

MD17PCB01 PROSTHODONTICS-I

AIM:

To train dental graduates so as to ensure higher competence in both general and special areas 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 Prosthetic 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 systemic medical science, knowledge in general and particularly 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, behaviour 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 skill in making appropriate decisions regarding prevention, treatment, after care and referral to deliver comprehensive care to patients.

KNOWLEDGE

The candidate should possess knowledge in applied basic and systematic medical sciences.

- ❖ On human anatomy, embryology, histology, applied in general and particularly 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 Principles and applications to Dental material science.
- ❖ Ability to diagnose and plan treatment for patients requiring a Prosthodontic therapy.
- ❖ Ability to read and interpret a radiograph and other investigations for the purpose of diagnosis and treatment plan.

- ❖ 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 esthetic, and biomaterials. Craniofacial disorders, problem of psychogenic origin.
 - ❖ Age change and Prosthodontic Therapy for the aged.
 - ❖ Ability to diagnose failed restoration and provide Prosthodontic therapy and after care.
 - ❖ Should have essential knowledge on ethics, laws and jurisprudence and forensic odontology in Prosthodontics.
 - ❖ General health conditions and emergency as related to prosthodontics treatment.
 - ❖ Identify social, cultural, economic, environmental, educational and emotional determinants of the patient and consider them in planning the treatment.
 - ❖ Identify cases, which are out side 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.
 - ❖ To have acquired adequate knowledge and understanding of applied basic and systematic medical science Knowledge in general and particular to head and neck.
 - ❖ Should attend continuing education programmes, seminars and conferences related to prosthodontics, 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 in both basic and clinical, with the aim of publishing his/her work and presenting his/her work at various scientific forum.
 - ❖ Should have essential knowledge of personal hygiene, infection control, prevention of cross infection and safe disposal of waste, keeping in view the risk of transmission of Hepatitis & HIV.
 - ❖ Should have an ability to plan establish Prosthodontic clinic/hospital teaching department and practice management.
 - ❖ Should have a sound knowledge for the application of pharmacology, effects of drugs on oral tissue and systems of a body and for medically compromised patients.
 - ❖ The Postgraduates will be able to provide Prosthodontics therapy for patients with competence and working knowledge with understanding of applied medical behavioral and clinical science that are beyond the treatment skills of the general BDS graduate and MDS graduate of other specialities to demonstrate, evaluative and judgement skills in making appropriate decisions regarding prevention, treatment after care and referral to deliver comprehensive care to patients.

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 lost functions of stomatognathic system namely mastication, speech, appearance and psychological comforts. By understanding biological, biomedical, bioengineering principles and systemic condition of the patient to provide a quality health care of the craniofacial region.
- ❖ The candidate should be able to interact with other speciality including 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 leveln of knowledge, training and practice skills currently available in their specially 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, maxillofacial, TMJ, and esthetics Prosthodontics.
- ❖ Laboratory technique management based on skills and knowledge of Dental Materials and dental equipment and instruments management.
- ❖ To understand demographic disribution and target diseases of Cranio mandibuiar region related to Prosthodontics 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 interset.
- ❖ Respect patient's rights and privileges including patients right to information and right to seek second opinion.

COMMUNICATION ABILITIES

- ❖ Develop communication skills, in particular, to explain treatment option available in management.
- ❖ Provide leadership and get the best out of his group in a congenial working atmosphere.
- ❖ Should be able to communicate in simple understandable language with the patient and explain the principles of prosthodontics to the patients. 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, etc. to render the best possible treatment.

COURSE CONTENTS

The candidates shall undergo training for 3 academic years with satisfactory attendance of 80% for each year.

- ❖ The course includes epidemiology and demographic studies, research and teaching skills.
- ❖ Ability to prevent, diagnose and treat with after care for all patients for control of diseases and/or treatment related syndromes, with patient satisfaction for restoring functions of Stomatognathic system by Prosthodontic therapy.

The program outline 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, Prosthodontics including Crown and Bridge Implantology and Material Science.

APPLIED BASIC SCIENCES:

- ❖ A thorough knowledge on the applied aspects of Anatomy, Embryology, Histology particularly to head and neck, Physiology, Biochemistry, Pathology, Microbiology, Virology.
- ❖ Pharmacology, Health and systematic diseases principles in surgery medicine and Anesthesia, Nutrition, Behavioral sciences, age changes, genetics, Dental Materials

Sciences, congenital defects and Syndromes and Anthropology, Biomaterial Sciences, Bio - engineering and Bio - medical and Research Methodology as related to Master 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 back 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. Brief 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 of mastication, Deglutition, speech, respiration, and circulation, teeth eruption, morphology, occlusion and function, Anatomy of TMJ, its movements and myofascial 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, pulp 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, Endocranial 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 characteristics of major groups of developmental defects of the orofacial structures.

CELL BIOLOGY:

Detailed study of the structure and function of the mammalian cell with special emphasis on ultra structural features and molecular aspects. Detailed consideration of intercellular junctions. Cell cycle and division, cell – to cell and cell – extra cellular matrix interactions.

APPLIED PHYSIOLOGY AND NUTRITION:

Introduction, Mastication, deglutition, digestion and assimilation, Homeostasis, fluid and electrolyte balance. Blood composition, Volume, function, blood groups and hemorrhage, Blood transfusion, circulation, Heart, Pulse, Blood pressure, capillary and lymphatic circulation, shock, respiration, control, anoxia, hypoxia, asphyxia, artificial respiration. Endocrine glands in particular reference to pituitary, parathyroid and thyroid glands and sex hormones. Role of calcium and Vit D in growth and development of teeth, bone and jaws. Role of Vit. A, C and B complex in oral mucosal and periodontal health. Physiology and function of the masticatory system. Speech mechanism, mastication, swallowing and deglutition mechanism, salivary glands and Saliva.

ENDOCRINES:

General Principles of endocrine activity and disorders relating to pituitary, thyroid, pancreas, parathyroid, adrenals, gonads, including pregnancy and lactation. Physiology of saliva, urine formation, normal and abnormal constituents, Physiology of pain sympathetic and parasympathetic nervous system. Neuromuscular coordination of the stomatognathic system.

APPLIED NUTRITION:

General principles, balanced diet, effect of dietary deficiencies and starvation, Diet, digestion, absorption, transportation and utilization, diet for elderly patients.

APPLIED BIOCHEMISTRY:

General principles governing the various biological activities of the body, such as osmotic pressure, electrolytic dissociation, oxidation – reduction, etc. general composition of the body, intermediary metabolism, Carbohydrates, proteins, liquids and their metabolism, Enzymes, Vitamins, and minerals, Hormones, Blood and other body fluids, Metabolism of inorganic elements, Detoxication in the body, Anti metabolites.

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 asesthetics 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 histopathology 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 of oral cavity, Dental caries, diseses 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. Disease 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 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, somatic damage, genetic damage, protection from primary and secondary radiation, Principles of X – ray production, Applied Principles of radio therapy and after care.

ROENTGENOGRAPHIC TECHNIQUES:

Intra oral: Extra oral roentgenography, Methods of localization, digital radiology and ultra sound, Normal anatomical landmarks of teeth and jaws in radiograms, temporomandibular joint radiograms, neck radiograms.

APPLIED MEDICINE

Systemic diseases and its influence on general health and oral and dental health. Medical emergencies in the dental offices – Prevention, preparation, medico legal consideration, unconsciousness, respiratory distress, altered consciousness, seizures, drug related emergencies, chest pain, cardiac arrest, premedication, and management of ambulatory patients, resuscitation, applied psychiatry, child and senior citizens. Assessment of case, premedication, inhibition, monitoring, extubation, complications 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 (INCLUDING METALLURGY)

- ❖ 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 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 patients 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, behavioural, 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 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.

I. REMOVABLE PROSTHODONTICS AND IMPLANTS

- a. Prosthodontic treatment for completely edentulous patients – Complete denture, immediate complete denture, single complete denture, tooth supported complete denture, Implant supported Prosthesis for completely edentulous patient.
- b. Prosthodontic treatment for partially edentulous patients:- Clasp – retained partial dentures, intra coronal and extra coronal precision attachments retained partial dentures, maxillofacial prosthesis.

Prosthodontic treatment for edentulous patients - Complete Denture and Implant supported Prosthesis

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 joint 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 –behavioural modalities.
- (e) Nutrition Care for the denture wearing patient – Impact of dental status on 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 diseases, oral malignancies, climacteric, use of drugs, mental health – mental attitude, psychological changes, adaptability, geriatric changes – physiologic, pathological, and intra oral changes. Intra oral health – mucous 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, 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 ridge relations:- non surgical methods – rest for the denture supporting tissues, occlusal correction of the old prosthesis, good nutrition, conditioning of the patients musculature, surgical methods - Correction of conditions, preclude optimal prosthetic function – hyperplastic ridge – epulis fissuratum and papillomatosis, frenular attachments and pendulous maxillary tuberosities, ridge augmentation, maxillary and Mandibular oral implant, correction 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 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 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 selections 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 Denture: Single Mandibular denture to oppose natural maxillary teeth, single complete maxillary denture to oppose nature 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 is important, what are the elements of effective communications, special significance of doctor / patient communication, doctors behavior, The iatrosedative (doctors 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) Fabrication 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 and final impression. Developing an analogue / substitute for the maxillary denture bearing area – anatomy of supporting structures – mucous membrane, hard palate, residual ridge, shape of the supporting structure and factors that influence the form and size of the supporting bones, incisive foramen, maxillary tuberosity, sharp spiny process, torus palatinus, Anatomy of peripheral or limiting structures, labial vestibule, Buccal vestibule, vibrating line, preliminary and final impressions, impression making, custom tray and refining the custom tray, preparing the tray to secure the final impression, making the final impression, boxing impression and making the casts.
Developing an analogue / substitute for the Mandibular denture bearing area – Mandible – anatomy of supporting structure, crest of the residual ridge, the Buccal shelf, shape of supporting structure, mylohyoid ridge, mental foramen, genial tubercles, torus mandibularis, Anatomy of peripheral or limiting structure – labial vestibule, Buccal vestibule, lingual

border, mylohyoid muscle, retromylohyoid fossa, sublingual gland region, alveolingual sulcus, Mandibular impressions – preliminary impressions, custom tray, refining, preparing the tray, final impressions.

- (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 trial 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 envelop 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 methods, Orientation / sagittal relation records, Arbitrary / Hinge axis and face bow record, significance and requirement, principles and biological considerations and securing 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 role of teeth and other oral structures – bilabial sounds, labiodental sounds, linguodental sounds, linguoalveolar sound, articulator 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 grinding, 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, 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 – Period 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 complications.

- ❖ Introduction and Historical Review.
- ❖ Biological, clinical and surgical aspects of oral implants.
- ❖ Diagnosis and treatment planning.
- ❖ Radiological interpretation for selection of fixtures.
- ❖ Splints for guidance for surgical placement of fixtures.
- ❖ Intra oral plastic surgery.
- ❖ Guided bone and Tissue regeneration consideration for implants fixture.
- ❖ Implants supported prosthesis for complete edentulism and partial edentulism.
- ❖ Occlusion for implant support prosthesis.
- ❖ Peri implant tissue and Management.
- ❖ Peri – implant and management.
- ❖ Maintenance and after care.
- ❖ Management of failed restoration.
- ❖ Work authorization for implant supported prosthesis – definitive instructions, legal aspects, delineation of responsibility.

Prosthodontics treatment for edentulous patients – Removable partial

Prosthodontics-

- a. Scope, definition and terminology, Classification of partially edentulous arches – requirements of 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 – form of the Occlusal rest and rest seat, interproximal Occlusal rest seats, internal Occlusal rests, possible movements of partial dentures, support for rests, lingual rests on canines and incisor teeth, incisal rest and rest seat.

Direct retainer – Internal attachment, extracoronal direct retainer, relative uniformity of retention, flexibility of clasp arms, stabilizing – reciprocal clasp are, criteria for selecting a given clasp design, the basic principles of clasp design, circumferential clasp, bar clasp, combination clasp and other type or 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.

Principle of removable partial denture design – bio mechanic considerations, and the factors that influence after mouth preparations – Occlusal relationship of remaining teeth, 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 surveying, 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 blockout, shaped blockout, arbitrary blockout and relief.

- g. Diagnosis and treatment planning – infection control and cross infection barriers – clinical and laboratory and hospital waste management, Objectives of prosthodontic treatment, Records, systemic evaluation, Oral examination, preparation of diagnostic cast, interpretations 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 denture, 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 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, sequence of abutment preparations on sound enamel or existing restorations, conservative 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 extension base.
- l. Laboratory Procedures – Duplicating stone cast, Waxing the partial denture frame work, 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.

II. 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 – clinical 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 defects 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, 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, Material and laboratory procedures for maxillofacial prosthesis.

III– OCCLUSION

Evaluation, Diagnosis and Treatment of Occlusal Problems

Scope, definition, terminology, optimum oral health, anatomic harmony, functional harmony, occlusal stability, causes of deterioration of dental and oral

health, Anatomical, physiological, neuro – muscular, psychological, considerations of teeth, muscles of mastication, temporomandibular joint, Intra oral and extra oral and facial musculatures, the functions of Cranio mandibular system.

Occlusal therapy, the stomatognathic system, centric relation, vertical dimension, the neutral zone, the occlusal plane, differential diagnosis of temporomandibular disorders, understanding and diagnosing intra articular problems, relating treatment to diagnosis of internal derangements of TMJ, Occlusal splints Selecting instruments for occlusal diagnosis and treatment, mounting casts, Pankey, Mann

– Schuyler philosophy of complete occlusal rehabilitation, long centric, anterior guidance, restoring lower anterior teeth, restoring upper anterior teeth, determining the type of posterior occlusal contours, methods for determining the plane of occlusion, restoring lower posterior teeth, restoring upper posterior teeth, functionally generated path techniques for recording border movements intra orally, occlusal equilibration, Bruxism, Procedural steps in restoring occlusions, requirements for occlusal stability, solving occlusal problem through programmed treatment planning, splinting, solving – occlusal wear problems, deep overbite problems, anterior overjet problems, anterior open bite problems. Treating – end to end occlusion, splayed anterior teeth, cross bite patient, Crowded, irregular, or interlocking anterior bite, using Cephalometric for occlusal analysis, solving severe arch malrelationship problems, transcranial radiography, postoperative care of occlusal therapy.

IV – 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, 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, removal carious, 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, periodontitis. Microbiological aspects of periodontal diseases, marginal lesion, occlusal trauma, periodontal pockets attached gingiva, interdental papilla, gingival embrasures, gingival/periodontal prosthesis, radiographic interpretations of Periodontia, intraoral, periodontal splinting – Fixed prosthodontics with periodontially compromised dentitions, placement of margin of restorations.
- ❖ **Biomechanical principle of tooth preparations** – Individual tooth preparations – Complete metal Crowns – P.F.C., All porcelain – Cerestore crowns, dicor crowns, incerem etc. porcelain jacket crowns partial $\frac{3}{4}$, functional half radicular $\frac{7}{8}$, telescopic, pin – ledge, laminates, inlays, onlays and preparations for restoration of teeth – amalgam, glass ionomer and composite resins, Resin Bond retainers, Gingival marginal preparationsn - Design, material selection, and biological and mechanical considerations – Intracoronar retainer and precision attachments - custom made and ready made.
- ❖ **Isolation and fluid control** – Rubber dam applications, tissue dilation – soft tissue management for cast restoration, impression materials and techniques, provisional restoration, interocclusal records, laboratory support for fixed Prosthodontics, Occlusion, Occlusal equilibration, articulators, recording and transferring of occlusal relations, cementing of restorations.
- ❖ **Resins, Gold and gold alloys, glass Ionomer, restorations.**
- ❖ **Restorations of endodontically treated teeth, Stomatognathic Dysfunction and management.**
- ❖ **Management of failed restorations.**

Osseo integrated, Implant supported fixed Prosthodontics – Osseo integrated implant supported and tooth supported fixed Prosthodontics.

V. TMJ – Temporomandibular joint dysfunction – Scope, definitions, and terminology.

Tempromandibular joint and its function, Orofacial pain, and pain from the temporomandibular joint region, temporomandibular joint dysfunction, temporomandibular joint sounds, temporomandibular joint disorders.

Anatomy related, trauma, disc displacement, Osteoarthritis/Osteoarthritis, Hyper mobility and dislocation, infectious arthritis, inflammatory diseases, Eagle's syndrome (Styloid - stylohyoid syndrome), Synovial chondromatosis, Osteochondrosis disease, Osteonecrosis, Nerve entrapment process, Growth changes, Tumors, Radiographic imaging.

- ❖ **Etiology, diagnosis and carnio mandibular pain**, differential diagnosis and management of orofacial pain – pain from teeth, pulp, dentin, muscle pain, TMJ pain – psychologic, 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, 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.

VI.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 materials 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, shape, color, embrasures, contact point.

TEACHING AND LEARNING ACTIVITIES:

All the candidates registered for MDS course shall pursue the course for a period of three years as full – time students. During this period each student shall take part actively in learning and teaching activities designed by the Institution/ University. The following teaching and learning activities in each speciality.

Prosthodontic treatment should be practiced by developing skills by treating various and more number of patients to establish skill for diagnosis and treatment and after care with bio – mechanical, biological, bio – esthetics, Bio – phonetics

and all treatment should be carrying 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 department 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 meeting shall be held at least once a week. All trainees are expected to participate actively and enter relevant details in logbook. Each 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 topic 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, endodontic and concerned clinical department. The trainees should be encouraged to present the clinical details, radiological and histo – pathological interpretations and participation in the discussions.
8. **Interdepartmental Meeting:** To bring in more integration among various specialities' there shall be interdepartmental meeting chaired by the dean with all heads of postgraduate departments atleast once a month.
9. **Rural oriented prosthodontics 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. **Evaluations skills:** All the trainees shall be encouraged to enhance their 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/workshop/advance courses but also to present atleast two paper at state/national speciality meeting during their training period.
- 14. Rotation and posting in other department:** To bring in more integration between the speciality and allied fields each postgraduate department shall workout a programme to rotate the trainees in related disciplines and Craniofacial and maxillofacial ward.
- 15. Dissertation:** Trainees shall prepare a disseration bases on the clinical or laboratory experimental work or any other study conducted by them under the supervision of the post graduate guide.

I - YEAR M.D.S.

- ❖ Theoretical exposure of all applied sciences of study.
- ❖ Clinical and non - clinical exercises involved in Prosthodontic therapy for assessment and acquiring higher competence.
- ❖ Commencement of Library Assignment within six months.
- ❖ Short epidemiological study relevant to Prosthodontics.
- ❖ Acquaintance with books, journals and referrals. To acquire knowledge of 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 Materials Science – Biological and biomechanical, bio – esthetics knowledge of using in laboratory and clinics including testing methods for dental materials.
- ❖ Participation and presentation in seminars, didactics lectures.
- ❖ Evaluation – Internal Assessment examinations on Applied subjects.

II YEAR M.D.S.

- ❖ Acquire confidence in obtaining various phases and techniques for providing Prosthodontic therapy.
- ❖ Acquiring confidence by clinical practice with sufficient numbers of patient requiring tooth and tooth surface restorations.

- ❖ Fabrication of adequate number of complete denture prosthesis following, higher clinical approach by utilizing 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 number of R.P.D. covering all partially edentulous situation.
- ❖ Adequate number of Crowns, Inlays, laminates F.P.D. covering all clinical situation.
- ❖ Selection of cases and principles in treatment of partial or complete edentulous patients, by implant supported prosthesis.
- ❖ Treating single edentulous arch situation by implant supported prosthesis.
- ❖ Diagnosis and treatment planning for implant prosthesis.
- ❖ 1st stage and 2nd stage implant surgery.
- ❖ Understanding the maxillofacial Prosthodontics.
- ❖ Treating craniofacial defects.
- ❖ Management of orofacial defects.
- ❖ Prosthetic management of TMJ syndrome.
- ❖ Occlusal rehabilitation.
- ❖ Management of failed restorations.
- ❖ Prosthodontic Management of patient with psychogenic disorder.
- ❖ Practice of child and geriatric prosthodontics.
- ❖ Participation and presentation in seminars, didactics lectures.
- ❖ Evaluation – Internal Assessment examinations.
- ❖ Complete and submit library dissertation by the end of IInd year M.D.S.

III YEAR M.D.S.

- ❖ Clinical and laboratory practice continues from IInd year.
- ❖ Oclusal 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 – Rehabilitaion 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 large number and variety of patients to master the prosthodontics therapy. This includes the practice

management, examinations, treatment planning, communication with patients, clinical and laboratory techniques materials and instrumentation requiring 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. ,F.P.D. Immediate dentures, over dentures, implant supported prosthesis, maxillofacial and body prosthesis, occlusal rehabilitation.

- ❖ Prosthetic management of TMJ syndrome.
- ❖ Management of failed restorations.
- ❖ 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.
 - Partial crowns – 3/4th, 4/5th, 7/8th, 1/2 crowns.
 - Pin – ledge.
 - Radicular crowns.
 - Full crowns.

3. Tooth replacements

	PARTIAL	COMPLETE
• Tooth supported	Fixed partial denture	Overdenture
• Tissue supported	Interim partial denture Intermediate partial denture	Complete denture Immediate denture Immediate complete denture
• Tooth and tissue Overdenture Supported attachment	Cast partial denture	Precision
• Implant supported	Cement retained Screw retained attachment Clip attachment	Bar attachment Ball
• Tooth and implant Supported retained	Screw retained Cement	
• Root supported	Dowel and core Pin retained	Overdenture

- 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 |] | |
| b. Pierre Robin Syndrome |] | |
| c. Ectodermal dysplasia |] | Cast partial denture |
| d. Hemifacial microsomia |] | implant supported
prosthesis |
| e. Anodontia |] | complete dentures |
| f. Oligodontia |] | fixed partial dentures. |
| g. Malformed teeth. |] | |

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] cast partial denture
- f. Maxillectomy] implant supported dentures
- g. Lip and cheek support prosthesis] complete dentures
- 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

- 5. T.M.J.and Occlusal disturbances**
 - a. Occlusal equilibration
 - b. Splints
 - Diagnostic
 - Repositioners/Deprogrammers
 - c. Anterior bite plate
 - d. Posterior bite plate
 - e. Bite raising appliances
 - f. Occlusal rehabilitation
- 6. Esthetic / Smile designing**
 - a. Laminates/Veneers
 - b. Tooth contouring (peg laterals, malformed teeth)
 - c. Tooth replacements
 - d. Team management
- 7. Psychological therapy**
 - a. Questionnaires
 - b. Charts, papers, photographs
 - c. Models
 - d. Case reports
 - e. Patient counseling
 - f. Behaviour modifications
 - g. Referrals
- 8. Geriatric Prosthodontics**
 - a. Prosthodontics for the elderly
 - b. Behavioral and psychological counselling
 - c. Removable Prosthodontics
 - d. Fixed Prosthodontics
 - e. Implant supported Prosthodontics
 - f. Maxillofacial Prosthodontics
 - g. Psychological and physiological considerations
- 9. Preventive measures**
 - a. Diet and nutrition modulation and counseling
 - b. Referrals

THE BENCH WORK SHOULD BE COMPLETE BEFORE THE CLINICAL WORK STARTS DURING THE FIRST YEAR OF THE M.D.S COURSE

I. Complete dentures

1. Arrangements in adjustable articulator for
 - ❖ Class I
 - ❖ Class II

- ❖ Class III

2. Various face bow transfer to adjustable articulators
3. Processing of characterized anatomical denture

II. Removable partial denture

1. Design for Kennedy's Classification (Survey, block out and design)
 - a. Class I
 - b. Class II
 - c. Class III
 - d. Class IV
2. Designing of various components of RPD
3. Wax pattern on refractory cast
 - a. Class I
 - b. Class II
 - c. Class III
 - d. Class IV
4. Casting and finishing of metal frameworks
5. Acrylisation on metal frameworks
 - for Class I
 - Class III with modification

III. Fixed Partial Denture

1. Preparation in ivory teeth/natural teeth
 - ❖ FVC for metal
 - ❖ FVC for ceramic
 - ❖ Porcelain jacket crown
 - ❖ Acrylic jacket crown
 - ❖ PFM crown
 - ❖ 3/4th (canine, premolar and central)
 - ❖ 7/8th posterior
 - ❖ Proximal half crown
 - ❖ Inlay – Class I,II,V
 - ❖ onlay – Pin ledged, pinhole
 - ❖ Laminates
2. Preparation of different die system
3. Fabrication of wax pattern by drop wax build up technique
 - ❖ Wax in increment 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
 - ❖ All ceramic crowns with characterisation
 - ❖ Metal ceramic crowns with characterisation
 - ❖ Full metal crown
 - ❖ Precious metal crown
 - ❖ Post and core
 7. Laminates
 - ❖ Composites with characterisation
 - ❖ Ceramic with characterisation
 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. Maxillectomy
8. Hemimandibulectomy

9. Finger prosthesis
10. Guiding flange
11. Obturator

V. Implant supported prosthesis

1. Step by step procedures – laboratory phase

VI. Other exercises

1. TMJ Splints – stabilization appliances, maxillary and Mandibular repositioning appliances
2. Anterior disclusion appliances
3. Chrome cobalt and acrylic resin stabilization appliances
4. Modification in accommodation in irregularities in dentures
5. Occlusal splint
6. Periodontal splint
7. Precision attachments – custom made
8. Over denture coping
9. Full mouth rehabilitation (by drop wax technique, ceramic build up)
10. TMJ appliances – stabilization appliances

ESSENTIAL SKILLS:

*Key

O – Washes up and observes

A – Assists a senior

PA - Performs procedure under the direct supervision of a specialist PI -

Performs independently

PROCEDURE	CATEGORY			
	O	A	PA	PI
Tooth and tooth surface restoration Composites – fillings, laminates, inlay, onlay	2	2	2	10
Ceramics – laminates, inlays, onlays	2	2	2	10
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
3/4 th crowns (premolars, canines and centrals)	1	-	-	5
7/8 th posterior crown	1	-	-	5
Proximal half crown	1	-	-	5
Pinledge and pinhole crowns	1	-	-	5
Telescopic crowns	1	-	-	5
Intraradicular crowns (central, lateral, canine, premolar, and molar)	1	-	-	5
Crown as implant supported prosthesis	1	-	1	5
FIXED PARTIAL DENTURES				
Cast porcelain (3 unit)	1	-	-	5
Cast metal – precious and non precious (3 unit posterior)	1	-	-	5
Porcelain fused metal (anterior and posterior)	1	1	1	10
Multiple abutment – maxillary and mandibular full arch	1	1	1	5
Incorporation of custom made and ready made precision joint or attachments	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 for acquired and congenital defects – maxillofacial prosthetics	1	-	-	5
Implant supported prosthesis	1	-	1	1
Implant – tooth supported prosthesis	1	-	1	1
REMOVABLE PARTIAL DENTURE				
Provisional partial denture prosthesis	1	1	1	10
Cast removable partial denture (for Kennedy's Applegate classification with modification)	1	1	1	6
Removable bridge with precision attachment and telescopic crowns for anterior and	1	1	2	4

posterior				
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 denture 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
Maxillectomy	-	-	1	2
Hemimandibulectomy	-	-	1	2
Cranioplasty	-	-	1	1
Finger/hand,foot	-	-	1	2
Body prosthesis	-	-	1	1
Management of burns, scars	-	-	-	1
TMJ SYNDROME MANAGEMENT				
Splints – periodontal, teeth,jaws	-	-	1	4
TMJ supportive and treatment prosthesis	-	-	1	1
Stabilization appliances for maxilla and mandible with freedom to move from IP to	-	-	-	1

CRCP				
In IP without the freedom to move to CRCP	-	-	-	1
Repositioning appliances, anterior disclusion	-	-	-	1

Chrome cobalt and acrylic resin stabilization appliances for modification to accommodate for the irregularities in the dentition.	-	-	-	2
Occlusal adjustment and occlusal equilibrium	-	-	1	4
FULL MOUTH REHABILITATION				
Full mouth rehabilitation – restoration of esthetics and functions of stomatognathic system	-	-	1	4
INTER – DISCIPLINARY TREATMENT MODALITIES				
Inter – disciplinary management – restoration of Oro croniofacial 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

SCHEME OF EXAMINATION:

Theory : 400 Marks

Written examination shall consist of four question paper each of three hours duration. Total Mark for each paper will be 100. Paper I, II and III shall consist of two long questions carrying 20marks each and 6 short essay questions each carrying 10marks. Paper IV will be on Essay Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

Paper I : Applied Basic Science: Applied Anatomy, embryology, growth and development Genetics, Immunology, anthropology, Physiology, nutrition &

Biochemistry, Pathology & Microbiology, Virology, Applied Pharmacology,
Research Methodology and

bio statistics. Applied Dental anatomy & histology, Oral pathology & Oral Microbiology, Adult and geriatric psychology. Applied dental materials.

Paper II : Removeable Prosthodontics and Implant supported prosthesis (implantology), Geriatric dentistry and Cranio facial prosthodontics.

Paper III : Fixed Prosthodontics, occlusion, TMJ and esthetics.

Paper IV : Essay.

*The topics assigned to the different papers are generally evaluated under those sections. However a strict division of the subject may not be possible and some overlapping of topics is inevitable students should be prepared to answer overlapping topics.

B. 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 3 years training period – 25 Marks

- | | |
|--|-----------|
| a. C.D | - 1 mark |
| b. R.P.D. | - 2 marks |
| c. F.P.D. including single tooth and surface restoration | - 2 marks |
| d. I.S.P. | - 5 marks |
| e. Occlusal rehabilitation | - 5 marks |
| f. T.M.J. | - 5 marks |
| g. Maxillofacial Prosthesis | - 5 marks |

2. Present actual treated patients C.D. Prosthesis and Insertion – 90 Marks

- | | |
|---|------------|
| 1) Discussion on treatment plan and patient review | - 10 marks |
| 2) Tentative jaw relation records | - 5 marks |
| 3) Face Bow – transfer | - 5 marks |
| 4) Transferring it on articulators | - 5 marks |
| 5) Extra oral tracing and securing centric and marks Protrusive/lateral, record | - 25 |
| 6) Transfer in on articulator | - 5 marks |
| 7) Selection of teeth | - 5 marks |
| 8) Arrangement of teeth | - 15 marks |
| 9) Waxedup denture trial | - 10 marks |
| 10)Fit, insertion and instruction of previously processed | - 5 marks |

Characterised, anatomic complete denture

prosthesis All steps will include chairside, lab and viva

voce

3. Fixed Partial Denture – 50 Marks

- a. Case discussion and selection of patients for F.P.D. - 5 marks
- b. Abutment preparation isolation and fluid control - 25 marks
- c. Gingival retraction and impressions - 10 marks
- d. Cementation of provisional restoration - 10 marks

4. Removable Partial Denture -35 Marks

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

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.

MD17PCB02 PROSTHODONTICS-II

AIM:

To train dental graduates so as to ensure higher competence in both general and special areas 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 Prosthetic 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 systemic medical science, knowledge in general and particularly 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, behaviour 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 skill in making appropriate decisions regarding prevention, treatment, after care and referral to deliver comprehensive care to patients.

KNOWLEDGE

The candidate should possess knowledge in applied basic and systematic medical sciences.

- ❖ On human anatomy, embryology, histology, applied in general and particularly 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 Principles and applications to Dental material science.
- ❖ Ability to diagnose and plan treatment for patients requiring a Prosthodontic therapy.
- ❖ Ability to read and interpret a radiograph and other investigations for the purpose of diagnosis and treatment plan.

- ❖ 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 esthetic, and biomaterials. Craniofacial disorders, problem of psychogenic origin.
 - ❖ Age change and Prosthodontic Therapy for the aged.
 - ❖ Ability to diagnose failed restoration and provide Prosthodontic therapy and after care.
 - ❖ Should have essential knowledge on ethics, laws and jurisprudence and forensic odontology in Prosthodontics.
 - ❖ General health conditions and emergency as related to prosthodontics treatment.
 - ❖ Identify social, cultural, economic, environmental, educational and emotional determinants of the patient and consider them in planning the treatment.
 - ❖ Identify cases, which are out side 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.
 - ❖ To have acquired adequate knowledge and understanding of applied basic and systematic medical science Knowledge in general and particular to head and neck.
 - ❖ Should attend continuing education programmes, seminars and conferences related to prosthodontics, 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 in both basic and clinical, with the aim of publishing his/her work and presenting his/her work at various scientific forum.
 - ❖ Should have essential knowledge of personal hygiene, infection control, prevention of cross infection and safe disposal of waste, keeping in view the risk of transmission of Hepatitis & HIV.
 - ❖ Should have an ability to plan establish Prosthodontic clinic/hospital teaching department and practice management.
 - ❖ Should have a sound knowledge for the application of pharmacology, effects of drugs on oral tissue and systems of a body and for medically compromised patients.
 - ❖ The Postgraduates will be able to provide Prosthodontics therapy for patients with competence and working knowledge with understanding of applied medical behavioral and clinical science that are beyond the treatment skills of the general BDS graduate and MDS graduate of other specialities to demonstrate, evaluative and judgement skills in making appropriate decisions regarding prevention, treatment after care and referral to deliver comprehensive care to patients.

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 lost functions of stomatognathic system namely mastication, speech, appearance and psychological comforts. By understanding biological, biomedical, bioengineering principles and systemic condition of the patient to provide a quality health care of the craniofacial region.
- ❖ The candidate should be able to interact with other speciality including 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 leveln of knowledge, training and practice skills currently available in their specially 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, maxillofacial, TMJ, and esthetics Prosthodontics.
- ❖ Laboratory technique management based on skills and knowledge of Dental Materials and dental equipment and instruments management.
- ❖ To understand demographic disribution and target diseases of Cranio mandibuiar region related to Prosthodontics 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 interset.
- ❖ Respect patient's rights and privileges including patients right to information and right to seek second opinion.

COMMUNICATION ABILITIES

- ❖ Develop communication skills, in particular, to explain treatment option available in management.
- ❖ Provide leadership and get the best out of his group in a congenial working atmosphere.
- ❖ Should be able to communicate in simple understandable language with the patient and explain the principles of prosthodontics to the patients. 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, etc. to render the best possible treatment.

COURSE CONTENTS

The candidates shall undergo training for 3 academic years with satisfactory attendance of 80% for each year.

- ❖ The course includes epidemiology and demographic studies, research and teaching skills.
- ❖ Ability to prevent, diagnose and treat with after care for all patients for control of diseases and/or treatment related syndromes, with patient satisfaction for restoring functions of Stomatognathic system by Prosthodontic therapy.

The program outline 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, Prosthodontics including Crown and Bridge Implantology and Material Science.

APPLIED BASIC SCIENCES:

- ❖ A thorough knowledge on the applied aspects of Anatomy, Embryology, Histology particularly to head and neck, Physiology, Biochemistry, Pathology, Microbiology, Virology.
- ❖ Pharmacology, Health and systematic diseases principles in surgery medicine and Anesthesia, Nutrition, Behavioral sciences, age changes, genetics, Dental Materials

Sciences, congenital defects and Syndromes and Anthropology, Biomaterial Sciences, Bio - engineering and Bio - medical and Research Methodology as related to Master 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 back 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. Brief 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 of mastication, Deglutition, speech, respiration, and circulation, teeth eruption, morphology, occlusion and function, Anatomy of TMJ, its movements and myofascial 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, pulp 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, Endocranial 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 characteristics of major groups of developmental defects of the orofacial structures.

CELL BIOLOGY:

Detailed study of the structure and function of the mammalian cell with special emphasis on ultra structural features and molecular aspects. Detailed consideration of intercellular junctions. Cell cycle and division, cell – to cell and cell – extra cellular matrix interactions.

APPLIED PHYSIOLOGY AND NUTRITION:

Introduction, Mastication, deglutition, digestion and assimilation, Homeostasis, fluid and electrolyte balance. Blood composition, Volume, function, blood groups and hemorrhage, Blood transfusion, circulation, Heart, Pulse, Blood pressure, capillary and lymphatic circulation, shock, respiration, control, anoxia, hypoxia, asphyxia, artificial respiration. Endocrine glands in particular reference to pituitary, parathyroid and thyroid glands and sex hormones. Role of calcium and Vit D in growth and development of teeth, bone and jaws. Role of Vit. A, C and B complex in oral mucosal and periodontal health. Physiology and function of the masticatory system. Speech mechanism, mastication, swallowing and deglutition mechanism, salivary glands and Saliva.

ENDOCRINES:

General Principles of endocrine activity and disorders relating to pituitary, thyroid, pancreas, parathyroid, adrenals, gonads, including pregnancy and lactation. Physiology of saliva, urine formation, normal and abnormal constituents, Physiology of pain sympathetic and parasympathetic nervous system. Neuromuscular coordination of the stomatognathic system.

APPLIED NUTRITION:

General principles, balanced diet, effect of dietary deficiencies and starvation, Diet, digestion, absorption, transportation and utilization, diet for elderly patients.

APPLIED BIOCHEMISTRY:

General principles governing the various biological activities of the body, such as osmotic pressure, electrolytic dissociation, oxidation – reduction, etc. general composition of the body, intermediary metabolism, Carbohydrates, proteins, liquids and their metabolism, Enzymes, Vitamins, and minerals, Hormones, Blood and other body fluids, Metabolism of inorganic elements, Detoxication in the body, Anti metabolites.

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 asesthetics 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 histopathology 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 of oral cavity, Dental caries, diseses 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. Disease 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 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, somatic damage, genetic damage, protection from primary and secondary radiation, Principles of X – ray production, Applied Principles of radio therapy and after care.

ROENTGENOGRAPHIC TECHNIQUES:

Intra oral: Extra oral roentgenography, Methods of localization, digital radiology and ultra sound, Normal anatomical landmarks of teeth and jaws in radiograms, temporomandibular joint radiograms, neck radiograms.

APPLIED MEDICINE

Systemic diseases and its influence on general health and oral and dental health. Medical emergencies in the dental offices – Prevention, preparation, medico legal consideration, unconsciousness, respiratory distress, altered consciousness, seizures, drug related emergencies, chest pain, cardiac arrest, premedication, and management of ambulatory patients, resuscitation, applied psychiatry, child and senior citizens. Assessment of case, premedication, inhibition, monitoring, extubation, complications 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 (INCLUDING METALLURGY)

- ❖ 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 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 patients 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, behavioural, 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 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.

I. REMOVABLE PROSTHODONTICS AND IMPLANTS

- a. Prosthodontic treatment for completely edentulous patients – Complete denture, immediate complete denture, single complete denture, tooth supported complete denture, Implant supported Prosthesis for completely edentulous patient.
- b. Prosthodontic treatment for partially edentulous patients:- Clasp – retained partial dentures, intra coronal and extra coronal precision attachments retained partial dentures, maxillofacial prosthesis.

Prosthodontic treatment for edentulous patients - Complete Denture and Implant supported Prosthesis

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 joint 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 –behavioural modalities.
- (e) Nutrition Care for the denture wearing patient – Impact of dental status on 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 diseases, oral malignancies, climacteric, use of drugs, mental health – mental attitude, psychological changes, adaptability, geriatric changes – physiologic, pathological, and intra oral changes. Intra oral health – mucous 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, 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 ridge relations:- non surgical methods – rest for the denture supporting tissues, occlusal correction of the old prosthesis, good nutrition, conditioning of the patients musculature, surgical methods - Correction of conditions, preclude optimal prosthetic function – hyperplastic ridge – epulis fissuratum and papillomatosis, frenular attachments and pendulous maxillary tuberosities, ridge augmentation, maxillary and Mandibular oral implant, correction 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 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 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 selections 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 Denture: Single Mandibular denture to oppose natural maxillary teeth, single complete maxillary denture to oppose nature 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 is important, what are the elements of effective communications, special significance of doctor / patient communication, doctors behavior, The iatrosedative (doctors 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) Fabrication 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 and final impression. Developing an analogue / substitute for the maxillary denture bearing area – anatomy of supporting structures – mucous membrane, hard palate, residual ridge, shape of the supporting structure and factors that influence the form and size of the supporting bones, incisive foramen, maxillary tuberosity, sharp spiny process, torus palatinus, Anatomy of peripheral or limiting structures, labial vestibule, Buccal vestibule, vibrating line, preliminary and final impressions, impression making, custom tray and refining the custom tray, preparing the tray to secure the final impression, making the final impression, boxing impression and making the casts.
Developing an analogue / substitute for the Mandibular denture bearing area – Mandible – anatomy of supporting structure, crest of the residual ridge, the Buccal shelf, shape of supporting structure, mylohyoid ridge, mental foramen, genial tubercles, torus mandibularis, Anatomy of peripheral or limiting structure – labial vestibule, Buccal vestibule, lingual

border, mylohyoid muscle, retromylohyoid fossa, sublingual gland region, alveolingual sulcus, Mandibular impressions – preliminary impressions, custom tray, refining, preparing the tray, final impressions.

- (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 trial 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 envelop 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 methods, Orientation / sagittal relation records, Arbitrary / Hinge axis and face bow record, significance and requirement, principles and biological considerations and securing 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 role of teeth and other oral structures – bilabial sounds, labiodental sounds, linguodental sounds, linguoalveolar sound, articulator 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 grinding, 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, 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 – Period 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 complications.

- ❖ Introduction and Historical Review.
- ❖ Biological, clinical and surgical aspects of oral implants.
- ❖ Diagnosis and treatment planning.
- ❖ Radiological interpretation for selection of fixtures.
- ❖ Splints for guidance for surgical placement of fixtures.
- ❖ Intra oral plastic surgery.
- ❖ Guided bone and Tissue regeneration consideration for implants fixture.
- ❖ Implants supported prosthesis for complete edentulism and partial edentulism.
- ❖ Occlusion for implant support prosthesis.
- ❖ Peri implant tissue and Management.
- ❖ Peri – implant and management.
- ❖ Maintenance and after care.
- ❖ Management of failed restoration.
- ❖ Work authorization for implant supported prosthesis – definitive instructions, legal aspects, delineation of responsibility.

Prosthodontics treatment for edentulous patients – Removable partial

Prosthodontics-

- a. Scope, definition and terminology, Classification of partially edentulous arches – requirements of 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 – form of the Occlusal rest and rest seat, interproximal Occlusal rest seats, internal Occlusal rests, possible movements of partial dentures, support for rests, lingual rests on canines and incisor teeth, incisal rest and rest seat.

Direct retainer – Internal attachment, extracoronal direct retainer, relative uniformity of retention, flexibility of clasp arms, stabilizing – reciprocal clasp are, criteria for selecting a given clasp design, the basic principles of clasp design, circumferential clasp, bar clasp, combination clasp and other type or 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.

Principle of removable partial denture design – bio mechanic considerations, and the factors that influence after mouth preparations – Occlusal relationship of remaining teeth, 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 surveying, 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 blockout, shaped blockout, arbitrary blockout and relief.

- g. Diagnosis and treatment planning – infection control and cross infection barriers – clinical and laboratory and hospital waste management, Objectives of prosthodontic treatment, Records, systemic evaluation, Oral examination, preparation of diagnostic cast, interpretations 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 denture, 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 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, sequence of abutment preparations on sound enamel or existing restorations, conservative 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 extension base.
- l. Laboratory Procedures – Duplicating stone cast, Waxing the partial denture frame work, 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.

II. 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 – clinical 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 defects 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, 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, Material and laboratory procedures for maxillofacial prosthesis.

III– OCCLUSION

Evaluation, Diagnosis and Treatment of Occlusal Problems

Scope, definition, terminology, optimum oral health, anatomic harmony, functional harmony, occlusal stability, causes of deterioration of dental and oral

health, Anatomical, physiological, neuro – muscular, psychological, considerations of teeth, muscles of mastication, temporomandibular joint, Intra oral and extra oral and facial musculatures, the functions of Cranio mandibular system.

Occlusal therapy, the stomatognathic system, centric relation, vertical dimension, the neutral zone, the occlusal plane, differential diagnosis of temporomandibular disorders, understanding and diagnosing intra articular problems, relating treatment to diagnosis of internal derangements of TMJ, Occlusal splints Selecting instruments for occlusal diagnosis and treatment, mounting casts, Pankey, Mann

– Schuyler philosophy of complete occlusal rehabilitation, long centric, anterior guidance, restoring lower anterior teeth, restoring upper anterior teeth, determining the type of posterior occlusal contours, methods for determining the plane of occlusion, restoring lower posterior teeth, restoring upper posterior teeth, functionally generated path techniques for recording border movements intra orally, occlusal equilibration, Bruxism, Procedural steps in restoring occlusions, requirements for occlusal stability, solving occlusal problem through programmed treatment planning, splinting, solving – occlusal wear problems, deep overbite problems, anterior overjet problems, anterior open bite problems. Treating – end to end occlusion, splayed anterior teeth, cross bite patient, Crowded, irregular, or interlocking anterior bite, using Cephalometric for occlusal analysis, solving severe arch malrelationship problems, transcranial radiography, postoperative care of occlusal therapy.

IV – 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, 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, removal carious, 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, periodontitis. Microbiological aspects of periodontal diseases, marginal lesion, occlusal trauma, periodontal pockets attached gingiva, interdental papilla, gingival embrasures, gingival/periodontal prosthesis, radiographic interpretations of Periodontia, intraoral, periodontal splinting – Fixed prosthodontics with periodontially compromised dentitions, placement of margin of restorations.
- ❖ **Biomechanical principle of tooth preparations** – Individual tooth preparations – Complete metal Crowns – P.F.C., All porcelain – Cerestore crowns, dicor crowns, incerem etc. porcelain jacket crowns partial $\frac{3}{4}$, functional half radicular $\frac{7}{8}$, telescopic, pin – ledge, laminates, inlays, onlays and preparations for restoration of teeth – amalgam, glass ionomer and composite resins, Resin Bond retainers, Gingival marginal preparationsn - Design, material selection, and biological and mechanical considerations – Intracoronar retainer and precision attachments - custom made and ready made.
- ❖ **Isolation and fluid control** – Rubber dam applications, tissue dilation – soft tissue management for cast restoration, impression materials and techniques, provisional restoration, interocclusal records, laboratory support for fixed Prosthodontics, Occlusion, Occlusal equilibration, articulators, recording and transferring of occlusal relations, cementing of restorations.
- ❖ **Resins, Gold and gold alloys, glass Ionomer, restorations.**
- ❖ **Restorations of endodontically treated teeth, Stomatognathic Dysfunction and management.**
- ❖ **Management of failed restorations.**

Osseo integrated, Implant supported fixed Prosthodontics – Osseo integrated implant supported and tooth supported fixed Prosthodontics.

V. TMJ – Temporomandibular joint dysfunction – Scope, definitions, and terminology.

Tempromandibular joint and its function, Orofacial pain, and pain from the temporomandibular joint region, temporomandibular joint dysfunction, temporomandibular joint sounds, temporomandibular joint disorders.

Anatomy related, trauma, disc displacement, Osteoarthritis/Osteoarthritis, Hyper mobility and dislocation, infectious arthritis, inflammatory diseases, Eagle's syndrome (Styloid - stylohyoid syndrome), Synovial chondromatosis, Osteochondrosis disease, Osteonecrosis, Nerve entrapment process, Growth changes, Tumors, Radiographic imaging.

- ❖ Etiology, diagnosis and carnio mandibular pain, differential diagnosis and management of orofacial pain – pain from teeth, pulp, dentin, muscle pain, TMJ pain – psychologic, 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, 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.

VI.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 materials 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, shape, color, embrasures, contact point.

TEACHING AND LEARNING ACTIVITIES:

All the candidates registered for MDS course shall pursue the course for a period of three years as full – time students. During this period each student shall take part actively in learning and teaching activities designed by the Institution/ University. The following teaching and learning activities in each speciality.

Prosthodontic treatment should be practiced by developing skills by treating various and more number of patients to establish skill for diagnosis and treatment and after care with bio – mechanical, biological, bio – esthetics, Bio – phonetics

and all treatment should be carrying 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 department 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 meeting shall be held at least once a week. All trainees are expected to participate actively and enter relevant details in logbook. Each 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 topic 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, endodontic and concerned clinical department. The trainees should be encouraged to present the clinical details, radiological and histo – pathological interpretations and participation in the discussions.
8. **Interdepartmental Meeting:** To bring in more integration among various specialities' there shall be interdepartmental meeting chaired by the dean with all heads of postgraduate departments atleast once a month.
9. **Rural oriented prosthodontics 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. **Evaluations skills:** All the trainees shall be encouraged to enhance their 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/workshop/advance courses but also to present atleast two paper at state/national speciality meeting during their training period.
- 14. Rotation and posting in other department:** To bring in more integration between the speciality and allied fields each postgraduate department shall workout a programme to rotate the trainees in related disciplines and Craniofacial and maxillofacial ward.
- 15. Dissertation:** Trainees shall prepare a disseration bases on the clinical or laboratory experimental work or any other study conducted by them under the supervision of the post graduate guide.

I - YEAR M.D.S.

- ❖ Theoretical exposure of all applied sciences of study.
- ❖ Clinical and non - clinical exercises involved in Prosthodontic therapy for assessment and acquiring higher competence.
- ❖ Commencement of Library Assignment within six months.
- ❖ Short epidemiological study relevant to Prosthodontics.
- ❖ Acquaintance with books, journals and referrals. To acquire knowledge of 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 Materials Science – Biological and biomechanical, bio – esthetics knowledge of using in laboratory and clinics including testing methods for dental materials.
- ❖ Participation and presentation in seminars, didactics lectures.
- ❖ Evaluation – Internal Assessment examinations on Applied subjects.

II YEAR M.D.S.

- ❖ Acquire confidence in obtaining various phases and techniques for providing Prosthodontic therapy.
- ❖ Acquiring confidence by clinical practice with sufficient numbers of patient requiring tooth and tooth surface restorations.

- ❖ Fabrication of adequate number of complete denture prosthesis following, higher clinical approach by utilizing 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 number of R.P.D. covering all partially edentulous situation.
- ❖ Adequate number of Crowns, Inlays, laminates F.P.D. covering all clinical situation.
- ❖ Selection of cases and principles in treatment of partial or complete edentulous patients, by implant supported prosthesis.
- ❖ Treating single edentulous arch situation by implant supported prosthesis.
- ❖ Diagnosis and treatment planning for implant prosthesis.
- ❖ 1st stage and 2nd stage implant surgery.
- ❖ Understanding the maxillofacial Prosthodontics.
- ❖ Treating craniofacial defects.
- ❖ Management of orofacial defects.
- ❖ Prosthetic management of TMJ syndrome.
- ❖ Occlusal rehabilitation.
- ❖ Management of failed restorations.
- ❖ Prosthodontic Management of patient with psychogenic disorder.
- ❖ Practice of child and geriatric prosthodontics.
- ❖ Participation and presentation in seminars, didactics lectures.
- ❖ Evaluation – Internal Assessment examinations.
- ❖ Complete and submit library dissertation by the end of IInd year M.D.S.

III YEAR M.D.S.

- ❖ Clinical and laboratory practice continues from IInd year.
- ❖ Oclusal 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 – Rehabilitaion 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 large number and variety of patients to master the prosthodontics therapy. This includes the practice

management, examinations, treatment planning, communication with patients, clinical and laboratory techniques materials and instrumentation requiring 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. ,F.P.D. Immediate dentures, over dentures, implant supported prosthesis, maxillofacial and body prosthesis, occlusal rehabilitation.

- ❖ Prosthetic management of TMJ syndrome.
- ❖ Management of failed restorations.
- ❖ 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.
 - Partial crowns – 3/4th, 4/5th, 7/8th, 1/2 crowns.
 - Pin – ledge.
 - Radicular crowns.
 - Full crowns.

3. Tooth replacements

	PARTIAL	COMPLETE
• Tooth supported	Fixed partial denture	Overdenture
• Tissue supported	Interim partial denture Intermediate partial denture	Complete denture Immediate denture Immediate complete denture
• Tooth and tissue Overdenture Supported attachment	Cast partial denture	Precision
• Implant supported	Cement retained Screw retained attachment Clip attachment	Bar attachment Ball
• Tooth and implant Supported retained	Screw retained Cement	
• Root supported	Dowel and core Pin retained	Overdenture

- 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 |] | |
| b. Pierre Robin Syndrome |] | |
| c. Ectodermal dysplasia |] | Cast partial denture |
| d. Hemifacial microsomia |] | implant supported
prosthesis |
| e. Anodontia |] | complete dentures |
| f. Oligodontia |] | fixed partial dentures. |
| g. Malformed teeth. |] | |

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] cast partial denture
- f. Maxillectomy] implant supported dentures
- g. Lip and cheek support prosthesis] complete dentures
- 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

5. **T.M.J.and Occlusal disturbances**
 - a. Occlusal equilibration
 - b. Splints
 - Diagnostic
 - Repositioners/Deprogrammers
 - c. Anterior bite plate
 - d. Posterior bite plate
 - e. Bite raising appliances
 - f. Occlusal rehabilitation
6. **Esthetic / Smile designing**
 - a. Laminates/Veneers
 - b. Tooth contouring (peg laterals, malformed teeth)
 - c. Tooth replacements
 - d. Team management
7. **Psychological therapy**
 - a. Questionnaires
 - b. Charts, papers, photographs
 - c. Models
 - d. Case reports
 - e. Patient counseling
 - f. Behaviour modifications
 - g. Referrals
8. **Geriatric Prosthodontics**
 - a. Prosthodontics for the elderly
 - b. Behavioral and psychological counselling
 - c. Removable Prosthodontics
 - d. Fixed Prosthodontics
 - e. Implant supported Prosthodontics
 - f. Maxillofacial Prosthodontics
 - g. Psychological and physiological considerations
9. **Preventive measures**
 - a. Diet and nutrition modulation and counseling
 - b. Referrals

THE BENCH WORK SHOULD BE COMPLETE BEFORE THE CLINICAL WORK STARTS DURING THE FIRST YEAR OF THE M.D.S COURSE

I. Complete dentures

1. Arrangements in adjustable articulator for
 - ❖ Class I
 - ❖ Class II

- ❖ Class III

2. Various face bow transfer to adjustable articulators
3. Processing of characterized anatomical denture

II. Removable partial denture

1. Design for Kennedy's Classification (Survey, block out and design)
 - a. Class I
 - b. Class II
 - c. Class III
 - d. Class IV
2. Designing of various components of RPD
3. Wax pattern on refractory cast
 - a. Class I
 - b. Class II
 - c. Class III
 - d. Class IV
4. Casting and finishing of metal frameworks
5. Acrylisation on metal frameworks
 - for Class I
 - Class III with modification

III. Fixed Partial Denture

1. Preparation in ivory teeth/natural teeth
 - ❖ FVC for metal
 - ❖ FVC for ceramic
 - ❖ Porcelain jacket crown
 - ❖ Acrylic jacket crown
 - ❖ PFM crown
 - ❖ 3/4th (canine, premolar and central)
 - ❖ 7/8th posterior
 - ❖ Proximal half crown
 - ❖ Inlay – Class I,II,V
 - ❖ onlay – Pin ledged, pinhole
 - ❖ Laminates
2. Preparation of different die system
3. Fabrication of wax pattern by drop wax build up technique
 - ❖ Wax in increment 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
 - ❖ All ceramic crowns with characterisation
 - ❖ Metal ceramic crowns with characterisation
 - ❖ Full metal crown
 - ❖ Precious metal crown
 - ❖ Post and core
 7. Laminates
 - ❖ Composites with characterisation
 - ❖ Ceramic with characterisation
 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. Maxillectomy
8. Hemimandibulectomy

9. Finger prosthesis
10. Guiding flange
11. Obturator

V. Implant supported prosthesis

1. Step by step procedures – laboratory phase

VI. Other exercises

1. TMJ Splints – stabilization appliances, maxillary and Mandibular repositioning appliances
2. Anterior disclusion appliances
3. Chrome cobalt and acrylic resin stabilization appliances
4. Modification in accommodation in irregularities in dentures
5. Occlusal splint
6. Periodontal splint
7. Precision attachments – custom made
8. Over denture coping
9. Full mouth rehabilitation (by drop wax technique, ceramic build up)
10. TMJ appliances – stabilization appliances

ESSENTIAL SKILLS:

*Key

O – Washes up and observes

A – Assists a senior

PA - Performs procedure under the direct supervision of a specialist PI -

Performs independently

PROCEDURE	CATEGORY			
	O	A	PA	PI
Tooth and tooth surface restoration Composites – fillings, laminates, inlay, onlay	2	2	2	10
Ceramics – laminates, inlays, onlays	2	2	2	10
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
3/4 th crowns (premolars, canines and centrals)	1	-	-	5
7/8 th posterior crown	1	-	-	5
Proximal half crown	1	-	-	5
Pinledge and pinhole crowns	1	-	-	5
Telescopic crowns	1	-	-	5
Intraradicular crowns (central, lateral, canine, premolar, and molar)	1	-	-	5
Crown as implant supported prosthesis	1	-	1	5
FIXED PARTIAL DENTURES				
Cast porcelain (3 unit)	1	-	-	5
Cast metal – precious and non precious (3 unit posterior)	1	-	-	5
Porcelain fused metal (anterior and posterior)	1	1	1	10
Multiple abutment – maxillary and mandibular full arch	1	1	1	5
Incorporation of custom made and ready made precision joint or attachments	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 for acquired and congenital defects – maxillofacial prosthetics	1	-	-	5
Implant supported prosthesis	1	-	1	1
Implant – tooth supported prosthesis	1	-	1	1
REMOVABLE PARTIAL DENTURE				
Provisional partial denture prosthesis	1	1	1	10
Cast removable partial denture (for Kennedy's Applegate classification with modification)	1	1	1	6
Removable bridge with precision attachment and telescopic crowns for anterior and	1	1	2	4

posterior				
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 denture 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
Maxillectomy	-	-	1	2
Hemimandibulectomy	-	-	1	2
Cranioplasty	-	-	1	1
Finger/hand,foot	-	-	1	2
Body prosthesis	-	-	1	1
Management of burns, scars	-	-	-	1
TMJ SYNDROME MANAGEMENT				
Splints – periodontal, teeth,jaws	-	-	1	4
TMJ supportive and treatment prosthesis	-	-	1	1
Stabilization appliances for maxilla and mandible with freedom to move from IP to	-	-	-	1

CRCP				
In IP without the freedom to move to CRCP	-	-	-	1
Repositioning appliances, anterior disclusion	-	-	-	1

Chrome cobalt and acrylic resin stabilization appliances for modification to accommodate for the irregularities in the dentition.	-	-	-	2
Occlusal adjustment and occlusal equilibrium	-	-	1	4
FULL MOUTH REHABILITATION				
Full mouth rehabilitation – restoration of esthetics and functions of stomatognathic system	-	-	1	4
INTER – DISCIPLINARY TREATMENT MODALITIES				
Inter – disciplinary management – restoration of Oro croniofacial 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

SCHEME OF EXAMINATION:

Theory : 400 Marks

Written examination shall consist of four question paper each of three hours duration. Total Mark for each paper will be 100. Paper I, II and III shall consist of two long questions carrying 20marks each and 6 short essay questions each carrying 10marks. Paper IV will be on Essay Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

Paper I : Applied Basic Science: Applied Anatomy, embryology, growth and development Genetics, Immunology, anthropology, Physiology, nutrition &

Biochemistry, Pathology & Microbiology, Virology, Applied Pharmacology,
Research Methodology and

bio statistics. Applied Dental anatomy & histology, Oral pathology & Oral Microbiology, Adult and geriatric psychology. Applied dental materials.

Paper II : Removeable Prosthodontics and Implant supported prosthesis (implantology), Geriatric dentistry and Cranio facial prosthodontics.

Paper III : Fixed Prosthodontics, occlusion, TMJ and esthetics.

Paper IV : Essay.

*The topics assigned to the different papers are generally evaluated under those sections. However a strict division of the subject may not be possible and some overlapping of topics is inevitable students should be prepared to answer overlapping topics.

B. 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 3 years training period – 25 Marks

- | | |
|--|-----------|
| a. C.D | - 1 mark |
| b. R.P.D. | - 2 marks |
| c. F.P.D. including single tooth and surface restoration | - 2 marks |
| d. I.S.P. | - 5 marks |
| e. Occlusal rehabilitation | - 5 marks |
| f. T.M.J. | - 5 marks |
| g. Maxillofacial Prosthesis | - 5 marks |

2. Present actual treated patients C.D. Prosthesis and Insertion – 90 Marks

- | | |
|---|------------|
| 1) Discussion on treatment plan and patient review | - 10 marks |
| 2) Tentative jaw relation records | - 5 marks |
| 3) Face Bow – transfer | - 5 marks |
| 4) Transferring it on articulators | - 5 marks |
| 5) Extra oral tracing and securing centric and marks Protrusive/lateral, record | - 25 |
| 6) Transfer in on articulator | - 5 marks |
| 7) Selection of teeth | - 5 marks |
| 8) Arrangement of teeth | - 15 marks |
| 9) Waxedup denture trial | - 10 marks |
| 10)Fit, insertion and instruction of previously processed | - 5 marks |

Characterised, anatomic complete denture

prosthesis All steps will include chairside, lab and viva

voce

3. Fixed Partial Denture – 50 Marks

- a. Case discussion and selection of patients for F.P.D. - 5 marks
- b. Abutment preparation isolation and fluid control - 25 marks
- c. Gingival retraction and impressions - 10 marks
- d. Cementation of provisional restoration - 10 marks

4. Removable Partial Denture -35 Marks

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

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.

MD17PCB03 Crown Bridge

AIM:

To train dental graduates so as to ensure higher competence in both general and special areas 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 Prosthetic 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 systemic medical science, knowledge in general and particularly 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, behaviour 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 skill in making appropriate decisions regarding prevention, treatment, after care and referral to deliver comprehensive care to patients.

KNOWLEDGE

The candidate should possess knowledge in applied basic and systematic medical sciences.

- ❖ On human anatomy, embryology, histology, applied in general and particularly 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 Principles and applications to Dental material science.
- ❖ Ability to diagnose and plan treatment for patients requiring a Prosthodontic therapy.
- ❖ Ability to read and interpret a radiograph and other investigations for the purpose of diagnosis and treatment plan.

- ❖ 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 esthetic, and biomaterials. Craniofacial disorders, problem of psychogenic origin.
 - ❖ Age change and Prosthodontic Therapy for the aged.
 - ❖ Ability to diagnose failed restoration and provide Prosthodontic therapy and after care.
 - ❖ Should have essential knowledge on ethics, laws and jurisprudence and forensic odontology in Prosthodontics.
 - ❖ General health conditions and emergency as related to prosthodontics treatment.
 - ❖ Identify social, cultural, economic, environmental, educational and emotional determinants of the patient and consider them in planning the treatment.
 - ❖ Identify cases, which are out side 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.
 - ❖ To have acquired adequate knowledge and understanding of applied basic and systematic medical science Knowledge in general and particular to head and neck.
 - ❖ Should attend continuing education programmes, seminars and conferences related to prosthodontics, 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 in both basic and clinical, with the aim of publishing his/her work and presenting his/her work at various scientific forum.
 - ❖ Should have essential knowledge of personal hygiene, infection control, prevention of cross infection and safe disposal of waste, keeping in view the risk of transmission of Hepatitis & HIV.
 - ❖ Should have an ability to plan establish Prosthodontic clinic/hospital teaching department and practice management.
 - ❖ Should have a sound knowledge for the application of pharmacology, effects of drugs on oral tissue and systems of a body and for medically compromised patients.
 - ❖ The Postgraduates will be able to provide Prosthodontics therapy for patients with competence and working knowledge with understanding of applied medical behavioral and clinical science that are beyond the treatment skills of the general BDS graduate and MDS graduate of other specialities to demonstrate, evaluative and judgement skills in making appropriate decisions regarding prevention, treatment after care and referral to deliver comprehensive care to patients.

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 lost functions of stomatognathic system namely mastication, speech, appearance and psychological comforts. By understanding biological, biomedical, bioengineering principles and systemic condition of the patient to provide a quality health care of the craniofacial region.
- ❖ The candidate should be able to interact with other speciality including 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 leveln of knowledge, training and practice skills currently available in their specially 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, maxillofacial, TMJ, and esthetics Prosthodontics.
- ❖ Laboratory technique management based on skills and knowledge of Dental Materials and dental equipment and instruments management.
- ❖ To understand demographic disribution and target diseases of Cranio mandibuiar region related to Prosthodontics 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 interset.
- ❖ Respect patient's rights and privileges including patients right to information and right to seek second opinion.

COMMUNICATION ABILITIES

- ❖ Develop communication skills, in particular, to explain treatment option available in management.
- ❖ Provide leadership and get the best out of his group in a congenial working atmosphere.
- ❖ Should be able to communicate in simple understandable language with the patient and explain the principles of prosthodontics to the patients. 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, etc. to render the best possible treatment.

COURSE CONTENTS

The candidates shall undergo training for 3 academic years with satisfactory attendance of 80% for each year.

- ❖ The course includes epidemiology and demographic studies, research and teaching skills.
- ❖ Ability to prevent, diagnose and treat with after care for all patients for control of diseases and/or treatment related syndromes, with patient satisfaction for restoring functions of Stomatognathic system by Prosthodontic therapy.

The program outline 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, Prosthodontics including Crown and Bridge Implantology and Material Science.

APPLIED BASIC SCIENCES:

- ❖ A thorough knowledge on the applied aspects of Anatomy, Embryology, Histology particularly to head and neck, Physiology, Biochemistry, Pathology, Microbiology, Virology.
- ❖ Pharmacology, Health and systematic diseases principles in surgery medicine and Anesthesia, Nutrition, Behavioral sciences, age changes, genetics, Dental Materials

Sciences, congenital defects and Syndromes and Anthropology, Biomaterial Sciences, Bio - engineering and Bio - medical and Research Methodology as related to Master 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 back 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. Brief 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 of mastication, Deglutition, speech, respiration, and circulation, teeth eruption, morphology, occlusion 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, pulp 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, Endocranial 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 characteristics of major groups of developmental defects of the orofacial structures.

CELL BIOLOGY:

Detailed study of the structure and function of the mammalian cell with special emphasis on ultra structural features and molecular aspects. Detailed consideration of intercellular junctions. Cell cycle and division, cell – to cell and cell – extra cellular matrix interactions.

APPLIED PHYSIOLOGY AND NUTRITION:

Introduction, Mastication, deglutition, digestion and assimilation, Homeostasis, fluid and electrolyte balance. Blood composition, Volume, function, blood groups and hemorrhage, Blood transfusion, circulation, Heart, Pulse, Blood pressure, capillary and lymphatic circulation, shock, respiration, control, anoxia, hypoxia, asphyxia, artificial respiration. Endocrine glands in particular reference to pituitary, parathyroid and thyroid glands and sex hormones. Role of calcium and Vit D in growth and development of teeth, bone and jaws. Role of Vit. A, C and B complex in oral mucosal and periodontal health. Physiology and function of the masticatory system. Speech mechanism, mastication, swallowing and deglutition mechanism, salivary glands and Saliva.

ENDOCRINES:

General Principles of endocrine activity and disorders relating to pituitary, thyroid, pancreas, parathyroid, adrenals, gonads, including pregnancy and lactation. Physiology of saliva, urine formation, normal and abnormal constituents, Physiology of pain sympathetic and parasympathetic nervous system. Neuromuscular coordination of the stomatognathic system.

APPLIED NUTRITION:

General principles, balanced diet, effect of dietary deficiencies and starvation, Diet, digestion, absorption, transportation and utilization, diet for elderly patients.

APPLIED BIOCHEMISTRY:

General principles governing the various biological activities of the body, such as osmotic pressure, electrolytic dissociation, oxidation – reduction, etc. **general composition of the body, intermediary metabolism, Carbohydrates, proteins, liquids and their metabolism,** Enzymes, Vitamins, and minerals, Hormones, Blood and other body fluids, Metabolism of inorganic elements, Detoxication in the body, Anti metabolites.

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 asesthetics 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 histopathology 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 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. Disease 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 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, somatic damage, genetic damage, protection from primary and secondary radiation, Principles of X – ray production, Applied Principles of radio therapy and after care.

ROENTGENOGRAPHIC TECHNIQUES:

Intra oral: Extra oral roentgenography, Methods of localization, digital radiology and ultra sound, Normal anatomical landmarks of teeth and jaws in radiograms, temporomandibular joint radiograms, neck radiograms.

APPLIED MEDICINE

Systemic diseases and its influence on general health and oral and dental health. Medical emergencies in the dental offices – Prevention, preparation, medico legal consideration, unconsciousness, respiratory distress, altered consciousness, seizures, drug related emergencies, chest pain, cardiac arrest, premedication, and management of ambulatory patients, resuscitation, applied psychiatry, child and senior citizens. Assessment of case, premedication, inhibition, monitoring, extubation, complications 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 (INCLUDING METALLURGY)

- ❖ 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 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 patients 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, behavioural, 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 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.

I. REMOVABLE PROSTHODONTICS AND IMPLANTS

- a. Prosthodontic treatment for completely edentulous patients – Complete denture, immediate complete denture, single complete denture, tooth supported complete denture, Implant supported Prosthesis for completely edentulous patient.
- b. Prosthodontic treatment for partially edentulous patients:- Clasp – retained partial dentures, intra coronal and extra coronal precision attachments retained partial dentures, maxillofacial prosthesis.

Prosthodontic treatment for edentulous patients - Complete Denture and Implant supported Prosthesis

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 joint 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 –behavioural modalities.
- (e) Nutrition Care for the denture wearing patient – Impact of dental status on 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 diseases, oral malignancies, climacteric, use of drugs, mental health – mental attitude, psychological changes, adaptability, geriatric changes – physiologic, pathological, and intra oral changes. Intra oral health – mucous 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, 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 ridge relations:- non surgical methods – rest for the denture supporting tissues, occlusal correction of the old prosthesis, good nutrition, conditioning of the patients musculature, surgical methods - Correction of conditions, preclude optimal prosthetic function – hyperplastic ridge – epulis fissuratum and papillomatosis, frenular attachments and pendulous maxillary tuberosities, ridge augmentation, maxillary and Mandibular oral implant, correction 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 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 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 selections 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 Denture: Single Mandibular denture to oppose natural maxillary teeth, single complete maxillary denture to oppose nature 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 is important, what are the elements of effective communications, special significance of doctor / patient communication, doctors behavior, The iatrosedative (doctors 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) Fabrication 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 and final impression. Developing an analogue / substitute for the maxillary denture bearing area – anatomy of supporting structures – mucous membrane, hard palate, residual ridge, shape of the supporting structure and factors that influence the form and size of the supporting bones, incisive foramen, maxillary tuberosity, sharp spiny process, torus palatinus, Anatomy of peripheral or limiting structures, labial vestibule, Buccal vestibule, vibrating line, preliminary and final impressions, impression making, custom tray and refining the custom tray, preparing the tray to secure the final impression, making the final impression, boxing impression and making the casts.
Developing an analogue / substitute for the Mandibular denture bearing area – Mandible – anatomy of supporting structure, crest of the residual ridge, the Buccal shelf, shape of supporting structure, mylohyoid ridge, mental foramen, genial tubercles, torus mandibularis, Anatomy of peripheral or limiting structure – labial vestibule, Buccal vestibule, lingual

border, mylohyoid muscle, retromylohyoid fossa, sublingual gland region, alveolingual sulcus, Mandibular impressions – preliminary impressions, custom tray, refining, preparing the tray, final impressions.

- (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 trial 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 envelop 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 methods, Orientation / sagittal relation records, Arbitrary / Hinge axis and face bow record, significance and requirement, principles and biological considerations and securing 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 role of teeth and other oral structures – bilabial sounds, labiodental sounds, linguodental sounds, linguoalveolar sound, articulator 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 grinding, 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, 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 – Period 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 complications.

- ❖ Introduction and Historical Review.
- ❖ Biological, clinical and surgical aspects of oral implants.
- ❖ Diagnosis and treatment planning.
- ❖ Radiological interpretation for selection of fixtures.
- ❖ Splints for guidance for surgical placement of fixtures.
- ❖ Intra oral plastic surgery.
- ❖ Guided bone and Tissue regeneration consideration for implants fixture.
- ❖ Implants supported prosthesis for complete edentulism and partial edentulism.
- ❖ Occlusion for implant support prosthesis.
- ❖ Peri implant tissue and Management.
- ❖ Peri – implant and management.
- ❖ Maintenance and after care.
- ❖ Management of failed restoration.
- ❖ Work authorization for implant supported prosthesis – definitive instructions, legal aspects, delineation of responsibility.

Prosthodontics treatment for edentulous patients – Removable partial

Prosthodontics-

- a. Scope, definition and terminology, Classification of partially edentulous arches – requirements of 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 – form of the Occlusal rest and rest seat, interproximal Occlusal rest seats, internal Occlusal rests, possible movements of partial dentures, support for rests, lingual rests on canines and incisor teeth, incisal rest and rest seat.

Direct retainer – Internal attachment, extracoronal direct retainer, relative uniformity of retention, flexibility of clasp arms, stabilizing – reciprocal clasp are, criteria for selecting a given clasp design, the basic principles of clasp design, circumferential clasp, bar clasp, combination clasp and other type or 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.

Principle of removable partial denture design – bio mechanic considerations, and the factors that influence after mouth preparations – Occlusal relationship of remaining teeth, 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 surveying, 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 blockout, shaped blockout, arbitrary blockout and relief.

- g. Diagnosis and treatment planning – infection control and cross infection barriers – clinical and laboratory and hospital waste management, Objectives of prosthodontic treatment, Records, systemic evaluation, Oral examination, preparation of diagnostic cast, interpretations 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 denture, 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 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, sequence of abutment preparations on sound enamel or existing restorations, conservative 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 extension base.
- l. Laboratory Procedures – Duplicating stone cast, Waxing the partial denture frame work, 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 Rebasement of 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.

II. 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 – clinical 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 defects 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, 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 compromised by radiotherapy, Craniofacial Osseo integration, Prosthodontic treatment, Material and laboratory procedures for maxillofacial prosthesis.

III– OCCLUSION

Evaluation, Diagnosis and Treatment of Occlusal Problems

Scope, definition, terminology, optimum oral health, anatomic harmony, functional harmony, occlusal stability, causes of deterioration of dental and oral

health, Anatomical, physiological, neuro – muscular, psychological, considerations of teeth, muscles of mastication, temporomandibular joint, Intra oral and extra oral and facial musculatures, the functions of Cranio mandibular system.

Occlusal therapy, the stomatognathic system, centric relation, vertical dimension, the neutral zone, the occlusal plane, differential diagnosis of temporomandibular disorders, understanding and diagnosing intra articular problems, relating treatment to diagnosis of internal derangements of TMJ, Occlusal splints Selecting instruments for occlusal diagnosis and treatment, mounting casts, Pankey, Mann

– Schuyler philosophy of complete occlusal rehabilitation, long centric, anterior guidance, restoring lower anterior teeth, restoring upper anterior teeth, determining the type of posterior occlusal contours, methods for determining the plane of occlusion, restoring lower posterior teeth, restoring upper posterior teeth, functionally generated path techniques for recording border movements intra orally, occlusal equilibration, Bruxism, Procedural steps in restoring occlusions, requirements for occlusal stability, solving occlusal problem through programmed treatment planning, splinting, solving – occlusal wear problems, deep overbite problems, anterior overjet problems, anterior open bite problems. Treating – end to end occlusion, splayed anterior teeth, cross bite patient, Crowded, irregular, or interlocking anterior bite, using Cephalometric for occlusal analysis, solving severe arch malrelationship problems, transcranial radiography, postoperative care of occlusal therapy.

IV – 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, 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, removal carious, 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, periodontitis. Microbiological aspects of periodontal diseases, marginal lesion, occlusal trauma, periodontal pockets attached gingiva, interdental papilla, gingival embrasures, gingival/periodontal prosthesis, radiographic interpretations of Periodontia, intraoral, periodontal splinting – Fixed prosthodontics with periodontially compromised dentitions, placement of margin of restorations.
- ❖ **Biomechanical principle of tooth preparations** – Individual tooth preparations – Complete metal Crowns – P.F.C., All porcelain – Cerestore crowns, dicor crowns, incerem etc. porcelain jacket crowns partial $\frac{3}{4}$, functional half radicular $\frac{7}{8}$, telescopic, pin – ledge, laminates, inlays, onlays and preparations for restoration of teeth – amalgam, glass ionomer and composite resins, Resin Bond retainers, Gingival marginal preparationsn - Design, material selection, and biological and mechanical considerations – Intracoronar retainer and precision attachments - custom made and ready made.
- ❖ **Isolation and fluid control** – Rubber dam applications, tissue dilation – soft tissue management for cast restoration, impression materials and techniques, provisional restoration, interocclusal records, laboratory support for fixed Prosthodontics, Occlusion, Occlusal equilibration, articulators, recording and transferring of occlusal relations, cementing of restorations.
- ❖ **Resins, Gold and gold alloys, glass Ionomer, restorations.**
- ❖ **Restorations of endodontically treated teeth, Stomatognathic Dysfunction and management.**
- ❖ **Management of failed restorations.**

Osseo integrated, Implant supported fixed Prosthodontics – Osseo integrated implant supported and tooth supported fixed Prosthodontics.

V. TMJ – Temporomandibular joint dysfunction – Scope, definitions, and terminology.

Tempromandibular joint and its function, Orofacial pain, and pain from the temporomandibular joint region, temporomandibular joint dysfunction, temporomandibular joint sounds, temporomandibular joint disorders.

Anatomy related, trauma, disc displacement, Osteoarthritis/Osteoarthritis, Hyper mobility and dislocation, infectious arthritis, inflammatory diseases, Eagle's syndrome (Styloid - stylohyoid syndrome), Synovial chondromatosis, Osteochondrosis disease, Osteonecrosis, Nerve entrapment process, Growth changes, Tumors, Radiographic imaging.

- ❖ Etiology, diagnosis and carnio mandibular pain, differential diagnosis and management of orofacial pain – pain from teeth, pulp, dentin, muscle pain, TMJ pain – psychologic, 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, 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.

VI.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 materials 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, shape, color, embrasures, contact point.

TEACHING AND LEARNING ACTIVITIES:

All the candidates registered for MDS course shall pursue the course for a period of three years as full – time students. During this period each student shall take part actively in learning and teaching activities designed by the Institution/ University. The following teaching and learning activities in each speciality.

Prosthodontic treatment should be practiced by developing skills by treating various and more number of patients to establish skill for diagnosis and treatment and after care with bio – mechanical, biological, bio – esthetics, Bio – phonetics

and all treatment should be carrying 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 department 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 meeting shall be held at least once a week. All trainees are expected to participate actively and enter relevant details in logbook. Each 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 topic 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, endodontic and concerned clinical department. The trainees should be encouraged to present the clinical details, radiological and histo – pathological interpretations and participation in the discussions.
- 8. Interdepartmental Meeting:** To bring in more integration among various specialities' there shall be interdepartmental meeting chaired by the dean with all heads of postgraduate departments atleast once a month.
- 9. Rural oriented prosthodontics 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. Evaluations skills:** All the trainees shall be encouraged to enhance their 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/workshop/advance courses but also to present atleast two paper at state/national speciality meeting during their training period.
- 14. Rotation and posting in other department:** To bring in more integration between the speciality and allied fields each postgraduate department shall workout a programme to rotate the trainees in related disciplines and Craniofacial and maxillofacial ward.
- 15. Dissertation:** Trainees shall prepare a disseration bases on the clinical or laboratory experimental work or any other study conducted by them under the supervision of the post graduate guide.

I - YEAR M.D.S.

- ❖ Theoretical exposure of all applied sciences of study.
- ❖ Clinical and non - clinical exercises involved in Prosthodontic therapy for assessment and acquiring higher competence.
- ❖ Commencement of Library Assignment within six months.
- ❖ Short epidemiological study relevant to Prosthodontics.
- ❖ Acquaintance with books, journals and referrals. To acquire knowledge of 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 Materials Science – Biological and biomechanical, bio – esthetics knowledge of using in laboratory and clinics including testing methods for dental materials.
- ❖ Participation and presentation in seminars, didactics lectures.
- ❖ Evaluation – Internal Assessment examinations on Applied subjects.

II YEAR M.D.S.

- ❖ Acquire confidence in obtaining various phases and techniques for providing Prosthodontic therapy.
- ❖ Acquiring confidence by clinical practice with sufficient numbers of patient requiring tooth and tooth surface restorations.

- ❖ Fabrication of adequate number of complete denture prosthesis following, higher clinical approach by utilizing 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 number of R.P.D. covering all partially edentulous situation.
- ❖ Adequate number of Crowns, Inlays, laminates F.P.D. covering all clinical situation.
- ❖ Selection of cases and principles in treatment of partial or complete edentulous patients, by implant supported prosthesis.
- ❖ Treating single edentulous arch situation by implant supported prosthesis.
- ❖ Diagnosis and treatment planning for implant prosthesis.
- ❖ 1st stage and 2nd stage implant surgery.
- ❖ Understanding the maxillofacial Prosthodontics.
- ❖ Treating craniofacial defects.
- ❖ Management of orofacial defects.
- ❖ Prosthetic management of TMJ syndrome.
- ❖ Occlusal rehabilitation.
- ❖ Management of failed restorations.
- ❖ Prosthodontic Management of patient with psychogenic disorder.
- ❖ Practice of child and geriatric prosthodontics.
- ❖ Participation and presentation in seminars, didactics lectures.
- ❖ Evaluation – Internal Assessment examinations.
- ❖ Complete and submit library dissertation by the end of IInd year M.D.S.

III YEAR M.D.S.

- ❖ Clinical and laboratory practice continues from IInd year.
- ❖ Oclusal 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 – Rehabilitaion 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 large number and variety of patients to master the prosthodontics therapy. This includes the practice

management, examinations, treatment planning, communication with patients, clinical and laboratory techniques materials and instrumentation requiring 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. ,F.P.D. Immediate dentures, over dentures, implant supported prosthesis, maxillofacial and body prosthesis, occlusal rehabilitation.

- ❖ Prosthetic management of TMJ syndrome.
- ❖ Management of failed restorations.
- ❖ 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.
 - Partial crowns – 3/4th, 4/5th, 7/8th, 1/2 crowns.
 - Pin – ledge.
 - Radicular crowns.
 - Full crowns.

3. Tooth replacements

	PARTIAL	COMPLETE
• Tooth supported	Fixed partial denture	Overdenture
• Tissue supported	Interim partial denture Intermediate partial denture	Complete denture Immediate denture Immediate complete denture
• Tooth and tissue Overdenture Supported attachment	Cast partial denture	Precision
• Implant supported	Cement retained Screw retained attachment Clip attachment	Bar attachment Ball
• Tooth and implant Supported retained	Screw retained Cement	
• Root supported	Dowel and core Pin retained	Overdenture

- 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 |] | |
| b. Pierre Robin Syndrome |] | |
| c. Ectodermal dysplasia |] | Cast partial denture |
| d. Hemifacial microsomia |] | implant supported
prosthesis |
| e. Anodontia |] | complete dentures |
| f. Oligodontia |] | fixed partial dentures. |
| g. Malformed teeth. |] | |

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] cast partial denture
- f. Maxillectomy] implant supported dentures
- g. Lip and cheek support prosthesis] complete dentures
- 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

5. **T.M.J.and Occlusal disturbances**
 - a. Occlusal equilibration
 - b. Splints
 - Diagnostic
 - Repositioners/Deprogrammers
 - c. Anterior bite plate
 - d. Posterior bite plate
 - e. Bite raising appliances
 - f. Occlusal rehabilitation
6. **Esthetic / Smile designing**
 - a. Laminates/Veneers
 - b. Tooth contouring (peg laterals, malformed teeth)
 - c. Tooth replacements
 - d. Team management
7. **Psychological therapy**
 - a. Questionnaires
 - b. Charts, papers, photographs
 - c. Models
 - d. Case reports
 - e. Patient counseling
 - f. Behaviour modifications
 - g. Referrals
8. **Geriatric Prosthodontics**
 - a. Prosthodontics for the elderly
 - b. Behavioral and psychological counselling
 - c. Removable Prosthodontics
 - d. Fixed Prosthodontics
 - e. Implant supported Prosthodontics
 - f. Maxillofacial Prosthodontics
 - g. Psychological and physiological considerations
9. **Preventive measures**
 - a. Diet and nutrition modulation and counseling
 - b. Referrals

THE BENCH WORK SHOULD BE COMPLETE BEFORE THE CLINICAL WORK STARTS DURING THE FIRST YEAR OF THE M.D.S COURSE

I. Complete dentures

1. Arrangements in adjustable articulator for
 - ❖ Class I
 - ❖ Class II

- ❖ Class III

2. Various face bow transfer to adjustable articulators
3. Processing of characterized anatomical denture

II. Removable partial denture

1. Design for Kennedy's Classification (Survey, block out and design)
 - a. Class I
 - b. Class II
 - c. Class III
 - d. Class IV
2. Designing of various components of RPD
3. Wax pattern on refractory cast
 - a. Class I
 - b. Class II
 - c. Class III
 - d. Class IV
4. Casting and finishing of metal frameworks
5. Acrylisation on metal frameworks
 - for Class I
 - Class III with modification

III. Fixed Partial Denture

1. Preparation in ivory teeth/natural teeth
 - ❖ FVC for metal
 - ❖ FVC for ceramic
 - ❖ Porcelain jacket crown
 - ❖ Acrylic jacket crown
 - ❖ PFM crown
 - ❖ 3/4th (canine, premolar and central)
 - ❖ 7/8th posterior
 - ❖ Proximal half crown
 - ❖ Inlay – Class I,II,V
 - ❖ onlay – Pin ledged, pinhole
 - ❖ Laminates
2. Preparation of different die system
3. Fabrication of wax pattern by drop wax build up technique
 - ❖ Wax in increment 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
 - ❖ All ceramic crowns with characterisation
 - ❖ Metal ceramic crowns with characterisation
 - ❖ Full metal crown
 - ❖ Precious metal crown
 - ❖ Post and core
 7. Laminates
 - ❖ Composites with characterisation
 - ❖ Ceramic with characterisation
 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. Maxillectomy
8. Hemimandibulectomy

9. Finger prosthesis
10. Guiding flange
11. Obturator

V. Implant supported prosthesis

1. Step by step procedures – laboratory phase

VI. Other exercises

1. TMJ Splints – stabilization appliances, maxillary and Mandibular repositioning appliances
2. Anterior disclusion appliances
3. Chrome cobalt and acrylic resin stabilization appliances
4. Modification in accommodation in irregularities in dentures
5. Occlusal splint
6. Periodontal splint
7. Precision attachments – custom made
8. Over denture coping
9. Full mouth rehabilitation (by drop wax technique, ceramic build up)
10. TMJ appliances – stabilization appliances

ESSENTIAL SKILLS:

*Key

O – Washes up and observes

A – Assists a senior

PA - Performs procedure under the direct supervision of a specialist PI -

Performs independently

PROCEDURE	CATEGORY			
	O	A	PA	PI
Tooth and tooth surface restoration Composites – fillings, laminates, inlay, onlay	2	2	2	10
Ceramics – laminates, inlays, onlays	2	2	2	10
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
3/4 th crowns (premolars, canines and centrals)	1	-	-	5
7/8 th posterior crown	1	-	-	5
Proximal half crown	1	-	-	5
Pinledge and pinhole crowns	1	-	-	5
Telescopic crowns	1	-	-	5
Intraradicular crowns (central, lateral, canine, premolar, and molar)	1	-	-	5
Crown as implant supported prosthesis	1	-	1	5
FIXED PARTIAL DENTURES				
Cast porcelain (3 unit)	1	-	-	5
Cast metal – precious and non precious (3 unit posterior)	1	-	-	5
Porcelain fused metal (anterior and posterior)	1	1	1	10
Multiple abutment – maxillary and mandibular full arch	1	1	1	5
Incorporation of custom made and ready made precision joint or attachments	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 for acquired and congenital defects – maxillofacial prosthetics	1	-	-	5
Implant supported prosthesis	1	-	1	1
Implant – tooth supported prosthesis	1	-	1	1
REMOVABLE PARTIAL DENTURE				
Provisional partial denture prosthesis	1	1	1	10
Cast removable partial denture (for Kennedy's Applegate classification with modification)	1	1	1	6
Removable bridge with precision attachment and telescopic crowns for anterior and	1	1	2	4

posterior				
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 denture 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
Maxillectomy	-	-	1	2
Hemimandibulectomy	-	-	1	2
Cranioplasty	-	-	1	1
Finger/hand,foot	-	-	1	2
Body prosthesis	-	-	1	1
Management of burns, scars	-	-	-	1
TMJ SYNDROME MANAGEMENT				
Splints – periodontal, teeth,jaws	-	-	1	4
TMJ supportive and treatment prosthesis	-	-	1	1
Stabilization appliances for maxilla and mandible with freedom to move from IP to	-	-	-	1

CRCP				
In IP without the freedom to move to CRCP	-	-	-	1
Repositioning appliances, anterior disclusion	-	-	-	1

Chrome cobalt and acrylic resin stabilization appliances for modification to accommodate for the irregularities in the dentition.	-	-	-	2
Occlusal adjustment and occlusal equilibrium	-	-	1	4
FULL MOUTH REHABILITATION				
Full mouth rehabilitation – restoration of esthetics and functions of stomatognathic system	-	-	1	4
INTER – DISCIPLINARY TREATMENT MODALITIES				
Inter – disciplinary management – restoration of Oro croniofacial 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

SCHEME OF EXAMINATION:

Theory : 400 Marks

Written examination shall consist of four question paper each of three hours duration. Total Mark for each paper will be 100. Paper I, II and III shall consist of two long questions carrying 20marks each and 6 short essay questions each carrying 10marks. Paper IV will be on Essay Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

Paper I : Applied Basic Science: Applied Anatomy, embryology, growth and development Genetics, Immunology, anthropology, Physiology, nutrition &

Biochemistry, Pathology & Microbiology, Virology, Applied Pharmacology,
Research Methodology and

bio statistics. Applied Dental anatomy & histology, Oral pathology & Oral Microbiology, Adult and geriatric psychology. Applied dental materials.

Paper II : Removeable Prosthodontics and Implant supported prosthesis (implantology), Geriatric dentistry and Cranio facial prosthodontics.

Paper III : Fixed Prosthodontics, occlusion, TMJ and esthetics.

Paper IV : Essay.

*The topics assigned to the different papers are generally evaluated under those sections. However a strict division of the subject may not be possible and some overlapping of topics is inevitable students should be prepared to answer overlapping topics.

B. 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 3 years training period – 25 Marks

- | | |
|--|-----------|
| a. C.D | - 1 mark |
| b. R.P.D. | - 2 marks |
| c. F.P.D. including single tooth and surface restoration | - 2 marks |
| d. I.S.P. | - 5 marks |
| e. Occlusal rehabilitation | - 5 marks |
| f. T.M.J. | - 5 marks |
| g. Maxillofacial Prosthesis | - 5 marks |

2. Present actual treated patients C.D. Prosthesis and Insertion – 90 Marks

- | | |
|---|------------|
| 1) Discussion on treatment plan and patient review | - 10 marks |
| 2) Tentative jaw relation records | - 5 marks |
| 3) Face Bow – transfer | - 5 marks |
| 4) Transferring it on articulators | - 5 marks |
| 5) Extra oral tracing and securing centric and marks Protrusive/lateral, record | - 25 |
| 6) Transfer in on articulator | - 5 marks |
| 7) Selection of teeth | - 5 marks |
| 8) Arrangement of teeth | - 15 marks |
| 9) Waxedup denture trial | - 10 marks |
| 10)Fit, insertion and instruction of previously processed | - 5 marks |

Characterised, anatomic complete denture

prosthesis All steps will include chairside, lab and viva

voce

3. Fixed Partial Denture – 50 Marks

- a. Case discussion and selection of patients for F.P.D. - 5 marks
- b. Abutment preparation isolation and fluid control - 25 marks
- c. Gingival retraction and impressions - 10 marks
- d. Cementation of provisional restoration - 10 marks

4. Removable Partial Denture -35 Marks

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

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.