

DS201- PROSTHODONTICS AND CROWN & BRIDGE**Aim:**

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 Prosthodontics 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 behavioural and clinical science that are beyond the treatment skills of the general BDS graduate and MDS graduate of other specialities 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, behavioural 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 planned treatment for patients requiring a Prosthodontic therapy
- Ability to read and interpret a radiograph and other investigations for the purpose of diagnoses , treatment plan
- Tooth and tooth surface restorations, Complete denture prosthodontics, removable partial dentures Prosthodontics, fixed prosthodontics and maxillofacialand 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 forensicodontology 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 speciality/ 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.
- 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 the 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/hospital teach⁸; department and practice management
- Should have a sound knowledge for the application of pharmacology. Effects drugs on oral tissue and systems of a body and for medically compromised

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 procedures 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, management.
- 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 patient's 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 Prosthodontics 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.

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.

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, Behavioural 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 Master's 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 head and 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 - plantigrade and orthograde 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 haemorrhage, 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 behaviour 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, and 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- Intraoral: 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 dental health. Medical emergencies in the dental offices - Prevention, preparation, medicolegal 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. Assessments 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 includes honorable 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 material 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.

Part II

Paper I: Removable Prosthodontics and Implant supported prosthesis (Implantology), Geriatric dentistry and Cranio facial Prosthodontics

Removable Prosthodontics And Implants:

- Prosthodontic treatment for completely edentulous patients** - Complete denture, immediate complete denture, single complete denture, tooth supported complete denture, Implant supported Prosthesis for completely edentulous
- 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 Implantsupported 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) Sequelae caused by wearing complete denture - the denture in the oral environment - 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 - mucosal 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, loss 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 the problem.
- l) 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 fossae, sublingual gland region, alveolingual sulcus, Mandibular impressions - preliminary impressions, custom tray, refining, preparing the tray\, final impressions.

- o) 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.
- p) 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.
- q) 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 incisal guidance.
- r) 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.
- s) 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.
- t) 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.
- U) Implant supported prosthesis for partially edentulous patients - Clinical and laboratory protocol: Implant supported prosthesis, managing problems and implications.

- Introduction and Historical Review
- Biological, clinical and surgical aspects of oral implants
- Diagnosis and treatment planning
- Radiological interpretation for selection of fixtures
- Radiological interpretation for selection of fixtures

- Splints for guidance for 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 supports 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, extra coronal 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 rests, canine rests, continuous bar retainers and **linguoplates**, modification areas, rugae support, direct - indirect retention.

Principles of removable partial Denture design - bio mechanic considerations, and the factors Influence after mouth preparations - Occlusal relationship of remaining ^T1eeth, orientation of Occlusal plane, available space for restoration, arch integrity, tooth morphology, response of oral structure to previous stress, periodontal conditions, abutment support, tooth supported and tooth and tissue supported, need for indirect retention, clasp design, need for rebasing, secondary impression, need for abutment tooth modification, type of major connector, type of teeth selection, patients past 'experience, method of replacing single teeth or missing anterior teeth.

Difference between tooth supported and tissue supported partial dentures, essential of partial denture design, components of partial denture design, tooth support, ridge support, stabilizing components, guiding planes, use of splint bar for denture support, internal clip attachments, overlay abutment as support for a denture base, use of a component partial to gain support.

- c. Education of patient
- d. Diagnosis and treatment planning
- e. Design, treatment sequencing and mouth preparation
- f. Surveying - Description of dental surveyor, purposes of surveyor procedure of survey, Aims and objectives in surveying of diagnostic cast and master cast, Final path of placement,

factors that determine path of placement and removal, Recording relation of cast to surveyor, measuring retention, Blocking of master cast - paralleled block out, shaped block out, arbitrary block out and relief.

- g. Diagnosis and treatment planning - Infection control and cross infection barriers -clinical and laboratory and hospital and lab waste management, Objectives of prosthodontic treatment, Records, systemic evaluation, Oral examination, preparation of diagnostic cast, interpretation of examination data, radiographic interpretation, periodontal considerations, caries activity, prospective surgical preparation, endodontic treatment, analysis of occlusal factors, fixed restorations, orthodontic treatment, need for determining the design of components, impression procedures and occlusion, need for reshaping remaining teeth, reduction of unfavorable tooth contours, differential diagnosis: fixed or removable partial dentures, choice between complete denture and removable partial dentures, choice of materials
- h. Preparation of Mouth for removable partial dentures - Oral surgical preparation, conditioning of abused and irritated tissues, periodontal preparation - objectives of periodontal therapy, periodontal diagnosis, control therapy, periodontal surgery.
- i. Preparation of Abutment teeth - Classification of abutment teeth, sequence of abutment preparations on sound enamel or existing restorations, conservative restoration using crowns, splinting abutment teeth, utilization, temporary crowns to be used as abutment.
- j. Impression Materials and Procedures for Removable Partial Dentures - Rigid materials, thermoplastic materials, Elastic materials, Impressions of the partially edentulous arch, Tooth supported, tooth tissue supported, Individual impression trays.
- k. Support for the Distal Extension Denture Base - Distal extension removable partial denture, Factors influencing the support of distal extension base, Methods for obtaining functional support for the distal extension base.
- l. Laboratory Procedures - Duplicating a stone case, Waxing the partial denture framework, Anatomic replica patterns, Spruing, investing, burnout, casting and finishing of the partial denture framework, making record bases, occlusion rims, making a stone occlusal template from a functional occlusal record, arranging posterior teeth to an opposing cast or template, types of anterior teeth, waxing and investing the 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.

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 lagophthalmos 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, and Material and laboratory procedures for maxillofacial prosthesis.

Paper II: Fixed Prosthodontics, occlusion, TMJ and esthetics.**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 Craniomandibular 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 for 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 mal relationship problems, trans cranial radiography, postoperative care of occlusal therapy.

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, periodontal 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, inceram etc. porcelain jacket crowns partial 3/4, half and half, riduculer, telescopic, telescopic, pin - hole, pin - ledge, laminates, inlays, onlays and preparations for restoration of teeth - amalgam, glass ionomer and composite resins, Resin Bond retainer, Gingival marginal preparations - Design, material selection, and biological and mechanical considerations - intracoronar retainer and precision attachments - custom made and readymade.
- 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 ionomer, 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.

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, and 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, Osteonecrosis, 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.

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.

Paper III: Descriptive and analyzing type question 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 teaching and learning activities in each speciality.

Prosthodontic treatment should be practiced by developing skills by teaching various and more number of patients to establish skill for diagnoses and treatment and aftercare with bio-mechanical, biological, bio-esthetics, Bio-phonetics and all treatment should be carried out in more number for developing clinical skill

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, periodontology, 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.

1st 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 bio mechanical, bio-esthetics knowledge of using in laboratory and clinics including testing methods.
- Participation and presentation in seminars, didactics lectures

- Evaluation - Internal Assessment examinations on Applied subjects

2nd YEAR M.D.S

- Acquired confidence in obtaining various phases and techniques for provide 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 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.
- Ist stage and IInd 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

3rd 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 – 3/4th , 4/5th , 7/8th , 1/2 crowns
- Pin-ledge
- Radicular crowns
- Full crowns

Management of failed restoration

3. Tooth replacements

PARTIAL

- Tooth supported

Fixed partial denture

COMPLETE

Overdenture

- Tissue Supported
Intermediate partial denture

Interim partial denture
Immediate denture

Complete denture

Immediate
complete
Denture

- Tooth and tissue supported
Precision attachment

Cast partial denture

Overdenture

- Implant supported
retained

Cement retained
Ball attachment
Clip attachment

Bar attachment Screw

- Tooth and implant supported
Cement retained

Screw retained

- Root supported
Management of failed restoration

Dowel and core

Overdenture
Pin retained

- > **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

4. Tooth and tissue defects (Maxillo- facial and Cranio-facial prosthesis)

A. Congenital Defects

- a. Cleft lip and palate

Obturator

- > Feeding
- > Surgical
- > 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
- l. Nasal stents
- m. Tongue prosthesis
- n. Burn stents
- o. Auditory inserts
- p. Trismus appliances
- q. Prosthesis for lagophthalmos of the eyeManagement of failed restoration

5. T. M. Jand 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 patientManagement of failed restorations

6. Esthetic/Smile designing

- a. Laminates / Veneers
- b. Tooth contouring (peg laterals, malformed teeth)
- c. Tooth replacements
- d. Team Management of failed restoration

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 considerationsManagement of failed restorations

9. Preventive measures

- a. Diet and nutrition modulation and counseling
- b. Referrals

THE BENCH WORK SHOULD BE COMPLETED BEFORE THE CLINICAL WORKSTARTS 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)
Class I Class II Class III Class IV
- 2. Designing of various components of RPD
- 3. Wax pattern on refractory castClass I
Class II Class III Class IV
- 4. Casting and finishing of metal frameworks
- 5. Acrylisation on metal frameworks forClass I
Class III with modification

III. Fixed Partial Denture

- 1. Preparation of ivory teeth/natural teeth :FVC **for** metal
FVC for ceramic Porcelain jacket crownAcrylic jacket crown PFM crown
3/4th (canine, premolar and central)7/8th posterior
Proximal half crownInlay - Class I, II, V
Onlay-Pin ledged, pinholeLaminates

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.

Wax additive technique

3-unit wax pattern (maxillary and Mandibular) Full mouth

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 I

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

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

O -Washes up and observes.A-Assists a senior

PA- performs procedure under the direct supervision of a senior specialistPI- Performs independently

PROCEDURE	CATEGORY			
	0	A	PA	PI
"Tooth and tooth surface restoration)	2	2	2	10
Composites - fillings, laminates, inlay, Onlay) Ceramics -	2	2	2	10
laminates, inlays, Onlay) Glass ionomer	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
Pin ledge and pinhole crowns	1	-	-	5
Telescopic crowns	1	-	-	5
Interradicular 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	1	1	1	6

Applegate classification with modification)				
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 TMJ syndromes	-	-	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	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 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. - 35 Marks

- a) C D - 1 mark
- b) RPD - 2 marks
- c) FPD including single tooth and surface restoration - 2 marks
- d) I S P (implant supported prosthesis) - 5 marks
- e) Occlusal rehabilitation - 5 marks
- f) T.M.J. - 5 marks
- g) Maxillofacial Prosthesis - 5 marks
- h) Preclinical Exercises - 10 marks

2. Present actual treated patients CD. Prosthesis and Insertion - 75 Marks

- a) Discussion on treatment plan and patient review - 10 marks
- a) Tentative jaw relation records - 5 marks
- b) Face Bow - transfer - 5 marks
- c) Transferring it on articulators - 5 marks
- d) Extra oral tracing and securing centric and protrusive/lateral. - 15 marks
- e) Transfer in on articulator. - 5 marks
- f) Selection of teeth - 5 marks
- g) Arrangement of teeth - 10 marks
- h) Waxed up denture trial - 10 marks
- I. 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 - 35 Marks

- a. Case discussion and selection of patients for F.P.D. - 5 marks
- b. Abutment preparation isolation and fluid control - 15 marks
- c. Gingival retraction and impressions - 10 marks
- d. Cementation of provisional restoration - 5 marks

4. Removable Partial Denture - 25 Marks

- a. Surveying and designing of partial dentate cast. - 10 marks
- b. Discussion on components and material selection - 15 marks including occlusal scheme.

5. Implant supported Prosthesis (2nd Stage protocol) - 30 marks

- a. Case discussion including treatment planning and selection of patient for ISP - 10 marks
- b. Second stage preparation, abutment selection, placement, evaluation - 10 marks
- c. Implant impression & making of cast - 10 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 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.

LIST OF TEXT BOOKS IN PROSTHODONTICS

Dental Materials:

1. Dental materials and manipulation - Craig
2. Phillips Science of dental materials – Skinner – 9th edition
3. Applied dental materials - Mc Cabe
4. Dental material science – P K Basu
5. Dental materials and their uses – O'brien
6. Materials in dentistry – Ferracane
7. The science and art of dental ceramics- John W. McLean
8. Science of Dental Materials Clinical Applications: V Shama Bhat

Complete Dentures:

1. Essentials of Complete Denture Prosthodontics – Second edition -Sheldon Winkler
2. Prosthodontic treatment for edentulous patients – twelfth edition – Zarb Bolender
3. Complete Denture Prosthodontics – John J Sharry
4. Dental Lab Procedures – Complete Dentures – Volume I – Rudd and Morrow
5. Complete Prosthodontics – Problems, Diagnosis and Management – Alan A Grant, J RHeath and J Fraser McCord
6. Syllabus of complete denture –Heartwell-3ed
7. Complete dentures - Swenson 4ed
8. Dental prosthesis – complete dentures- Sears
9. Principles of denture prosthesis – Wlfred Fish
10. The complete denture clinical pathway – Mac Entee
11. Removable complete dentures – Phillips
12. Clinical Dental Prosthesis-Fenn
13. The neutral zone in complete denture :Principles and technique: Victor Beresin
14. Esthetic in Complete denture- Dr. E.G.R. Solomon

Removable Partial Prosthodontics

1. McCracken's Removable partial Prosthodontics – 11th Edition
2. Clinical Removable partial Prosthodontics – Stewart , Rudd, Kuebker – third edition
3. Dental Lab Procedures – Removable Partial Dentures – Volume II – Rudd and Morrow
4. Advanced Removable partial dentures – James S Brudvik
5. Partial Dentures – John Osborne
6. Handbook on cast partial dentures
7. Removable denture construction –Bates
8. RPD - Davenport
9. Removable denture Prosthodontics – Grant
10. Essentials of removable partial denture prosthesis – O C Applegate
11. Partial Removable Prosthodontics- Kratochvil

Fixed Partial Prosthodontics

1. Fundamentals of fixed Prosthodontics - 3rd edition – Schillingburg
2. Fundamental of tooth Preparation- Schillingburg
3. Contemporary fixed Prosthodontics – 4th edition - Rosensteel
4. Tillman's – theory and practice of fixed prosthodontics – 8th edition
5. Dental Lab Procedures – Fixed Partial Dentures – Volume III – Rudd and Morrow
6. Johnstons Modern Practice In Fixed Prosthodontics-4th edition- Roland W Dykema
7. Introduction to Metal Ceramic technology- Petric Naylor
8. Fixed Bridge Prosthetics – D.H. Roberts
9. Planning and making Crowns And Bridges- Bernard Smith

Implantology

1. Carl Misch – Contemporary Implant Dentistry – Third edition
2. Babbush – Implant dentistry
3. Tissue integrated prosthesis – Branemark 4.Dental Implant Prosthetics Carl-E Misch 5.Clinical Implantology- Ajay Vikram Singh
6. Implant Prosthodontics – M.Fagan

Esthetic dentistry

1. Esthetic in dentistry- Ronald E Goldstein
2. Rufenach – Book on Esthetic dentistry
3. Ratnadeep Patil – Textbook on Esthetic dentistry
4. Esthetic dentistry and ceramic restorations – Touati
5. the science and art of porcelain laminates and veneers- Galip Gurel

Maxillofacial Prosthetics

1. Thomas D Taylor – Clinical Maxillofacial Prosthetics
2. Beumer – Maxillofacial Rehabilitation –Prosthodontic and Surgical Considerations
3. Chalian - Maxillofacial prosthesis
4. Maxillofacial prosthetics – Arthur O Rahn
5. Prosthetic Rehabilitation – Thomas Keith

Occlusion

1. Management of TMD and Occlusion – Okeson- 6th Edition
2. Evaluation, diagnosis and treatment of occlusal problems – 2nd edition Dawson

3. Occlusion – 3rd Edition – Ash and Ramfjord
4. Oral and maxillofacial surgery – TMD - Raymond J Fones
5. A clinical approach to TM disorder –J M Gray
6. Occlusion – Davis and Gray
7. Occlusal Rehabilitation-Victor Luca
8. Oral rehabilitation,clinical determination of occlusion -Hobo

Miscellaneous:

1. Textbook of Prosthodontics - V Rangarajan, T V Padmanabhan. 2.Overdenture Made Easy – Harold Priskel
3. Evidence based medicine – Sackett
4. Restorative dentistry – Jacobsen
5. Planning a thesis – some strategy and tactics – Thomas A hill
6. Medical education
7. Biomechanics in clinical dentistry – Caputo
8. Periodontal and prosthetic management of advanced cases - Rosenberg

LIST OF TEXT JOURNALS IN PROSTHODONTICS

1. British Dental journal
2. Journal of American Dental Association
3. Journal of Prosthetic Dentistry
4. Dental Materials Journal
5. Journal of Prosthodontics
6. Journal of Indian Prosthodontic Society
7. European Journal of Prosthodontics and Restorative Dentistry
8. European Journal of Prosthodontics
9. International Journal of Prosthodontics
10. Journal of Advanced Prosthodontics
11. Journal of Prosthodontic Research
12. Journal of Dentistry
13. International Journal of Oral and maxillofacial Implants
14. Journal of Dental Research
15. Journal of oral implantology
16. International Journal of Implant Dentistry
17. Australian Dental Journal
18. Journal of Dental Education
19. Journal of Adhesive Dentistry
20. European Journal of Esthetic Dentistry