

# SYLLABUS FOR Ph.D IN PROSTHODONTICS CROWN & BRIDGE AND IMPLANTOLOGY

## APPLIED BASIC SCIENCES:

**Applied Basic Sciences, Applied Anatomy Embryology Growth And Development Genetics Immunology ,Anthology , Physiology Nutrition & Biochemistry ,Pathology & Microbiology, Virology Applied Pharmacology Research Methodology And Bio Statistics ,Applied Dental & Histology, Oral Pathology & Oral Microbiology Adult And Geriatric Psychology Applied Dental Materials.**

- 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 Material Science, congenital defects and Syndromes and Anthropology, Biomaterial Sciences, Bio-engineering and Bio-medical and Research Methodology as related to Masters degree prosthodontics including crown & bridge and Implantology.

### General Human Anatomy

The Gross Anatomy, anatomy of Head and 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.

### Embryology

- Understanding of 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

- The facial form and Facial growth and development overview of Dento facial growth process and physiology from fetal period to maturity and old age, comprehensive study of craniofacial biology. General physical growth, functional and anatomical aspects of the head, changes in craniofacial skeletal, relationship between development of the dentition and facial growth.

### Dental Anatomy

- Anatomy of primary and secondary dentition, concept of occlusion, mechanism of articulation, and masticatory function. Detailed structural and functional study of the oral dental and Para oral tissues. Normal occlusion, development of occlusion in deciduous mixed and permanent dentitions, root length, root configuration, tooth-numbering system.

### Histology

- Histology of enamel, dentin, Cementum, periodontal ligament and alveolar bone, pulpal anatomy, histology and biological consideration. Salivary glands and Histology of epithelial tissues including glands.

### Applied Genetics and Heredity

- The Principles of orofacial genetics, molecular basis of genetics, genetic risks, counseling, bioethics and relationship to Orthodontic management. Dentofacial anomalies, Anatomical, psychological and pathological characteristic of major groups of developmental defects of the orofacial structures

### C. APPLIED NUTRITION and APPLIED BIOCHEMISTRY:

- General principles, balanced diet effect of dietary deficiencies and starvation. Diet ,digestion ,absorption, transportation and utilization, diet for elderly patients.
- 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, lipids and their metabolism, Enzymes, Vitamins, and minerals Hormones, Blood and other body fluids, Metabolism of inorganic elements, Detoxication in the body, Anti metanolites.

### APPLIED PHARMACOLOGY AND THERAPEUTICS :

Definition of terminologies used - Dosage and mode of administration of drugs. Action and fate of drugs in the body, Drug addiction, tolerance and hypersensitive reactions, Drugs acting on the central nervous system, general anesthetics hypnotics. Analeptics and tranquilizers, Local anesthetics, Chemotherapeutics and antibiotics, Antitubercular and anti syphilitic drugs, Analgesics and antipyretics, Antiseptics, styptics, Sialogogues and antisialogogues, Haematinics, Cortisone, ACTH, insulin and other antidiabetics vitamins: A, D, B - complex group C and K etc. Chemotherapy and Radiotherapy

### APPLIED PATHOLOGY AND APPLIED MICROBIOLOGY:

- Inflammation, repair and degeneration, hyperemia, chronic venous congestion, edema, thrombosis, embolism and infarction. Infection and infective granulomas, Allergy and hypersensitive reaction, Applied his to pathology and clinical pathology.
- Immunity, knowledge of organisms commonly associated with diseases of the oral cavity
- Virology, Cross infection control, sterilization and hospital waste management

### **Applied Oral Pathology:**

- Developmental disturbances of oral and Para oral structures, Regressive changes of teeth, Bacterial, viral and mycotic infections of oral cavity, Dental caries, diseases of pulp and periapical tissues, Physical and chemical injuries of the oral cavity, oral manifestations of metabolic and endocrine disturbances, Diseases of the blood and blood forming organism in relation to the oral cavity, Periodontal diseases, Diseases of the skin, nerves and muscles in relation to the Oral cavity.

### **BIOSTATISTICS:** **INTRODUCTION TO BIOSTATISTIC**

- Scope and need for statistical application to biological data. Definition of selected terms - scale of measurements related to statistics, Methods of collecting data, presentation of the statistical diagrams and graphs.
- Frequency curves, mean, mode of median, Standard deviation and co-efficient of variation, Correlation - Co-efficient and its significance, Binominal distributions normal distribution and Poisson distribution, Tests of significance

### **RESEARCH METHODOLOGY:**

- Understanding and evaluating dental research, scientific method and the behavior of scientists, understanding to logic - inductive logic - analogy, models, authority, hypothesis and causation,
- Quacks, Cranks, Abuses of Logic, Measurement and Errors of measurement, presentation of results, Reliability, Sensitivity and specificity diagnosis test and measurement, Research Strategies, Observation, Correlation, Experimentation and Experimental design. Logic of statistical interference balance judgements, judgement under uncertainty, clinical vs., scientific judgement, problem with clinical judgement, forming scientific judgements, the problem of contradictory evidence, citation analysis as a Means of literature evaluation, influencing judgement: Lower forms of Rhetorical life, Denigration, Terminal, Inexactitude.

### **APPLIED 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, adult and senior citizens. Assessment of case, premaliation, inhibition, monitoring, extubalin, complication assist in O.T. for anesthesia.

### **APPLIED DENTAL MATERIAL:**

Physical and chemical properties of dental materials

, its biocompatibility

Knowledge of the following materials and its application in clinical situations

- Introduction, Aims and Scope of Dental Materials
- Structure & Behavior of matters.
- Important Physical properties applicable to Dental Material including their biological considerations.
- Consideration of following metals and alloy used in Dentistry and the effect of their exposure in mouth
- Dental Amalgam
- Gold and Gold Foil
- Stainless Steel
- Chrome – Cobalt alloys
- Nickel – Chrome alloys, NiTi alloy, Zirconia.
- Casting gold alloys and other alloys used in Dentistry.
- Gypsum Products – Manufacturing, Chemical, Physical & Mechanical Properties, Uses & Manipulation.
- Impression Materials – General requirements, Classification, Composition, Manipulation, Properties And Clinical Application.
- Dental Waxes – Classification, Varieties, Composition, Properties, Manipulation & Uses.
- Dental Casting investments – Types, Composition, Manipulation & Properties.
- Knowledge of testing biological, mechanical and other physical property of all material used for the clinical and laboratory procedures in prosthodontic therapy.
- 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 waster management.

## **Complete Denture Prosthesis**

a) **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

b) **Sequalae 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.

c) **Temporomandibular disorders in edentulous Patients** : Epidemiology etiology and management ,Pharmacotherapy Physical Modalities and Bio-behavioural modalities

d) **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.

e) Understand the scientific basis of **Preparing patient for complete denture** –

Diagnosis and treatment planning for edentulous and partially edentulous patients - familiarity with patients, principles of perception, health questionnaires and identification data, problem identification, prognosis and treatment identification data, problem identification, prognosis and treatment planning - contributing history - patient's history, social information, medical status - systemic status with special reference to debilitating diseases, diseases of the joint, cardiovascular, disease of the skin, neurological disorders, oral malignancies, climacteric, use of drugs, mental health - mental attitude, psychological changes, adaptability, geriatric changes - physiologic, pathological, pathological and intra oral changes. Intra oral health - mucose 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 tone, neuromuscular co-ordination, tongue, cheek and lips. Interpreting diagnostic findings and treatment planning

f) **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, that preclude optimal prosthetic function - hyperplastic ridge - epulis fissuratum and papillomatosis, frenular attachments and pendulous maxillary tuberosities, ridge augmentation, maxillary and Mandibular oral implants, corrections of congenital deformities, discrepancies in jaw size, relief of pressure on the mental foramen, enlargement of denture bearing areas, vestibuloplasty, ridge augmentation, replacement of tooth roots with Osseo integrated denture implants.

g) **Immediate Denture** -

Advantages, disadvantages, contra indication, diagnosis treatment plan and prognosis, Explanation to the patient, Oral examinations, examination of existing prosthesis, tooth modification, prognosis, referrals/adjunctive care, oral prophylaxis and other treatment needs. First extraction/ surgical visit, preliminary impressions and diagnostic casts, management of loose teeth, custom trays, final impressions and final casts two tray or sectional custom impression tray, location of posterior limit and jaw relation records, setting the denture teeth / verifying jaw relations and the patient try in, laboratory phase, setting of anterior teeth, Wax contouring, flasking and boil out, processing and finishing, surgical templates, surgery and immediate denture insertion, post operative care and patient instructions, subsequent service for the patient on the immediate denture, over denture tooth attachments, implants or implant attachments.

i) **Over dentures**

(tooth supported complete dentures) - indications and treatment planning, advantages and disadvantages, selection of abutment teeth, lose of abutment teeth, tooth supported complete dentures. Non-coping abutments, abutment with copings, abutments with attachments, submerged vital roots, preparations of the retained teeth.

j) **the Single Dentures:**

Single Mandibular denture to oppose natural maxillary teeth, single complete maxillary denture to oppose natural Mandibular teeth to oppose a partially edentulous Mandibular arch with fixed prosthesis, partially edentulous Mandibular arch with removable partial dentures. Opposing existing complete dentures, preservation of the residual alveolar ridge, necessity for retaining maxillary teeth and mental trauma.

l) **Materials prescribed in the management of dentulous patients**

Denture base materials, General requirements of biomaterials for edentulous patients, requirement of an ideal denture base, chemical composition of denture base resins, materials used in the fabrication of prosthetic denture teeth, requirement of prosthetic denture teeth, denture lining materials and tissue conditioners, cast metal alloys as denture, bases - base metal alloys.

m) **Articulators** –

Classification, selection, limitations, precision, accuracy and sensitivity and Functional activities of the lower member of the articulator and uses,

n) **Fabrications of complete dentures** –

complete denture impressions - muscles of facial expressions and anatomical landmarks, support, retention, stability, aims and objectives - preservation, support, stability, aesthetics, and retention. Impression materials and techniques - need of 2 impressions the preliminary impression and final impression Developing an analogue / substitute for the maxillary denture bearing area - anatomy of supporting structures - mucous membrane, hard palate, residual ridge, shape of the supporting structure and factors that influence the form and size of the supporting bones, incisive foramen, maxillary tuberosity, sharp spiny process, torus palatinus, Anatomy of peripheral or limiting structures, labial vestibule, Buccal vestibule, vibrating line, preliminary and final impressions, impression making, custom tray and refining the custom tray, preparing the tray to secure the final impression, making the final impression, boxing impression and making the casts

Developing an analogue / substitute for the Mandibular denture bearing areaMandible - 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.

**0) 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 envelope of motion, rest position, Maxillo - Mandibular relations - the centric, eccentric, physiologic rest position, vertical dimension, occlusion, recording methods - mechanical, physiological, Determining the horizontal jaw relation - Functional graphics, tactile or interocclusal check record method, Orientation / sagittal relation records, Arbitrary / Hinge axis and face bow record, significance and requirement, principles and biological considerations and securing on articulators.

**p) Selecting and arranging artificial teeth and occlusion for the edentulous patient**

anterior tooth selection, posterior tooth selection, and principles in arrangement of teeth, and factors governing position of teeth - horizontal, vertical. The inclinations and arrangement of teeth for aesthetics, phonetics and mechanics - to concept of occlusion.

**q) 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 consideration with complete dentures**

speech production - structural and functional demands, neuropsychological background, speech production and the roll of teeth and other oral structures - bilabial sounds, labiodentals sounds, linguodental sounds, linguoalveolar sound, articulatoric characteristics, acoustic characteristics, auditory characteristics, linguopalatal and linguoalveolar sounds, speech analysis and prosthetic considerations.

**s) Insertion and after care laboratory procedure**

wax contouring, flasking and processing, laboratory remount procedures and selective, finishing and polishing. Critiquing the finished prosthesis doctors evaluation, patients evaluation, friends evaluation, elimination of basal surface errors, errors in occlusion, interocclusal records for remounting procedures - verifying centric relation, eliminating occlusal errors, special instructions to the patient appearance with new denture, mastication with new dentures, speaking with new dentures, speaking with new dentures, oral hygiene with dentures, preserving of residual ridges and educational material for patients, maintaining the comfort and health of the oral cavity in the rehabilitated edentulous patients. Twenty-four hours oral examination and treatment and preventive Prosthodontic - periodontic recall for oral examination 3 to 4 months intervals and yearly intervals.

**A. Scope, Definition and Terminology Classification of partially edentulous arches**

requirements of an acceptable methods of classification, Kennedy's classification, Applegate's rules for applying the Kennedy classification

**a. Components of RPD**

- **Major connector** - Mandibular and Maxillary,
- **Minor connectors**, design, functions, form and location of major and minor connectors, tissue -stops, finishing lines, reaction of tissue to metallic coverage
- **Rest and rest seats** - from of the Occlusal rest and rest seat, interproximal Occlusal rest seats, internal Occlusal rests, possible movements of partial dentures, support for rests, lingual rests on canines and incisor teeth, incisal rest and rest seat.
- **Direct retainer**- Internal attachment, extracoronal direct retainer, relative uniformity of retention, flexibility of clasp arms, stabilizing - reciprocal clasp are, criteria for selecting a given clasp design, the basic principles of clasp design, circumferential clasp, bar clasp, combination clasp and other type of retainers.
- **Indirect Retainer** - denture rotation about an axis, factors influencing effectiveness of indirect retainers, forms of indirect retainers, auxiliary Occlusal rest, canine extensions from Occlusal rests, canine rests, continuous bar retainers and linguoplates, modification areas, rugae support, direct - indirect retention.-

**Principles of removable partial Denture design** - bio mechanic considerations, and the factors influence after mouth preparations - Occlusal relationship of remaining 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.

**g. 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.

**h. 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, interpretation of examination data, radiographic interpretation, periodontal considerations, caries activity, prospective surgical preparation, endodontic treatment, analysis of occlusal factors, fixed restorations, orthodontic treatment, need for determining the design of components, impression procedures and occlusion, need for reshaping remaining teeth, reduction of unfavorable tooth contours, differential diagnosis: fixed or removable partial dentures, choice between complete denture and removable partial dentures, choice of materials

**i. Preparation of Mouth for removable partial dentures –**

Oral surgical preparation, conditioning of abused and irritated tissues, periodontal preparation - objectives of periodontal therapy, periodontal diagnosis, control therapy, periodontal surgery

**j Preparation of Abutment teeth**

Classification of abutment teeth, sequence of abutment preparations on sound enamel or existing restorations, conservative restoration using crowns, splinting abutment teeth, utilization, temporary crowns to be used as abutment

**k. 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.

**l. Support for the Distal Extension Denture Base**

Distal extension removable partial denture, Factors influencing the support of distal extension base, Methods for obtaining functional support for the distal extension base.

**m. Laboratory Procedures**

Duplicating a stone cast, Waxing the partial denture framework, Anatomic replica patterns, Spruing, investing, burnout, casting and finishing of the partial denture framework, making record bases, occlusion rims, making a stone occlusal template from a functional occlusal record, arranging posterior teeth to an opposing cast or template, types of anterior teeth, waxing and investing the partial denture before processing acrylic resin bases, processing the denture, remounting and occlusal correction to an occlusal template, polishing the denture.

**n. 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

**o. Rebasing the removable partial denture –**

Relining tooth supported dentures bases, relining distal extension denture bases, methods of reestablishing occlusion on a relined partial denture

**p. 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.

**q. 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

**r. Management of failed restorations and 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 clinician and patient - Cancer Chemotherapy: Oral Manifestations, Complications, and management, Radiation therapy of head and neck tumors: Oral effects, Dental manifestations and dental treatment: Etiology, treatment and rehabilitation (restoration) -

Acquired 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, 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.

**• Diagnosis and treatment planning –**

patients history and interview, patients desires and expectations and needs, systemic and emotional health, clinical examinations - head and neck, oral - teeth, occlusal and periodontal, Preparation of diagnostic cast, radiographic interpretation, Aesthetics, endodontics considerations, abutment selection - bone support, root proximities and inclinations, selection of abutments, for cantilever, pier abutments, splinting, available tooth structures and crown morphology, TMJ and muscles mastication and comprehensive planning and prognosis.

• supported and tooth supported fixed Prosthodontic

- **Tooth preparations** – individual tooth preparations Complete metal Crowns - P.F.C., All porcelain - Cerestore crowns, dicor crowns, incerem etc. porcelain jacket crowns partial 3/4, frional half, radicular 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 preparations - Design, material selection, and biological and mechanical considerations - intracoronar retainer and precision attachments - custom made and ready made

- **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.

- **Evaluation of Resins, Gold and gold alloys, glass Ionomer, restorations.**
- **Restorations of endodontically treated teeth, Stomatognathic Dysfunction and management**
- **Management of failed restorations**
- **Osseo integrated supported fixed Prosthodontics** - Osseo integrated supported and tooth supported fixed Prosthodontics

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.

Able to estimate and select and perform Occlusal therapy, the stomatognathic system, centric relation, vertical dimension, the neutral zone, the occlusal plane, differential diagnosis of temporomandibular disorders, understanding and diagnosing intra articular problems, relating treatment to diagnosis of internal derangements of TMJ, Occlusal splints, Selecting instruments for occlusal diagnosis and treatment, mounting casts, Pankey-mann-schuyler philosophy of complete occlusal rehabilitation, long centric, anterior guidance, restoring lower anterior teeth, restoring upper anterior teeth, determining the type of posterior occlusal contours, methods for determining the plane of occlusion, restoring lower posterior teeth, restoring upper posterior teeth, functionally generated path techniques for recording border movements intra orally, occlusal equilibration, Bruxism, Procedural steps in restoring occlusions, requirements for occlusal stability, solving occlusal problems through programmed treatment planning, splinting, solving - occlusal wear problems, deep overbite problems, anterior overjet problems, anterior open bite problems. Treating - end to end occlusion, splayed anterior teeth, cross bite patient, Crowded, irregular, or interlocking anterior bite, using Cephalometric for occlusal analysis, solving severe arch malrelationship problems, transcranial radiography, postoperative care of occlusal therapy.

**V. TMJ- Temporomandibular joint dysfunction-Scope, definitions and terminology**

To assess Temporomandibular joint and its function, Orofacial pain, and pain from the temporomandibular joint region, temporomandibular joint dysfunction, temporomandibular joint sounds, temporomandibular joint disorders

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

- **Etiology, diagnosis and cranio mandibular pain, differential diagnosis and management of orofacial pain** - pain from teeth, pulp, dentin, muscle pain, TMJ pain - psycho logic, physiologic - endogenous control, acupuncture analgesia, Placebo effects on analgesia, Trigeminal neuralgia, Temporal arteritis

- **Occlusal splint therapy** - construction and fitting of occlusal splints, management of occlusal splints, therapeutic effects of occlusal splints, occlusal splints and general muscles performance, TMJ joint uploading and anterior repositioning appliances, use and care of occlusal splints.

- Reversible - occlusal stabilization splints and physical therapies, jaw exercises, jaw manipulation and other physiotherapy or irreversible therapy occlusal repositioning appliances, orthodontic treatment, Orthognathic surgery, fixed and removable prosthodontic treatment and occlusal adjustment, removable prosthodontic treatment and occlusal adjustment, Indication for occlusal adjustment, special nature of orofacial pain, Indication for occlusal adjustment, special nature of orofacial pain, Psychopathological considerations, occlusal adjustment philosophies, mandibular position, excursive guidance" occlusal contact scheme, goals of occlusal adjustment, significance of a slide in centric, Preclinical procedures, clinical procedures for occlusal adjustment.

**VI. ESTHETIC COMPONENT**

Facial components, dental components, gingival components and 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, size, shape, color, embrasures, contact point.

## **BOOKS RECOMMENDED:-**

### **Complete Dentures & Removable Partial Dentures Related:-**

1. Hand book of immediate over dentures by Robert
2. Over denture by Allen
3. Occlusal correction principles and practice by John
4. Immediate and replacement dentures by Albert
5. A color atlas of complete denture fabrication by Muraoka
6. Dental laboratory procedures removable partial dentures by Rudd
7. Finishing and polishing the frame work by Rudd.
8. Syllabus of complete Denture –Heartwell & John
9. Essentials of Complete denture prosthesis-Wrinkler
10. Complete denture –Boucher
11. Mc Creams Removable partial Denture
12. Millers removable partial denture

### **Fixed Partial Denture Related:-**

1. Management of endodontically treated teeth by Shillingburg
2. Contemporary fixed Prosthodontics by Stephen Rosenstiel
3. Precision attachments by Gareth.
4. A color atlas of ceramo-metal technology by Kuwata.
5. Esthetics of anterior fixed prosthodontics by Gerald.

### **Maxillofacial & Implant Related:-**

1. Contemporary implant dentistry by Misch
2. A color atlas of the Branemark system or oral reconstruction by George. A Zarb.
3. Dental Implants color atlas fundamental and Advance laboratory technology by Robert.
4. Maxillofacial rehabilitation ( Prosthodontics and surgical consideration) by John Buemer III

### **Temporo Mandibular Joint & Occlusion:-**

1. Evaluation, Diagnosis and treatment of Occlusal problems by Peter Dawson
2. Management of T.M.J. Disorders & Occlusion by Jeffrey.J.Okeson
3. Dental Materials properties & manifestation by William.O. Brien
4. Prosthodontics treatment for edentulous patient by Boucher.
5. Syllabus of complete denture by Heartwell
6. Dental secrets by Stephen
7. Inalys crown & bridges by Krantirowich
8. Advanced Restorative Dentistry by Bacom
9. Oral Implantology by Andre
10. Prosthetic rehabilitation by Keith Thomas
11. Implants in Dentistry by Michal.S. Block
12. Occlusion principles and concepts by Jose Dos Santos JR
13. Fixed and removable prosthodontics by Bardy
14. Sectional Dentures-a clinical and treatment manual by Pullen
15. Laboratory procedures for full and partial dentures Derek Stannought
16. Laboratory procedures for Inlays, crown and Bridges by Derek Stannought
17. The science and art of- dental ceramics Vol-I & II by John MCLean
18. Mastering the art of complete dentures by Alexander
19. Oral rehabilitation & clinical determination of occlusion by Hobo
20. Dental Laboratory proceduresin complete dentures- Vol-I and II by Robert John.
21. Precision fixed Prosthodontics –Clinical & Laboratory aspect by Martignoni.
22. Endosteal Dental Implant by Ralph Mackenny
23. Metal ceramic crown and fixed partial dentures by Caloin
24. Fixed bridge Prosthetics by Roberts
25. Color atlas of removable partial dentures by J.C. Devenport
26. Essentials of –Clinical dental Assisting by Joseph
27. Fundamentals of -removable partial dentures by Owen
28. Modern dental assisting by Torres
29. Over dentures made easily by Harold
30. Designing partial denture by David
31. Laboratory manual for fixed partial dentures by Douglas
32. Oral Rehabilitation by Sumiya
33. Advanced removable partial denture by James Brudvik
34. Porcelain and composite Inlays and On lays by Graber and Goldetem
35. Implant therapy by Myron
36. Adhesive metal free restorations by Dietschi and Spreafico
37. Guided bone regeneration –in implant dentistry by Daniel Buser
38. Impression for complete denture by Brenard Levin
39. Esthetic dentistry and ceramic restorations by Bernard Tauti
40. Preservation and restoration of tooth structures by Graham J. Mount
41. Dental implants by Winkelman
42. Partial Dentures by Singer
43. Ceramo metal fixed partial denture by George
44. Esthetic Dentistry Ceramic restorations by Toralic
45. Esthetic in Dentistry by Goldstein