their diagnosis & correlation with clinical pathological Processes. 3. An understanding of the oral manifestations of systemic diseases should help in correlating with The systemic physical signs & laboratory findings. 4. The student should understand the underlying biological principles governing treatment of oral Diseases. 5. The principles of certain basic aspects of Forensic Odontology. <p>SKILLS:</p> <ol style="list-style-type: none"> 1. Microscopic study of common lesions affecting oral tissues through microscopic slides & projection slides. 2. Study of the disease process by surgical specimens. 3. Study of teeth anomalies/polymorphisms through tooth specimens & plaster casts. 4. Microscopic study of plaque pathogens. 5. Study of haematological preparations (blood films) of anaemias & leukemias. |
| III YEAR BDS | |
| GENERAL MEDICINE | <p>Special emphasis should be given throughout on the importance of various diseases as applicable to Dentistry.</p> <ol style="list-style-type: none"> 1. Special precautions/ contraindication of anaesthesia and various dental procedures in Different systemic diseases. 2. Oral manifestations of systemic diseases. 3. Medical emergencies in dental practice. <p>A dental student should be taught in such a manner he/she is able to record the arterial pulse, blood</p> |

| | |
|---|--|
| | <p>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.</p> |
| GENERAL SURGERY | <p>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 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.</p> |
| IV YEAR BDS | |
| CONSERVATIVE DENTISTRY AND ENDODONTICS | <p>A). Knowledge and understanding: The graduate should acquire the following knowledge during the period of training.</p> <ol style="list-style-type: none"> i. To diagnose and treat simple restorative work for teeth. ii. To gain knowledge about aesthetic restorative material and to translate the same to patients needs. iii. To gain the knowledge about endodontic treatment on the basis of scientific foundation. iv. To carry out simple endodontic treatment. v. To carry out simple luxation of tooth and its treatment and to provide emergency endodontic Treatment. <p>SKILLS: He should attain following skills necessary for practice of dentistry</p> <ol style="list-style-type: none"> i) To use medium and high speed hand pieces to carry out restorative work. ii) Poses the skills to use and familiarize endodontic instruments and materials needed for carrying out simple endodontic treatment. iii) To achieve the skills to translate patients esthetic needs along with function. |

**ORAL &
MAXILLOFACIAL
SURGERY**

a) Knowledge & Understanding:

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 and General 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 oral Surgical 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 principals involved in Patient management.
7. Should know ethical issues and communication ability.

b) Skills:

1. A graduate should have acquired the skill to examine any patient with an oral surgical problem in An orderly manner. Be able to understand requisition of various clinical and laboratory Investigations and is capable of formulating differential diagnosis.
2. Should be competent in the extraction of teeth under both local and general anaesthesia.
3. Should be able to carry out certain minor oral surgical procedures under 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 principals involved in Inpatient management.

| | |
|--|--|
| <p>ORAL MEDICINE AND RADIOLOGY</p> | <p>AIMS:</p> <p>(1) To train the students to diagnose the common disorders of Orofacial region by clinical examination and with the help of such investigations as may be required and medical management of oro-facial disorders with drugs and physical agents.</p> <p>(2) To train the students about the importance, role, use and techniques of radiographs/digital radiograph and other imaging methods in diagnosis.</p> <p>(3) The principles of the clinical and radiographic aspects of Forensic Odontology.</p> <p>The syllabus in ORAL MEDICINE & RADIOLOGY is divided into two main parts.</p> <p>(I) Diagnosis, Diagnostic methods and Oral Medicine (II) Oral Radiology. Again the part ONE is subdivided into three sections. (A) Diagnostic methods (B) Diagnosis and differential diagnosis (C) Oral Medicine & Therapeutics.</p> |
| <p>ORTHODONTICS & DENTAL ORTHOPAEDICS</p> | <p>Knowledge:</p> <ol style="list-style-type: none"> 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. <p>Skills:</p> <ol style="list-style-type: none"> 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. |
| PAEDIATRIC & PREVENTIVE DENTISTRY | <p>Knowledge:</p> <ol style="list-style-type: none"> 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 <p>Skills:</p> <ol style="list-style-type: none"> 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. 5. To acquire skills in managing efficiently life threatening conditions with emphasis on basic life support measures. |
| PUBLIC HEALTH DENTISTRY | <p>Knowledge:</p> <p>At the conclusion of the course the student shall have a knowledge of the basis of public health, preventive dentistry, public health problems in India, Nutrition, Environment and their role in health, basics of dental statistics, epidemiological methods, National oral health policy with emphasis on oral health policy.</p> <p>Skill and Attitude:</p> <p>At the conclusion of the course the students shall have require at the skill of identifying health problems affecting the society, conducting health surveys, conducting health education classes and deciding health strategies. Students should develop a positive attitude</p> |

| | |
|--|---|
| | <p>towards the problems of the society and must take responsibilities in providing health.</p> <p>Communication abilities:</p> <p>At the conclusions of the course the student should be able to communicate the needs of the community efficiently, inform the society of all the recent methodologies in preventing oral disease</p> |
| PERIODONTOLOGY | <p>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.</p> <p>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.</p> |
| PROSTHODONTICS AND CROWN & BRIDGE | <p>KNOWLEDGE:</p> <p>The candidate should possess knowledge of applied basic and systemic medical sciences.</p> <ul style="list-style-type: none"> • 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 • 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. • Students shall acquire knowledge and practice of history taking, Diagnosis, treatment planning, prognosis, record maintenance of oral, craniofacial and systemic region. • 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.
- Instructions for patients in after care and preventive Prosthodontics and management of failed restorations shall be possessed by the students.
- 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.
- Ability to diagnose and plan treatment for patients requiring Prosthodontic therapy
- Ability to read and interpret radiographs, and other investigations for the purpose of diagnosis and treatment planning.
- 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
- 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.
- Should have knowledge of age changes, geriatric psychology, nutritional considerations and prosthodontic therapy in the aged population.
- Should have 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.
- 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
- Should identify social, cultural, economic, environmental, educational and emotional determinants of the patient and consider them in planning the treatment.
- Should identify cases, which are outside the area of his specialty / competence, refer them to appropriate specialists and perform interdisciplinary case management.
- To advice regarding case management involving surgical and interim treatment
- Should be competent in specialization of team management in craniofacial prosthesis design.
- 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.
- Should attend continuing education programmes, seminars and conferences related to Prosthodontics, thus updating himself/herself.
- To teach and guide his/her team, colleagues and other students.
- 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.
- 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.

- Should have an ability to plan and establish Prosthodontics clinic/hospital teaching department and practice management.

- 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:

- 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.

44

- To understand the prevalence and prevention of diseases of craniomandibular system related to prosthetic dentistry.

- 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.

- 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.

- 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.

- 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

- Should be able to critically appraise articles published and

| | |
|--|---|
| | <p>understand various components of different types of articles and be able to gather the weight of evidence from the same</p> <ul style="list-style-type: none">• To identify target diseases and create awareness amongst the population regarding Prosthodontic therapy.• 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.• 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• To understand demographic distribution and target diseases of Cranio mandibular region related to Prosthodontics. |
|--|---|

COURSE OUTCOMES FOR MDS DEGREE

| | |
|--|--|
| PROSTHODONTICS AND CROWN & BRIDGE | KNOWLEDGE: <p>The candidate should possess knowledge of applied basic and systemic medical sciences.</p> <ul style="list-style-type: none">• 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• 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. • Students shall acquire knowledge and practice of history taking, Diagnosis, treatment planning, prognosis, record maintenance of oral, craniofacial and systemic region.• 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• Arrangement for retention, stability, esthetics, phonation, psychological comfort, fit and insertion.• Instructions for patients in after care and preventive Prosthodontics and management of failed restorations shall be possessed by the students. • 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. • Ability to diagnose and plan treatment for patients requiring Prosthodontic therapy • Ability to read and interpret radiographs, and other investigations |
|--|--|

for the purpose of diagnosis and treatment planning.

- 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

- 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.

- Should have knowledge of age changes, geriatric psychology, nutritional considerations and prosthodontic therapy in the aged population.

- Should have 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.

- 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

- Should identify social, cultural, economic, environmental, educational and emotional determinants of the patient and consider them in planning the treatment.

- Should identify cases, which are outside the area of his specialty / competence, refer them to appropriate specialists and perform interdisciplinary case management.

- To advice regarding case management involving surgical and interim treatment

- Should be competent in specialization of team management in

craniofacial prosthesis design.

- 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.
- Should attend continuing education programmes, seminars and conferences related to Prosthodontics, thus updating himself/herself.
- To teach and guide his/her team, colleagues and other students.
- 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.
- 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.
- Should have an ability to plan and establish Prosthodontics clinic/hospital teaching department and practice management.
- 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:

- 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.
- To understand the prevalence and prevention of diseases of craniomandibular system related to prosthetic dentistry.
- 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

| | |
|------------------------------|---|
| | <p>provide quality health care in the craniofacial regions.</p> <ul style="list-style-type: none"> • The candidate should be able to demonstrate good interpersonal, communication skills <i>and</i> 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. • 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. • 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 • 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 • To identify target diseases and create awareness amongst the population regarding Prosthodontic therapy. • 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. • 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 • To understand demographic distribution and target diseases of Cranio mandibular region related to Prosthodontics. |
| <p>PERIODONTOLOGY</p> | <p>A) KNOWLEDGE: Discuss historical perspective to advancement in the subject proper and related topics.</p> <ul style="list-style-type: none"> • Describe etiology, pathogenesis, diagnosis and management of common periodontal diseases with emphasis on Indian population |

- Familiarize with the biochemical, microbiologic and immunologic genetic aspects of periodontal pathology
- Describe various preventive periodontal measures
- Describe various treatment modalities of periodontal disease from historical aspect to currently available ones
- Describe interrelationship between periodontal disease and various systemic conditions
- Describe periodontal hazards due to estrogenic causes and deleterious habits and prevention of it
- 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

| | |
|--|--|
| | <p>disease, maintenance after the treatment</p> <ul style="list-style-type: none"> • 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 |
| <p>ORAL AND MAXILLOFACIAL SURGERY</p> | <p>Knowledge:</p> <ul style="list-style-type: none"> • To have acquired adequate knowledge and understanding of the etiology, pathophysiology 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 of 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. <p>Skills:</p> <ul style="list-style-type: none"> • To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedures and order relevant laboratory tests and interpret 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 the problems of the oral and Maxillofacial and the related area. |

| | |
|--|---|
| | <ul style="list-style-type: none"> • Capable of providing care for maxillofacial surgery patients. |
| <p>CONSERVATIVE DENTISTRY AND ENDODONTICS</p> | <p>Knowledge:</p> <p>At the end of 36 months of training, the candidates should be able to:</p> <ul style="list-style-type: none"> • Describe etiology, pathophysiology, periapical diagnosis and management of common restorative situations, endodontic situations that will include contemporary management of dental caries, management of trauma and pulpal pathosis 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. <p>Use information technology tools and carry out research both basic and clinical with the aim of his publishing his work and presenting the same at scientific platform.</p> <p>Skills:</p> <ul style="list-style-type: none"> • Take proper chair side history, examine the patient and perform medical and dental diagnostic procedures 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, surgical and non-surgical Endodontics as well as endodontic-periodontal surgical procedures |

| | |
|--|---|
| | <p>as part of multidisciplinary approach to clinical condition.</p> <ul style="list-style-type: none"> • 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. • Should have proper knowledge of sterilization procedures |
| <p>ORTHODONTICS AND DENTOFACIAL ORTHOPEDECS</p> | <p>Knowledge:</p> <ol style="list-style-type: none"> 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. <p>Skills:</p> <ol style="list-style-type: none"> 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. |

| | |
|--|---|
| <p>ORAL & MAXILLOFACIAL PATHOLOGY AND ORAL MICROBIOLOGY</p> | <p>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.</p> <ul style="list-style-type: none"> • 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 ultra structural 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 totake part in group discussions. |
| <p>PUBLIC HEALTH DENTISTRY</p> | <p>Knowledge:</p> <ul style="list-style-type: none"> • Applied 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. <p>Skills:</p> <p>The candidate should be able to</p> <ol style="list-style-type: none"> 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. |

| | |
|--|---|
| | <ol style="list-style-type: none"> 2. Plan and perform all necessary treatment, prevention and promotion of Oral Health at the individual and community level. 3. Plan appropriate Community Oral Health Program, conduct the program and evaluate, at the community level. 4. Ability to make use of knowledge of epidemiology to identify causes and plan appropriate preventive and control measures. 5. Develop appropriate person power at various levels and their effective utilization. 6. Conduct survey and use appropriate methods to impart Oral Health Education. 7. Develop ways of helping the community towards easy payment plan, and followed by evaluation for their oral health care needs. 8. Develop the planning, implementation, evaluation and administrative skills to carry out successful community Oral Health Programs. |
| <p>PEDIATRIC AND PREVENTIVE DENTISTRY</p> | <p>OBJECTIVES:</p> <p>At the end of 3 years of training the candidate should be able to</p> <ol style="list-style-type: none"> 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 <p>Skills:</p> <ol style="list-style-type: none"> 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. 5. To acquire skills in managing efficiently life threatening conditions with emphasis on basic life support measures. |

| | |
|--|--|
| ORAL MEDICINE AND RADIOLOGY | <p>Knowledge: Theoretical, Clinical and practical knowledge of all oral mucosal lesions, skeletal involvement of maxillofacial region, diagnostic procedures pertaining to them and latest information of imaging modules.</p> <p>Skills: Three important skills need to be imparted in maxillofacial diseases</p> <ol style="list-style-type: none">1. Diagnostic skill in recognition of oral diseases with radiographic diagnosis and their management2. Research skills in handling scientific problems pertaining to oral treatment3. Clinical and Didactic skills in encouraging younger doctors to attain learning objectives |
|--|--|