

DEPARTMENT OF PROSTHODONTICS

Dental Materials

Theory – 60 Hrs.

| | | Hours |
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| 1. | <p>Introduction</p> <p>a. Brief History of the development of the science of Dental materials</p> <p>b. Aim of studying the subject of Dental Materials</p> <p>c. Scope and requirements of Dental materials</p> <p>d. Spectrum of materials – Clinical and laboratory applications (Classification of materials)</p> | 01 |
| 2. | <p>Structure and behavior of matter:</p> <p>a. Basic principles – Physical and mechanical properties, Chemical properties, biological properties, rheological properties, thermal properties, light, color and esthetics. Tarnish and corrosion, surface properties and adhesion, biocompatibility allergy, toxicity, setting reactions.</p> <p>b. Enamel and Dentine and bone</p> <p>c. Polymers</p> <p>d. Metals and alloys</p> <p>e. Ceramics</p> <p>f. Composites</p> <p>g. Standardization and assessment of dental materials</p> | 02 |
| 3. | <p>Impression materials and duplicating materials:</p> <p>a. Requirements, classification.</p> <p>b. Desirable properties, composition, setting properties, advantages, disadvantages, indications and manipulation of inelastic and elastic materials. (Tray compound, impression compound, Low fusing compound, Impression plaster, Zinc oxide Eugenol impression paste, Non Eugenol paste, Alginate, Agar Elastic impression materials) Comparative studies between all.</p> | 03 |
| 4. | <p>Gypsum products (Detail), die, cast and model materials (including brief account of electroformed dies):</p> | 02 |
| 5. | <p>waxes and baseplate materials – Contents, properties, manipulation and uses (Modeling wax, casting wax, boxing wax, utility wax, undercut blocking wax, sticky wax, impression wax (Correcta and Iowa) carding wax, preformed wax patterns.</p> | 02 |
| 6. | <p>Chemistry of synthetic resins used in dentistry.</p> | 01 |
| 7. | <p>Denture base resins</p> <p>a. Tray materials.</p> <p>b. Temporary base materials – contents, properties, manipulation, advantages and disadvantages.</p> <p>c. Permanent base resins – types, composition, properties and technical consideration (Flasking, packing, curing, deflasking and processing errors)</p> <p>d. d. Others – Tissue conditioners, soft liners and hard liners, elastic.</p> | 02 |
| 8. | <p>Dental porcelains – types, composition, role played by each ingredient, manipulation, advantages and disadvantages, aluminous porcelain, castable porcelain, metal fused porcelain, and porcelain repair materials.</p> | 03 |

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| 9. | <p>Tooth restorative materials – Classification and ideal properties:</p> <p>a. Dental cements – classification ideal requirements of liners, base and luting cements. Composition, properties, chemistry of setting, manipulation and uses of silicate and silicophosphate cements (in brief), zinc phosphate, zinc polycarboxylate, calcium hydroxide, glass ionomer, modified glass ionomer and resin cement. Comparative studies of mechanical, biological and esthetic properties of all cements.</p> <p>b. Cavity bases, liners and varnishes.</p> <p>c. Restorative resins – Brief history of resins as tooth restorative materials, filled resins (composite resins) – classification, chemistry of setting, composition, properties, uses, manipulation advantages and disadvantages, acid etching, bonding agents (Enamel and dentin bonding systems), Pit and fissure sealants.</p> | 10 |
| 10. | Metals and Alloys – Solidification and microstructure of metals, classification of alloys, relevant physical and mechanical properties, annealing, heat treatment, soldering, welding, fluxes and anti fluxes. | 03 |
| 11. | Direct filling Gold – types, advantages, disadvantages, brief study of manipulation (cold welding) | 02 |
| 12. | <p>Silver amalgam alloy – Brief history, classification, composition, role played by each ingredient, setting reaction, properties, manipulation and uses, comparative study of all types of silver amalgams.</p> <p>Mercury Hygiene and Toxicity</p> | 03 |
| 13. | Casting gold alloys – Classification, corrosion, contents and role played by each ingredient, indications, white gold, uses. | 02 |
| 14. | Dental casting investments – (refractory materials) Classification, composition, setting reaction, manipulation and technical consideration. | 02 |
| 15. | Casting procedures and casting defects - in general | 03 |
| 16. | Base metal casting alloys – properties, composition and uses of Co-Cr, Stainless steel. | 03 |
| 17. | <p>Materials used in orthodontia:</p> <p>Luting cements, direct bonding agents, stainless steel, properties and gauzes of wires of gold, stainless steel, Co-Cr and titanium alloys, brackets, sensitization.</p> | 05 |
| 18. | <p>Abrasive and polishing agents:</p> <p>a. Clinical</p> <p>b. Laboratory</p> | 03 |
| 19. | Dental implant materials – History, biological properties and different designs. | 02 |
| 20. | <p>Miscellaneous:</p> <p>Desirable to know:</p> <p>a. Infection control</p> <p>b. Artificial tooth material</p> <p>c. Separating media</p> <p>d. Die spacers</p> <p>e. Tray adhesives</p> <p>f. Petroleum jelly</p> <p>g. Articulating paper</p> <p>h. Pressure indicating paste</p> <p>i. Endodontic materials</p> <p>j. Comparative studies between metallic and nonmetallic denture base</p> <p>k. Bioglass</p> <p>l. Sprues</p> | 06 |

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| m. Setting expansion, hygroscopic expansion, thermal expansion | |
| n. Dentifrices | |

Practical Exercises: 90 Hours

- I. Demonstration of manipulation of all materials for a batch not more than 8 students.
- II. Exercises to be done by each student:
 - a. Impression material - 20 hours
 Manipulation and making impression and identifying setting time and defects.
 (Comparative studies included)
 - b. Gypsum products -20 hours
 Manipulation and pouring impressions – identify setting time and working time and working time with reference to proportion, water temp, and spatulation time
 -10 hours
 - c. Self-cure and heat cure acrylic resin manipulation and curing - 20 hours
 - d. Cements – manipulation and studying setting time and working time for luting, base and restoration - 10 hours
 - e. Silver amalgam – manipulation, trituration, condensation and studying setting and working time. -10 hours

PRE-CLINICAL PROSTHODONTICS

THEORY: 35 hrs

PRACTICAL: 600 hrs

(I B.D.S. – 200 hrs. 5 hrs/week & II B.D.S. – 400 hrs. 10 hrs/week)

| I. Introduction to Prosthodontics – Scope and definition | |
|--|--------------------|
| 1. Masticatory apparatus and function: <ol style="list-style-type: none"> 1. Maxilla and Mandible with and without teeth. 2. Muscles of mastication and accessory muscles of mastication 3. Brief anatomy of T.M.J 4. Mandibular movements 5. Functions of teeth. | Must Know 3 hrs |
| B. Various branches of Prosthodontics and prosthesis: <ol style="list-style-type: none"> 1. Scope and limitation 2. Appliances v/s prosthesis. 3. Dental prosthesis v/s non-dental prosthesis. | Must Know 1 hr |
| C. Effects of loss of teeth: <ol style="list-style-type: none"> 1. On general health 2. On masticatory apparatus 3. Need to replace lost teeth | Must Know 1 hr |
| D. Outline of Prosthodontics: <ol style="list-style-type: none"> 1. Types of Prosthesis. 2. Requirements of prosthesis – Physical, biological, esthetic considerations. | Must Know 1 hr |
| II. Introduction to components of Prosthesis | |

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| <p>A. Complete Denture Prosthesis:</p> <ol style="list-style-type: none"> 1. Various surfaces (Border and surface anatomy). 2. Components – Base and Teeth. | <p>Must Know 2 hrs</p> |
| <p>B. Removable Partial Denture:</p> <ol style="list-style-type: none"> 1. Classification 2. Major and minor Connectors 3. Direct retainers 4. Rests 5. Indirect retainers 6. denture base 7. Artificial teeth | <p>Must Know 4 hrs</p> |
| <p>C. Fixed Partial Denture:</p> <ol style="list-style-type: none"> 1. Classification 2. Retainers 3. Pontics 4. 4. Connectors | <p>Must Know 1 hr</p> |
| <p>III. All related definitions and terminologies from glossary</p> <ul style="list-style-type: none"> * Model * Cast * Impression *Occlusal rims * Temporary denture base * Permanent denture base * Occlusion *Jaw relation – orientation, vertical and centric * Christensen’s phenomenon * Key of occlusion * Balanced occlusion * Abutment etc... | <p>Must Know 1 hr</p> |
| <p>IV. Introduction to mouth preparation – in brief</p> <p>A. Complete Dentures</p> <ol style="list-style-type: none"> 1. General considerations 2. Pre-prosthetic surgery | <p>Must Know 1 hr</p> |
| <p>B. Removable partial dentures</p> <ol style="list-style-type: none"> 1. General considerations 2. Occlusal rest preparation 3. Modifying contours of the abutments 4. Guide planes 5. Elimination of undercuts | <p>Desirable to know 1 hr</p> |
| <p>C. Fixed Partial Dentures</p> <ol style="list-style-type: none"> 1. Principles of tooth preparation – in brief 2. Retainers in brief | <p>Must Know 1 hr</p> |
| <p>V. Introduction to all steps involved in fabrication of Prosthesis</p> | <p>Must Know 2 hrs</p> |

Clinical Steps in brief and laboratory steps in detail

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|---|--------------------|
| <u>Impression making</u> <ol style="list-style-type: none"> 1. Definition and requirements and types of impressions 2. Various materials used for different impressions 3. Different theories of impression making | Must Know 4 hrs |
| <u>Impression Trays</u> <ol style="list-style-type: none"> 1. Definition, classification, materials, advantages and disadvantages 2. Selection of trays 3. Special trays 4. Spacer design | Must Know 1 hr |
| <u>Introduction to jaw relation record</u> <ol style="list-style-type: none"> 1. Definition and type 2. Temporary denture base – Indications, advantages, Disadvantages, materials used 3. Occlusion rims – materials, shape, dimensions 4. Clinical procedures of jaw relation recording (in brief) | Must Know 2 hrs |
| <u>Articulators and face bow</u> <ol style="list-style-type: none"> 1. Basic out line 2. Need for articulators 3. Definition, classification, parts, advantages, disadvantages of articulators. Definitions, classification, parts, advantages, disadvantages and purpose of face bow transfer 4. Demonstration of face bow transfer to an articulator on a dummy | Must Know 2 hrs |
| <u>Selection of Teeth</u> <ol style="list-style-type: none"> 1. Various guidelines for selection of teeth including dentogenic concept 2. Arrangement of teeth in detail with various factors of esthetics, overjet, overbite etc. | Must Know 1 hr |
| <u>Occlusion</u> <ol style="list-style-type: none"> 1. Balanced Occlusion – need and advantages 2. Various factors of balanced occlusion | Must Know 2 hrs |
| <u>Try in Procedures</u> <ol style="list-style-type: none"> 1. Anterior try-in 2. Posterior try-in 3. Waxing, carving, polishing and final try-in | Must Know 1 hr |
| <u>Processing Procedures</u> <ul style="list-style-type: none"> * Flasking * Dewaxing * Packing * Curing * Finishing and polishing of acrylic dentures | Must Know 1 hr |
| VI. Casting Procedures <ul style="list-style-type: none"> * Preparation of die * Wax pattern * Investing * Burnout * Burnout * Casting * Finishing and polishing | Must Know 2 hrs |

Practical: 600 Hours

I B.D.S

Must know

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

II B.D.S

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

Note:

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

PROSTHODONTICS AND CROWN & BRIDGE

Theory: 65 Hours

III B.D.S – 15 Hours (1 Hour per week)

IV B.D.S Part I: 15 Hours (2 Hours per week)

IV B.D.S Part II: 35 Hours (2 Hours per week)

I. Introduction

1 Hour

- a. Terminology – Definitions – History – Scope in Prosthodontic therapy
- b. Stomatognathic system, Cranio Mandibular system (Masticatory apparatus)
- c. Components of masticatory apparatus – Functions
- d. Applied anatomy, Histology and Physiology of the components of craniomandibular system.
- e. Applied growth and development including genetics, immunity.
- f. Reasons for loss of teeth and associated structures.
- g. Clinic and laboratory – facilities for Prosthodontic therapy (Equipments, instruments, materials).
- h. Prosthodontic therapy for diseases of cranio mandibular system.
- i. Asepsis and cross infection control in clinic and laboratory. Hospital and laboratory waste disposal system and management.

Applied Dental Anatomy, Physiology, Nutrition, occlusion, occlusal curves, vertical overlap, horizontal overlap, Condylar path, saliva, pain and other reflexes, neuro muscular mechanism and applied psychiatry medicine.

II. Removable Partial Denture Prosthesis

1 Hour

1. Introduction and scope
2. Terminology
3. Classification
4. Examination, diagnosis and treatment planning
5. Components of removable partial dentures and their functions

Major connectors

2 Hours

- Mandibular Major connectors
- Maxillary Major Connectors

Minor connectors

- Functions
- Form and location
- Tissue stops
- Finishing lines
- Reaction of tissues to metallic coverage
- Form of occlusal rests and rest seats

Rests and rest seats

2 Hours

- Interproximal occlusal rest seats
- Internal occlusal rest seats
- Incisal rests and rest seats
- Lingual rests on canines and incisor teeth

- Possible movements of partial denture
- Support for rests

Direct retainers

2 Hours

- Internal attachments
- Extra coronal direct retainers
- Relative uniformity of retention
- Criteria for selecting a given clasp design
- Basic principles of clasp design
- Designs of clasps

Indirect retainers

1 Hour

- Denture rotation about an axis
- Factors influencing effectiveness of indirect retainers
- Auxiliary functions of indirect retainers
- Forms of indirect retainers
- Auxillary occlusal rests
- Canine extensions from occlusal rests
- Canine rests
- Continuous bar retainers and linguoplates
- Modification areas
- Rugae support
- Direct indirect retention
- Denture base considerations
- Tooth supported partial denture bases

Distal extension partial denture base

1 Hour

- Functions of denture bases
- Methods of attaching denture bases
- Ideal denture base material
- Advantages of metal bases
- Methods of attaching artificial teeth
- Need for relining

Stress breakers

1 Hour

- Types of stress breakers
- Advantages of stress breakers
- Disadvantages of stress breakers
- Advantages of a rigid design
- Disadvantages of a rigid design
- Stress breaking principles

- Principles of removable partial denture design
- Bio mechanical considerations
- Other factors influencing
- Differentiation between two main types of removable partial dentures
- Essentials of partial denture design
- Components of partial denture design
- Additional considerations influencing design

Surveying

2 Hours

- Description of a dental surveyor
- Purposes of a surveyor
- Factors that determine path of placement and removal
- Step by step procedures in surveying a diagnostic cast
- Final path of placement
- Recording relation of cast to surveyor
- Surveying the master cast
- Measuring retention and balancing of retention
- Influence of survey line in designing of clasps
- Blocking out the master cast
- Relieving the mast cast
- Paralleled block out, shaped block out, arbitrary block out and relief

Preparation of the mouth for removable partial denture

- Oral surgical preparation
- Conditioning of abused and irritated tissues
- Periodontal preparation
- Periodontal diagnosis and treatment planning
- Initial disease control therapy
- Definitive periodontal therapy
- Recall and maintenance
- Advantages and periodontal therapy
- Preparation of abutment teeth
- Classification of abutment preparation on sound enamel
- Sequence of abutment preparation on sound enamel
- Abutment preparation using conservative restorations
- Abutment preparation using crowns
- Splinting of abutment teeth
- Use of isolated teeth as abutment
- Missing anterior teeth
- Temporary crowns when a partial denture is being worn
- Fabricating restorations to fit existing denture retainers

Impression materials and procedures for removable partial dentures

1 Hour

- Rigid materials
- Thermoplastic materials
- Elastic materials
- Impressions of the partially edentulous arch
- Individual impression trays
- Support for the distal extension denture base
- Distal extension removable partial dentures
- Factors influencing the support of distal extension bases
- Method for obtaining functional support for distal extension base

Occlusal relationship for removable partial denture

1 Hour

- Difference in natural and artificial occlusion
- Desirable occlusal contact relationship for removable partial denture
- Method for establishing occlusal relationship
- Materials for artificial posterior teeth
- Establishing jaw relation for mandibular removable partial denture opposing a maxillary complete denture
- Laboratory procedures
- Duplicating a stone cast
- Waxing the partial denture framework
- Anatomic replica pattern
- Spruing, investing, burnout, casting and finishing of the partial denture framework
- Making record base
- Occlusal rims
- Making a stone occlusal template from a functional occlusal record
- Arranging posterior teeth to an opposing cast
- Types of anterior teeth
- Waxing and investing the partial denture before processing the acrylic resin base
- Processing the denture
- Remounting and occlusal corrections to an occlusal template
- Polishing the denture

Work authorization for removable partial denture

- Work authorization
- Definitive instructions by work authorization
- Legal aspects of work authorization
- Relining and rebasing the removable partial denture
- Relining tooth support – Supported denture base
- Relining distal extension denture base
- Method of reestablishing occlusion of a relined partial denture

Repair and additions to removable partial denture

- Broken clasp arms

- Fractured occlusal rests
- Distortion or breakage or other components
- Loss of teeth not involved in the support or retention of the restoration
- Loss of an abutment tooth necessitating its replacement and making a new direct retainer
- Other types of repair
- Repair by soldering

Temporary removable partial denture

- Appearance
- Space maintenance
- Reestablishing occlusal relationships
- Conditioning teeth and residual ridge
- Conditioning the patient for wearing a prosthesis

Removable partial denture considerations in maxillofacial prosthodontics

1 Hour

- Maxillofacial prosthodontics
- Intraoral prosthesis design considerations
- Maxillary prosthesis
- Mandibular prosthesis
- Treatment planning
- Framework design
- Class I resections
- Class II resections
- Mandibular flange prosthesis

III. Elements of Fixed Prosthodontics (Crown and Bridge Prosthesis)

1 Hour

- Introduction, definitions.
- Terminologies
- Indication and contraindications

Examination, diagnosis and treatment planning and radiological interpretations.

1 Hour

Selection and choice of abutment teeth

1 Hour

Biomechanical principles of tooth preparation

2 Hours

- Preservation of tooth structure
- Retention and resistance form
- Structural durability of the restoration
- Marginal integrity
- Preservation of the periodontium
 - Finish lines and the periodontium

- Occlusal bevels
- Flares
- Gingival finish lines
- Preservation of the periodontium

Instrumentation

- Water air cooling
- Armamentarium

Full veneer crowns

2 Hours

- Maxillary and mandibular posterior three quarter crowns
- Anterior three quarter crown
- Pin modified three quarter crowns
- Seven eights crown
- Proximal half crowns
- Inlay
- MOD onlay

Anterior /Posterior porcelain fused to metal crowns

2 Hours

All ceramic crowns

- Preparation modifications for damaged teeth
- Modifications for damaged vital teeth
- Conversion of defects into retentive features
- Solution to common problems

Endodontically treated tooth

1 Hour

- Preparation modification for special situations
- Preparation for fixed bridge abutment
- Preparation for removable partial denture abutments

Isolation of working field and temporary protections of prepared tooth, gingival retractions and impression procedures.

1 Hour

- Construction of Dies of working models, direct and indirect technique.
- Techniques of fabrication of retainers and materials used its application with reference of fabrication & esthetics.

Selection and fabrication of pontics and esthetics.

1 Hour

- Connectors, stress-breakers and assembly of fixed bridges.

Finishing, cementing and maintenance of crowns and bridges.

1 Hour

Implants

1 Hour

- Osseo integrated – Supported prosthesis.
- Introduction and scope advantages and disadvantages
- Classification
- Applied material science, patient evaluation, pre-Osseointegration and preparation, treatment plan, applied surgical procedures
- Osseo integrated supporting prosthesis occlusion, esthetics insertion and maintenance
- Examination, diagnosis and treatment planning and other clinical and Laboratory procedures.

Maxillofacial Prosthesis

1 Hour

- Restoration of congenital and acquired oral and Para oral Defects. (Facial Prostheses, including Osseointegrated support Facial prosthesis
- Splints
- Obturators
- Carriers
- Bruxism and management of occlusal attrition

Miscellaneous

1 Hour

- Patient and practice management in Prosthodontic clinic, Ethics, Law, Jurisprudence and
- Forensic Odontology – in Prosthodontic practice
- Assistants – Laboratories and clinic
- Communication methods – Technician work
- Authorization, methods and legality

Emergencies in Prosthodontics

- During impression recording in partial, complete edentulous situation and Maxillofacial defects.
- Precautions and management of traumatic accidents in tooth preparation, use of constrictor in anesthetic solutions and retraction cords.
- Ill fitting dentures
- Broken clasps, facings
- Broken prosthesis
- Swallowing Prosthesis
- General management of elderly and C.V.S. and immuno compromised patients.

IV. Complete denture prosthesis

Biomechanics of the edentulous state

2 Hours

- Mechanism of tooth support
- Mechanism of complete denture support
- Masticatory load
- Mucosal support

- Residual ridge
- Psychologic effect on retention
- Functional and Para functional considerations
- Occlusion
- Functions: Mastication and swallowing
- Mandibular movements
- Para functions
- Distribution of stresses to the denture supporting tissues changes in morphological face height and the temporomandibular joint
- Face height
- Centric relation
- Temporomandibular joint changes
- Individual behavioral or adaptive response
- Cosmetic changes
- Dietary changes
- Adaptive and psychological changes
- Adaptive potential of the patient

Tissue response to complete denture prosthesis: the aging edentulous patient

1 Hour

- Soft tissue changes
- Soft tissue hyperplasia
- Denture stomatitis
- Treatment of denture stomatitis
- Denture sore mouth

Effects of Aging:

- Oral changes
- Mucosa and skin
- Residual bone and the Maxillo mandibular relation
- Disuse atrophy
- Changes in the size of the basal seat
- Maxillo mandibular relations
- Tongue and taste
- Salivary flow and nutritional impairment
- Degenerative changes
- Dietary problem
- Psychologic changes

Preparing the Patient for Complete Denture Prosthesis

1 Hour

Diagnosis and Treatment planning for patient with some teeth remaining

3 Hours

- Diagnostic procedures

- History and records
- Immediate complaints
- Systemic evaluation – CVS, respiratory, Renal, Endocrines, CNS and other systemic conditions
- Temporomandibular joint disorders
- Intra Oral examination
- Diagnostic cast
- Interarch space problems
- Radiographs and other investigations

Treatment plan

- Deciding whether to extract the remaining teeth
- Pre extraction record
- The patient recently made edentulous
 - New Problems of the recently edentulous patient
 - The patient's concept of the permanence of dentures
- The patient edentulous for a long time
- Mental attitudes and classification
 - ❖ The House classification
 - Philosophic
 - Indifferent
 - Critical
 - Skeptical
 - ❖ Application of the House classifications
 - ❖ Desires and expectations

Diagnosis of patient with no teeth remaining

1 Hour

- ❖ Examination charts and records
- ❖ General observations affecting diagnosis
- ❖ age, sex, occupation affecting diagnosis
- ❖ general health and nutrition
- ❖ social training
- ❖ patient complaints
- ❖ gait
- ❖ lip support
- ❖ lip length
- ❖ lip fullness
 - Profile and contour of features
- ❖ Tone of the facial tissues
 - Vertical face length

Radiographic and intraoral examination

- ❖ advantages of a radiographic examination

Intra oral examination

- ❖ color, resiliency and attachments of the mucosa
 - Abrasions and ulcers
 - Pathoses
- ❖ The maxillary basal seat
 - Torus palatinus
- ❖ Adhesions
- ❖ The mandibular basal seat
 - Arch size
- ❖ Disharmony in jaw sizes
- ❖ Ridge form
- ❖ Ridge relations
- ❖ Arch shape
- ❖ Sagittal profile of the residual ridge
- ❖ Shape of the palatal vault
- ❖ Relation of the hard and soft palate
- ❖ Muscular development
- ❖ Saliva
- ❖ Cheeks and lips
- ❖ Muscle tonus
- ❖ Muscular control
- ❖ Jaw movements
- ❖ Temporomandibular joint problems
- ❖ Tongue size and position
- ❖ Throat form
- ❖ Gagging

Development of the Treatment Plan

1 Hour

- Communicating with the patient
- Nutrition care of the denture patient
- Nutritional needs and status of the elderly
- Impact of wearing dentures on dietary intake
- Calcium and bone health
- Vitamin supplementation
- Nutrition counseling

Identification and Management of the Patient with Problems

1 Hour

- ❖ Basic rules to follow to avoid problems
 - Conduction of the comprehensive examination
 - Correctional procedures prior to making prosthesis

- ❖ Patient behavior characteristics observed during the examination appointment that may indicate future management problems
 - Disrupting regular office routine

- Overreacting to normal examination procedures
- Downgrading or criticizing treatment provided by a previous dentist
 - refusing to divulge the name of a previous dentist or dentists
 - Not having paid for previous dental care
 - Dissatisfaction with existing prosthesis that does not coincide with your evaluation of the prosthesis

- ❖ Numerous sets of prosthesis made in a short time (for example, three in two years)
 - Unrealistic desires to change facial appearance
 - Recent major catastrophe in the immediate family (such as a death, divorce, or severe illness)
 - Legal action pending with the former dentist
 - History of severe gagging and inability to wear prosthesis
 - Crying during discussion of previous dental experience
 - Evidence of excessive smoking
 - Evidence of severe bruxing and/or clenching
 - Restlessness in the dental chair
 - When and how to refer the patient to a specialist for treatment
 - Background information
 - Procedures

Use of Consultation Report

1 Hour

- Contents of the Report

Economics of prosthodontic service

Improving the patient's denture foundation and ridge relations

Nonsurgical Methods

- Rest for the prosthesis supporting tissues
- Occlusal and vertical dimension correcting of old prostheses
- Good nutrition and
- Conditioning of the patient's musculature

Surgical Methods

- correcting conditions that preclude optimal prosthetic function
- Hyperplastic ridge, epulis fissuratum, and papillomatosis
- Frenular attachments and pendulous maxillary tuberosities
- Bony prominences, undercuts, spiny ridges, and nonparallel bony ridges
- Discrepancies in jaw size
- Pressure on the mental foramen
- Enlargement of denture-bearing areas
- Vestibuloplasty
- Ridge augmentation

- Replacing tooth roots by Osseo integrated dental implants
- Management of remaining teeth and pulp for over dentures

Rehabilitation of the Edentulous Patient

2 Hours

- Biologic considerations for Maxillary Impressions
 - Macroscopic Anatomy of Supporting Structures
 - support for the maxillary denture
 - Residual ridge
 - Stress-bearing areas
 - incisive papilla
 - posterior palatal area
 - bone of the basal seat
 - Macroscopic Anatomy of Limiting Structures
 - Resistant and non resistant areas
 - Labial frenum
 - Orbicularis oris
 - Buccal frenum
 - Buccal vestibule
 - Pterygomaxillary notch
 - Palatine fovea region
 - Vibrating line of the palate
 - Microscopic anatomy
 - Histological nature of soft tissue and bone
 - Microscopic anatomy of supporting tissues
 - Microscopic anatomy of limiting structures

Clinical Considerations of Microscopic Anatomy

1 Hour

Maxillary Impression Procedures

- Principles and objectives of Impression making
- Factors of retention of Dentures
 - Physical factors
 - Adhesion
 - cohesion
 - Interfacial surface tension
 - Capillary attraction
 - Atmospheric pressure
 - Anatomic factor
 - Mechanical factors
 - Acquired muscular control
 - Oral and facial musculature
 - Balanced occlusion

Health of the basal seat tissues

- Inflammation of the mucosa
- Distortion of the denture-foundation tissues
- Excessive amounts of hyper plastic tissue
- Degeneration of mucous membrane
- Insufficient space between the upper and lower ridges

Impressions for the edentulous patient

- Primary impression-Patients position, operator's position, stock trays,
- Materials & step by step procedure for making primary impression
 - Impressions trays-special trays and design for final impression
 - Final impression materials

Impression techniques

- First technique-border molded special tray
- Second technique-one step border molded tray
- Third technique-custom tray design based on the previously Worn prosthesis

Biologic considerations for mandibular impressions

2 Hours

- Sequelae of tooth loss
- Macroscopic Anatomy of the supporting structures
 - Crest of the residual ridge
 - Buccal flange area and the buccal shelf
 - flat Mandibular ridges
 - bone of the basal seat
 - stages of change in the mandible
 - mylohyoid ridge
 - throat form and tongue positions
 - mental foramen area resorption
 - insufficient space between the mandible and the tuberosity
 - low mandibular ridges
 - direction of ridge resorption
 - torus mandibular
- Macroscopic Anatomy of Limiting Structures
 - Buccal and labial borders
 - Buccal vestibule
 - External oblique ridge and the buccal flange
 - Masseter muscle region
 - Distal extension of the mandibular impression
 - Retromolar region and pad
 - Lingual borders
 - Influence and action of the floor of the mouth
 - Mylohyoid muscle and mylohyoid ridge

- Sublingual gland region
- Direction of the lingual flange
- Alveololingual sulcus
- Lingual frenum and lingual notch
- Lingual flange

Microscopic Anatomy

- Supporting tissues
- crest of the residual ridge
- Buccal shelf

Mandibular Impression procedures

1 Hour

- Classification of Mandibular Impressions
- Aims and objectives, and theories of impression making
 - Selective pressure impressions
 - Pressure less impressions
- Construction Procedures
 - First technique-selective pressure mandibular impression
 - Border-molded special tray
 - Second technique-selective pressure mandibular impression-
 - One step border-molded tray
 - Third technique-selective pressure Mandibular impression
 - Custom tray design based on the previously worn prosthesis

Biologic considerations in jaw relations and jaw movements

2Hours

- Anatomic factors Temporomandibular Articulation
- Classification of Jaw relations
 - Orientation relation
 - Face bow
 - Vertical relations
 - Horizontal relations

Movements of the mandible

1 Hour

- Practical significance of understanding mandibular Movements
- Methods of studying mandibular movements
- Factors that regulate jaw motion
- Influence of opposing tooth contacts
- Influence of temporomandibular joints
- Axes of mandibular rotation
- Muscular involvement in jaw motion
- Clinical understanding of mandibular movement

Biologic consideration in vertical jaw relations

1 Hour

- Anatomy and Physiology of Vertical jaw Relations
- Establishment of the vertical maxillomandibular relations for complete denture prosthesis
- Methods of determining the vertical dimension
- Physiologic methods
- Tests of vertical jaw relations with the occlusion rims

Biologic considerations in horizontal jaw relations

1 Hour

- Muscle involvement in centric relations
- Harmony between centric relation and centric occlusion
- Orienting centric relation to hinge axis
- Orienting centric relation and vertical relations
- Significance of centric relation
- Recording centric relation
- Methods of recording centric relation
 - Graphic, static, functional & cephalometric
- Extraoral tracing and devices
- Intraoral tracing devices
- Interocclusal centric relation records

Recording and transferring bases and occlusion rims

2 Hours

- Trial denture base, or recording base
- Occlusion rims
 - Guide for esthetics
 - Central line, lip line, canine line, Smile line
 - Level of the occlusal plane
 - Preliminary centric relations records

Relating the patient to the articulator

1 Hour

- Articulators
 - Articulators based on theories of occlusion
 - Articulators based on the type of record used for their adjustment
 - Selection of Articulator for complete dentures
 - Hanau articulator
 - Whip mix articulator
 - Dentatus articulator

Selecting artificial teeth for the edentulous patient

1 Hour

- Mold charts and shade guides
- Anterior tooth selection
 - Pre extraction guides
 - Size of the anterior teeth
 - Form of the anterior teeth

- The dentogenic concept in selecting artificial teeth

➤ Posterior tooth selection

- Bucco lingual width of posterior teeth
- Mesiodistal length of posterior teeth
- Vertical length of the buccal surfaces of posterior teeth
- Types of posterior teeth according to materials
- Types of posterior teeth according to cusp inclines

Preliminary Arrangement Of Artificial Teeth

1 Hour

➤ Guides for preliminarily arranging anterior teeth

- Relationship to incisive papilla
- Relationship to the retention
- Factors governing the anteroposterior position of the dental arch

➤ Setting Maxillary anterior teeth in wax for try in

- Importance of proper Anteroposterior positioning of the anterior teeth

➤ Setting mandibular anterior teeth in the wax for try in

- Horizontal overlap

➤ Preliminary arrangement of Posterior teeth

- Orientation of occlusal plane
- Tentative Buccolingual position of the posterior teeth
- Tentative arch form of the posterior teeth

➤ Setting of posterior teeth for try in

- Guidelines for centric occlusion
- Esthetics and leverage

Perfection and Verification of Jaw Relation Records

1 Hour

➤ verifying vertical Dimension

➤ verifying the centric relation

- Intraoral observation of intercuspatation
- Intraoral interocclusal records

➤ Extra oral articulator method

Creating Facial and Functional harmony with Anterior Teeth

➤ Anatomy of natural appearance and facial expression

- Normal facial landmarks
- maintaining facial support and neuromuscular balance

➤ Basic guides to developing facial and functional harmony

- Preliminary selection of the artificial teeth

- Horizontal orientation of the anterior teeth
- Vertical orientation of the anterior teeth
- Phonetics in the orientation of the anterior teeth
- Inclination of the anterior teeth
- Harmony in the general composition of anterior teeth
- Refinement of individual tooth positions
- Concept of harmony with sex, personality and age of the patient
- Correlating esthetics and incisal guidance
- Patient acceptance of arrangement of anterior teeth

Completion of the try in: Eccentric Jaw relation records Articulators and case adjustment, establishing the posterior palatal seal I Hour

- Protrusive and lateral relations
- Controlling factors of movement
- Eccentric relation records
- Establishing the posterior palatal seal

Arranging Posterior Teeth for Functional Harmony

- Protrusive and lateral relations
- Controlling factors of movement
- Eccentric relation records
- Establishing the posterior palatal seal

Arranging Posterior Teeth for Functional Harmony

- Importance of occlusion
- Maintenance of the arches
- Maintenance of occlusal harmony
 - Differences in artificial occlusion and natural occlusion
 - reduced inclines in dentures
- Rational for arranging posterior teeth in temporomandibular joint disturbances
- Factors of Centric occlusion
- Critical components in arranging posterior teeth
- Laws of protrusive occlusion
- Laws of lateral occlusion
- Occlusal schemes used in complete dentures for the edentulous patients
 - Anatomic teeth
 - Non anatomic teeth
 - Other tooth forms
- Techniques for arranging cusped teeth in Balanced occlusion
- Techniques for arranging cusplless teeth in occlusion

Appearance and Functional harmony of denture Bases

- materials used for denture bases
 - Acrylic Resin
 - Metal
- formation and preparation of the mold packing the mold
- preserving the orientation relations
 - Construction of remounting casts
 - Completing the rehabilitation of the patient
- dentists evaluations
- patients evaluations
- friends evaluations
- treatment of the time of the denture insertion
- elimination of basal surface errors
- errors in occlusion
- interocclusal records for remounting dentures
- interocclusal record of centric relation
- remounting the mandibular denture verifying centric relation

Phonetics – Production of voice and Articulation of sounds

Position of teeth and phonetics

Neutral, Zone, Relief

Processing errors – Reasons and care

Selective grinding

Remount and correction of occlusal discrepancies

Prosthesis – Examination insertion

Patient's instructions after care and recall and Management of Patient complaints.

1 Hour

- Protrusive inter occlusal record
 - Alternative use of plaster inter occlusal records advantages
 - Balanced occlusion in complete dentures
- Special instructions to the patient
 - individuality of patients
 - appearance with new dentures
 - mastication with new dentures
 - speaking with new dentures
 - oral hygiene with dentures
- Maintaining the comfort and health of the oral cavity in a rehabilitated edentulous patient
 - Twenty four hour oral examination and treatment
 - adjustments related to the occlusion
 - adjustments related to the Denture bases

- subsequent oral examinations and treatments

Rehabilitation of the Partially Edentulous Patient (over dentures)

1 Hour

- Tooth-supported complete dentures
 - indications and contraindication for over dentures
 - selection of abutment teeth
 - clinical procedures

Immediate Denture Treatment

1 Hour

- indication for immediate dentures
- contraindications to immediate denture service
- delayed and transitional dentures
- treatment planning
- clinical procedures
 - waxing and Flasking
 - preparation of the surgical template
 - processing occlusal correcting, and final preparation of the immediate dentures
 - surgery and the insertion of the dentures
 - postoperative patient instructions
 - perfecting the occlusion
- subsequent service for immediate dentures

Single complete dentures opposing natural teeth

- maxillary single dentures
- clinical and laboratory procedures
- subsequent problems with single dentures against natural teeth
- mandibular single dentures
- supplemental prosthodontic procedures for the edentulous patient

Relining or Rebasing of Complete Dentures

1 Hour

- treatment rationale
- diagnosis
- clinical procedures
 - Static impression technique closed and open mouth
 - Reliners/rebases
 - Functional impression technique
 - chair side technique

Repair of Complete Dentures and Duplication of Casts

- Maxillary and mandibular fracture repair
 - repairs using cold-curing resin
- duplication of casts

- reversible hydrocolloid technique
- irreversible hydrocolloid technique

Osteointegrated Supported Prosthesis (Dental Implants) For the Edentulous Patient

1 Hour

- -maladaptive denture Behaviour
- -use of dental implants
- -patient considerations
- -tissue integration in the edentulous patient

Management of taper-plastic ridges- atrophied flat mandibular ridges in complete denture prosthesis therapy

Geriatric Dentistry: Management of aged, senior citizens, physically, mentally handicapped patient

Clinicals : 500 hours (including III and IV year programs.)

Clinical programs – (Assignments)

1. Treatment for completely edentulous patients

- III year – 1
- IV year – 2

2. Treatment for Partially Edentulous Patients.

- III year - Provisional R.P.D. – 5
 - Minimum one for each Kennedy's classification
- IV year - Cast Partial Denture - 2.
 - Tooth and tissue borne – (R.P.D.) – 1
 - Tooth borne partial denture- (R.P.D.) – 1

3. F.P.D. – Preparation of crown anterior, posterior, one each

4. Preparation of 3 unit Fixed partial Denture - 1

5. Relining and rebasing, repair – 1 each
6. Immediate denture – 1
7. Single denture – 1
8. Obturators -1

Demonstrations of Clinical and Laboratory procedures for Maxillofacial Prosthesis, and Osseo Integrated – supported Prosthesis.*

| | |
|-----------------------------|----------------|
| Clinical requirement | 500 hrs |
| III B.D.S | 200 hrs |
| IV B.D.S | 300 hrs |

Work to be done by each student during:

III B.D.S

- 2 Complete dentures
- 1 Kennedy's Class I
- 1 Kennedy's Class II

IV B.D.S

- * 3 Complete Dentures
- * 10 Interim Partial Dentures
- * 1 Immediate Complete Denture
- * 1 Relining of Complete Denture
- * 1 Rebasing of Complete Denture
- * 2 Repair of Complete Dentures