**STUDY GUIDE (2022)**

**PROSTHODONTICS**

**COLLEGE OF DENTISTRY**

**LAHORE MEDICAL AND DENTAL COLLEGE**

**LAHORE**

**Prof. SAJID NAEEM**

**INTRODUCTION**

**Purpose of guide is to facilitate learning of the student by enlightening about organization of learning program, facilitate student in managing their studies through the academic year and guidance on assessments methods.**

**The Course of Prosthodontics is spread on a span of three Prof.**

**2nd Prof: - The preclinical Prosthodontics laboratory procedures**

**3rd Prof: - Treatment of partial dentate patients**

**4th Prof: - The treatment of edentulous patients**

**TEACHING AND TRAINING**

The Prosthodontics course is spread over three years. It is organized by designating one faculty member in charge of every year with a demonstrator. This year distribution is as

|  |  |  |  |
| --- | --- | --- | --- |
| **NO.** | **YEAR** | **IN CHARGE** | **DEMONSTRATOR** |
| 1 | Second year | Dr. Hammad Azeem | Dr. Javaria Iftikhar |
| 2 | Third Year | Dr. Ussama Jatala | Dr. Raheema Zahid |
| 3 | Final year | Dr. Khezran Qamar | Dr. Asma Akram |

Prosthodontics is examined in final year. The final year theory syllabus is further divided into three modules. Each faculty member is responsible for one module.

|  |  |  |
| --- | --- | --- |
| **NO.** | **MODULE** | **IN CHARGE** |
| 1 | Complete denture Prosthodontics | Dr. Khezran Qamar |
| 2 | Removable partial denture Prosthodontics | Dr. Sajid Naeem |
| 3 | Implants and Maxillofacial Prosthodontics | Dr. Hammad Azeem |
| 4 | All remaining topic not cover in above modules mentioned in course outlines | Dr. Ussama Jatala |

**CLINICAL TRAINING**

The clinical training is spread in 5 stages of competencies is as

|  |  |  |
| --- | --- | --- |
| **LEVEL** | **COMPETENCY** | **CASE NO.** |
| 1 | Demonstration by faculty member | 1st |
| 2 | Assisted by faculty member | 2nd |
| 3 | Direct observed by supervisor | 3rd |
| 4 | Indirectly observed by supervisor | 4th |
| 5 | Independent | 5th (assessment case) |

Every student is requiring to complete at least one case with every faculty member. The supervisor i.e., faculty member will check and guide the student on every step of the case.

**ASSESSMENT METHODOLOGY**

In the department of Prosthodontics there is one written assessment in every month of academic year. The assessment is consisted of five SAQs and 10 MCQs.

In Prosthodontic clinic the assessment is based on clinical performance. At the end of every rotation the student has to appear in assessment. Assessment is based on examination of the patient, and procedure of student's own case presentation and viva.

On the bases of these assessment every student is graded on quarterly bases. The weak student has a chance to improve her/himself by requesting re-assessment of the weak component of the syllabus.

University examination of Prosthodontics held in Final Prof. It comprises of

Written Examination of 100 marks. Marks distribution is as

Internal assessment 10 Marks

15 SAQs 45 Marks

45 MCQs 45 Marks

Practical examination of 100 Marks. Marks distribution is as

Internal assessment 10 Marks

10 OSPE stations 50 Marks

Set up of teeth 20 Marks (10 each examiner)

Viva voice 20 Marks (10 each examiner)

Internal Assessment

By UHS 10% of marks are dedicated for internal assessment as

Theory paper 10 marks out of 100 marks

Practical paper 10 marks out of 100 marks

**INTERNAL ASSESSMENT**

**THEORY ASSESSMENT**

The students are regularly assessing in every month. The assessment week and day is decided every year in core committee meeting. the Prosthodontics assessments are usually held on Mondays of designated week. The assessment is based on the topics covered in lectures of the last months. At the end of session, a grand assessment is taken commonly called send-up which comprises of all the theory syllabus. The assessments are based on MCQs and SAQs as university examination. The distribution of internal assessment marks is as

Regular monthly assessments 7 marks

Send up marks 3 marks

Total 10 marks

**PRACTICAL INTERNAL ASSESSMENT**

In practical the students are required to complete the clinical/laboratory requirement laid down by UHS/PMDC which are as

Second year Complete denture & RPD Laboratory procedures exercises

Third year 12 RPDs including clinical & Laboratory procedures

Final year 6 complete dentures including clinical & laboratory procedures

The students are continuously assessing on the psychomotor skills in lab. and clinic on every patient. In clinics students are also observed on their attitudes towards patients, staff, teachers and colleagues. At the end of each clinical rotation a final assessment is made by direct observing the student on patient performing any selected procedure.

The distribution of internal assessment marks in practical is as

|  |  |
| --- | --- |
| **YEAR** | **MARKS** |
| 2nd year exercises | 2 marks |
| 3rd year clinical requirements | 2 marks |
| Final year clinical requirement | 3 marks |
| Attitudes | 3 marks |
| Total | 10 |

In complete course of Prosthodontics, the internal assessment is based on Bloom's taxonomy is as

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cognitive Domain | | | Psychomotor skills | Affective domain |
| C1 | C2 | C3 | 7 | 3 |
| 4 | 4 | 2 |

**Recommended Books**

McCracken's

Removable Partial Prosthodontics

Alan B. Carr, David T. Brown

12th edition

Prosthodontics Treatment for Edentulous Patients

Zarb, Hobkirk, Eckept, Jacob

13th Edition

**Reference Books**

Stewart's Clinical

Removable Partial Prosthodontics

Rodney D. Phoenix, David R. Canga, Charles F. DeFreest.

4th Edition

Basker

Prosthodontics Treatment for Edentulous Patients

RM Basker, JC Davenport, JM Thomason

5th Edition

**Working Hours Prosthodontics**

**2nd Year**

Lectures 17 lectures of 45 minutes each = 13hours

Practical 2 hours per week for six months = 48 hours

**3rd Year**

Lectures 36 lectures of 30 minutes each = 18 hours

Practical 11 hours per week for 7 weeks = 77 hours

**4th Year**

Lectures 72 lectures of one hours each = 72 hours

Practical 23.50 hours per week for 10 weeks = 235 hours

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **2nd Year** | **3rd Year** | **4th Year** | **Total Hours** |
| **Lectures** | **13** | **18** | **72** | **98** |
| **Practical** | **48** | **110** | **235** | **314** |
| **Total** | **61** | **128** | **307** | **496** |

**Learning outcomes**

At the end of Final Year student should be able to

1. Examine a patient require Prosthodontic treatment.
2. Make refers whenever require.
3. Prescribe investigations whenever require.
4. Outline a treatment plan for Prosthodontic patient.
5. Perform all clinical steps require for fabrication of a partial or complete dentures independently.
6. Perform all laboratory steps for a prosthesis fabrication.
7. Outline a treatment plan for patient required full mouth rehabilitation.

**LECTURE ALLOCATION – 2022**

**TOTAL NUMBER OF LECTURES (16 WEEKS):** **15**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **LECTURES** | **March** | **April** | **May** | **June** | **July** | **TOTAL** |
| Introduction to Prosthodontics | 1 |  |  |  |  | 1 |
| Applied Anatomy | 1 | 1 |  |  |  | 2 |
| Impression trays |  | 1 |  |  |  | 1 |
| Cast / Baseplates |  | 1 |  |  |  | 1 |
| Occlusal rims |  | 1 |  |  |  | 1 |
| Jaw relation |  |  | 3 |  |  | 3 |
| Face bow |  |  | 1 |  |  | 1 |
| Articulators /Articulation |  |  |  | 1 |  | 1 |
| Surveying |  |  |  | 2 |  | 2 |
| Tooth Set-up |  |  |  | 1 | 1 | 2 |
|  |  |  |  |  |  |  |
| TOTAL | 2 | 4 | 4 | 4 | 1 | 15 |

|  |  |  |
| --- | --- | --- |
| 1 | March | -Introduction to Prosthodontics  -Applied Anatomy |
| 2 | April | -Applied Anatomy -Impression trays  -Cast / Baseplates |
| 3 | May | -Occlusal rims Jaw relation Face bow |
| 4 | June | -Articulators / Articulation |
| 5 | July | -Surveying  -Tooth Set-up |
| 6 | August | -Wrap-up / Grand Test |

**3rd YEAR**

**LECTURE ALLOCATION 2022**

**Total # of lectures in 36 weeks:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **LECTURES** | **April** | **May** | **June** | **July** | **Aug** | **Sept** | **Oct** | **Nov** | **Dec** | **TOTAL** |
| Introduction & classification | 3 |  |  | H  O  L  I  D  A  Y  S |  |  |  |  |  | 3 |
| Connector, Retainer, indirect retainer & Precision Attachments |  | 4 | 4 |  |  |  |  |  | 8 |
| Guiding plane, Surveying Dentures |  |  |  | 4 |  |  |  |  | 4 |
| Movements of RPDs |  |  |  |  | 4 |  |  |  | 4 |
| Patient examination, impression materials, lab procedures |  |  |  |  |  | 4 |  |  | 4 |
| Casting & finishing occlusion, insertion & adjustment of RPDs |  |  |  |  |  | 1 | 3 |  | 4 |
| Relining, Re-basing & Repair |  |  |  |  |  |  | 1 | 3 | 4 |
| **TOTAL** | **3** | **4** | **4** | **4** | **4** | **5** | **4** | **3** | **31** |

**TIMELINE PROSTHODONTICS TOPICS 2022**

|  |  |
| --- | --- |
| April | Introduction & classification of **RPD**. |
| May | **RPD:** Connectors, rest their indication & functions. |
| June | **RPD:** Retainers, indirect retainers & precision attachments. |
| July | **HOLIDAYS** |
| August | **RPD:** Guide planes, Surveying & Denture base purpose and principles. |
| Sept | **RPD:** Movements of Kennedys Class 1,2,3,4 & their preparation. |
| Oct | **RPD:** Patient examination, diagnosis, mouth prep, impression materials lab procedures. |
| Nov | **RPD:** Casting & Finishing, occlusion, insertion & adjustment. |
| Dec | **RPD:** Relining, Re-basing & Repair of RPD. Different types of dentures. |

**FINAL YEAR**

**LECTURE ALLOCATION 2022**

**Total # of lectures in 36weeks:**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **LECTURES** | **March** | **April** | **May** | **June** | **July** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** | **TOTAL** |
| Intro. History & examination of edentulous patients | **1** | **5** |  |  |  |  |  |  |  |  | **6** |
| CD retention & objectives of impression making |  | **4** |  |  |  |  |  |  |  |  | **4** |
| Maxillo- mandibular relation |  | **4** | **1** |  |  |  |  |  |  |  | **5** |
| Try-in insertion & post-op complaint |  |  | **2** |  |  |  |  |  |  |  | **2** |
| Occlusion |  |  | **3** |  |  |  |  |  |  |  | **3** |
| Classification of RPD |  |  |  | **1** |  |  |  |  |  |  | **1** |
| Major connectors of RPD |  |  |  | **3** |  |  |  |  |  |  | **3** |
| Direct & Indirect Retainer, Rest |  |  |  | **3** | **5** |  |  |  |  |  | **8** |
| Surveying, Guide planes, precision attachments |  |  |  |  | **3** |  |  |  |  |  | **3** |
| Articulators, Tooth setup of CD, residual ridge resorption, over denture |  |  |  |  |  | **6** |  |  |  |  | **6** |
| CD management, Dental  Implants, Every denture,  Biometric guidelines |  |  |  |  |  |  | **8** | **7** |  |  | **15** |
| Mouth prep for old denture patient, Combination Syndrome, TP for resorbed ridge |  |  |  |  |  |  |  | **1** | **3** |  | **4** |
| Assessment |  | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **2** | **2** | **11** |
| **TOTAL** | **1** | **13** | **6** | **7** | **8** | **6** | **8** | **8** | **5** | **2** | **71** |

**TIMELINE PROSTHODONTICS TOPICS 2022**

|  |  |  |
| --- | --- | --- |
| 1 | March | Intro. History & examination of edentulous patients |
| 2 | April | CD retention & objectives of impression making |
| 3 | May | Maxillo- mandibular relation |
| 4 | June | Classification of RPD, Requirements of connectors |
| 5 | July | Major connector of RPD, Direct & Indirect Retainer, Rest |
| 6 | Aug | Articulators, Tooth setup of CD, residual ridge resorption, over denture |
| 7 | Sept | CD management  , Dental Implants, Every denture |
| 8 | Oct | Mouth prep for old patients, Biometric guidelines |
| 9 | Nov | Combination Syndrome, TP for resorbed ridge |
| 10 | Dec | Send up |

**PROSTHODONTICS**

**TABLE OF SPECIFICATIONS**

Prosthodontics for 2nd. 3rd. and Final Year B.D.S.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Content** | **C1** | **C2** | **C3** | **PM** | **A** | **Total %** |
| Pre-clinical Dentistry  2nd Year | \*\*\* | \_ | \_ | \*\*\* | - | **8%** |
| Treatment of Partially Edentulous Patients  3rdand Final Year | \*\*\* | \*\* | \* | \*\* | \*\*\* | **29%** |
| Treatment of Edentulous Patients  3rdand Final Year | \*\*\* | \*\* | \* | \*\* | \*\*\* | **60%** |
| Implant Prosthodontic  Maxillofacial Prosthetics  Other related Topics  Final Year | \*\* | \_ | \_ | \_ | \_ | **3%** |
| **Total** |  |  |  |  |  | **100** |

**LIST OF LEARNING OUTCOMES**

**PRE- CLINICAL PROSTHODONTIC**

**2ND. YEAR B.D.S.**

At the end of the academic year the student should be able to

1. Identifies the anatomical landmarks of oral cavity on model
2. Perform laboratory steps required for Complete Denture construction.
3. Describe Occlusion completely.
4. Identify the Kennedy classification of partial edentulous arches on models.
5. Differentiate between parts of a removable partial denture and their functions.
6. Describe types of Crown & Bridge and parts of a Bridge.

**PRE-CLINICAL PROSTHODONTICS**

**TABLE OF SPECIFICATIONS**

2nd. Year B.D.S.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Content** | **C1** | **C2** | **C3** | **PM** | **A** | **Total %** |
| Applied Anatomy of Oral Cavity | \*\*\* | - | - | \*\*\* | - | **5.5%** |
| Impression and Impressions Trays | \*\*\* | - | - | \*\*\* | - | **9.5%** |
| Base Plates & Occlusal Rims | \*\*\* | - | - | \*\*\* | - | **20%** |
| Occlusion | \*\*\* | - | - | - | - | **4%** |
| Set-up of Teeth and Processing of Complete Denture | \*\*\* | - | - | \*\*\* | - | **33%** |
| Classification of RPD | \*\*\* | - | - | \*\*\* | - | **12%** |
| Parts of RPD & Functions | \*\*\* | - | - | \*\*\* | - | **12%** |
| Crown &Bridge | \*\*\* | - | - | - | - | **4%** |
| **Total** |  |  |  |  |  | **100** |

**COLLEGE OF DENTISTRY**

# LAHORE MEDICAL AND DENTAL COLLEGE

# DEPARTMENT OF PROSTHODONTICS

## COURSE OUTLINE

**PRE-CLINICAL PROSTHODONTICS**

## 2nd Year B.D.S

## Laboratory Procedures for Complete Denture

## Lecture

1. Introduction to Prosthodontics
2. Applied anatomy of oral cavity & patient examination
3. Impression for complete denture. Types of special trays & their indication.
4. Base plates, function, requirements & types
5. Occlusal rime, functions, requirements & dimensions

**ASSESSMENT**

1. Articulators. Types of articulators
2. Occlusion – Definitions
3. Occlusion of complete denture
4. Teeth selection for edentulous patient
5. Occlusal adjustment, indication, rules & method

**ASSESSMENT**

1. Relining & rebasing, indication & methods
2. Classification of removable partial denture
3. Parts of RPP, functions & types
4. Crown & bridge, classification & indication

**ASSESSMENT**

# PRACTICALS EXERCISES

1. Upper & lower special tray making
2. Wax-up of upper & lower base plates
3. Flasking , dewaxing of base plates
4. Packing curing & finishing of base plates
5. Occlusal rim making
6. Articulation of base plates caring occlusal rims
7. Set up of anterior teeth
8. Set-up of posterior teeth
9. Waxing, pooling, carving & festooning
10. Flasking & dewaxing of complete denture
11. Final packing & curing of complete denture
12. Finishing and polishing of complete denture
13. Occlusal adjustments of complete denture

**SYLLABUS PRE-CLINICAL PROSTHODONTICS**

1. **Introduction to Prosthodontics**: -

Definition of Prosthodontics. “Definition of Prosthesis,

Introduction to different prostheses i.e. partial denture, complete denture, bridges, crowns

2. **Applied Anatomy of Oral Cavity**

Anatomical landmarks

a. Upper arch

Incisive papilla, Labial frenum, Buccal frenum

Maxillary tuberosity, Hamular notch, Rugae,

Mid palatal suture, Palatine fovea, Vibrating line

Labial sulcus, Buccal sulcus

b. Lower arch

Labial frenum, Buccal frenum, Labial sulcus,

Ridge crest, Buccal shelf, Retromolar fossa,

Retromolar pad, Lingual frenum, Mylohyoid ridge

Retro mylohyoid fossa

3. **Impression & impression Trays**

Definition of impression. Types of impressions

Definition and types of impression trays, stock &special trays

Types of special trays, Indication of close-fitting trays

Indication of spaced trays. Indications for selective pressure trays. Methods of fabrication of special trays.

4. **Base Plates**

Definition of Base Plates. Functions of Base Plates

Requirements of a good Base Plate. Types of Base Plates.

Materials and methods used for fabrication of temporary Base Plates. Materials & methods used for fabrication of permanent Base Plates.

5. **Occlusal Rims: -**

Definition of Occlusal Rims. Functions of Rims. Materials used for construction of Rims. Dimensions of upper& lower Rims. Method of fabrication. Relation of Rims to alveolar ridges.

6. **Articulators**

Definition and functions of Articulators. Types of Articulators, i.e., Plan line, Average value, semi adjustable & Full adjustable Articulators. Difference b/w these Articulators. Definition of different records taken from the patients. Definition of Jaw relation records, Vertical dimension record, Centric records, Face bow records & Face bows.

7. **Occlusion**

Definitions: - Occlusion, Articulation, Centric relation, Centric occlusion, slide in centric, Occlusal plane, Curve of Spee, Curve of Wilson, Curve of Monsoon, over jet, Over bite, Cusp angle, supporting cusps, guiding cups, guiding inclines, working side, balancing side, Working side cusp relation, Balancing side cusp relation, Incisal guidance angle, Condyle guidance angle. Bennett angle, Bennett shift, Angle’s class I relation, Angle’s class II relation, Angle’s class III relation.

8. **Principles of Tooth Selection**:

Selection of shape size & form of anterior teeth, Selection of size i.e., length & width, includes photographs, models, extracted tooth, old x-rays.

Determination of length by the lip line, determination of width by different measurements of face i.e., canine eminence, incisive papilla, bizygomatic width, cranial circumference, corner of mouth, width of nose, lateral surface of nose.

Form determination by William’s theory.

9**. Setup of Teeth**

Set up of teeth according to five relations i.e., mesiodistal, labiolingual, occlusal plane, ridge relation & arch relation, occlusion of tooth to opposing tooth.

10. **Occlusal Adjustment**

Adjustment of occlusion after final curing of dentures, Advantages of occlusal adjustment. Rules of occlusal adjustment. Method of occlusal adjustment.

11. **Relining & Rebasing**

Definitions of Relining and Rebasing. Difference in Relining and Rebasing. Indications of Relining & Rebasing. Common methods of Relining & Rebasing. Materials used for Relining & Rebasing.

12. **Removable Partial Dentures**

Definition of RPD. Advantages of RPD. Classification of RPD i.e., Kennedy & Support classification. Rules of Kennedy classification, Practice of classifying different arches on models.

13. **Parts of RPD**

Definition & functions of different parts of RPD.

1 - Major connectors, types location in arch - Function

2- Minor connectors, functions and location

3- Rest, function of rest, rest seat, types of rest and their location

4- Direct retainers. Definition of Retention & Stability

5- Types of Clasps, parts of a Clasp, functions of different parts of Clasp and their location on tooth. Definition of abutment.

6- Indirect retainers. Definitions of Indirect retention, definition of indirect retainers

7-Saddles. Definition of Saddle, functions of Saddles and types of Saddles

14. **Crown & Bridge**

Definitions of different types of Fixed restorations i.e., Inlay, Only, Crown, Bridge, Veneers.

Types of Crowns and their definitions

Types of Bridges and their definitions, parts of Bridges and their functions.

**MODE OF INFORMATION TRANSFER**

**PRE-CLINICAL PROSTHODONTIC**

Lectures

Practical Demonstrations in Laboratory

Group Discussions

Exercises on Models

**ASSESSMENT TOOLS**

Written Assessment: -

SAQs, MCQs

Oral Examination

Continuous Assessment of Laboratory Exercises

**LIST OF LEARNING OUTCOMES**

**TREATMENT OF PARTIAL EDENTULOUS PATIENT**

**3RD. & FINAL YEAR B.D.S.**

At the end of the course the student should be able to

1. 1-Examine a Partially Edentulous patient.
2. Make refers whenever require
3. Prescribe investigations whenever require
4. Outline a treatment plan for a Partially Edentulous Patient.
5. Design a removable partial denture according to the oral conditions of patient.
6. Perform clinical and laboratory procedures required for RPD fabrication.
7. Outline a treatment plan for a partially edentulous patient required multiple treatments including Fixed Partial Denture.

**TABLE OF SPECIFICATIONS TREATMENT OF PARTIALLY EDENTULOUS PATIENTS**

3rd. and Final Year B.D.S

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Content** | **C1** | **C2** | **C3** | **PM** | **A** | **Total %** |
| Introduction, Classification,  Parts of RPD. | \*\*\* | - | - | \*\*\* | - | **4%** |
| Major Connectors  Minor Connectors | \*\*\* | \*\* | \* | \*\* | - | **8%** |
| Direct Retainers | \*\*\* | \*\* | \* | \*\* | - | **9.5%** |
| Indirect Retainers, Rest & Rest Seats | \*\*\* | \*\* | \* | \*\* | - | **9%** |
| Guide Plans Proximal Plats  Denture Bases | \*\*\* | \*\* | \* | \*\* | - | **9%** |
| Surveyors & Surveying | \*\*\* | \* | - | \*\* | - | **10.5%** |
| Moments of RPD | \*\*\* | \* | \_ | \*\* | - | **4%** |
| Principles of RPD. Design | \*\*\* | \*\* | \* | \*\* | - | **5.5%** |
| Patient Examination, Diagnosis  Treatment Planning | \*\*\* | \*\* | \* | \*\* | \*\*\* | **15%** |
| Abutment Analysis & Preparation | \*\*\* | \*\* | - | \*\* | \*\*\* | **6.5%** |
| Impression Materials & Methods  Jaw Relation, Trial, Insertion | \*\*\* | \*\* | \* | \*\* | \*\*\* | **13.7%** |
| Relining & Rebasing of RPD | \*\*\* | \* | \_ | \* | \*\*\* | **4%** |
| R.P Over denture, Immediate RPD | \*\*\* | \* | \_ | \* | - | **0.72%** |
| Role of FPD in RPD Treatment | \*\*\* | \* | \_ | - | - | **0.72%** |
| Precision Attachment, Stress Breakers, Sectional RPD | \*\* | - | - | - | - | **0.24%** |
| **Total** |  |  |  |  |  | **100** |

## COURSE OUTLINE

**CLINICAL REMOVABLE PROSTHODONTICS**

**Treatment of Partially Edentulous Patient:**

1. Introduction to partial denture and terminology used.
2. Classification of partially edentulous arches.
3. Parts of partial denture and their function.
4. Major & minor connectors, Definitions, functions & requirements.
5. Types of Mandibular major connectors and their indications.
6. Type of maxillary major connectors and their indications.

**ASSESSMENT**

1. Rest. Definition, types and functions, Rest Seat Preparation.
2. Direct retainers. Definition, types, functions, indications.
3. Principles of circumferential clasps.
4. Principles of bar clasps.
5. Indirect retainers.

**ASSESSMENT**

1. Guide planes and proximal plates.
2. Denture Base: Purpose, type and indications.
3. Surveying: Surveyors, Purpose & Principles
4. Use of surveyor.

**ASSESSMENT**

1. Movements of partial Dentures.
2. Principles of Partial Dentures Design in Class I cases.
3. Principles of Partial Dentures Design in Class II, III, IV cases.

**ASSESSMENT**

**CLINICAL PROSTHODONTICS.**

1. Patient examination & Diagnosis.
2. Treatment Planning.
3. Mouth preparations for RPD.
4. Abutment’s analysis.
5. Preparation of Abutments.
6. Impression materials & Techniques for RPD.
7. Altered cast impression Technique.
8. Occlusion in RPD.
9. Insertion and adjustment of RPD.
10. Relining & Rebasing of RPD

**ASSESSMENT**

1. Immediate RPD.
2. Partial Denture Opposing Complete Denture
3. Role of fixed Prosthodontics in RPD treatment
4. R.P over denture
5. Precision attachment
6. Stress Breakers
7. Sectional RPD **ASSESSMENT**

**SYLLABUS OF TREATMENT OF PARTIAL EDENTULOUS PATIENT**

1. **Introduction:**

Aims & Objectives for treatment of Partially Edentulous Patient. Different treatment options for partially edentulous patients.

Definition of RPD, Objectives of RPD treatment. Indication to RPD, Disadvantages of RPD. Alternative to RPDs, different types of RPDs.

2. **Classification**

Classification of partially edentulous arches i.e., Kennedy’s classification. Rules of Kennedy classification, Clinical application of Kennedy’s classification. General discussion on other classification systems.

3. **Parts of Removable Partial Denture**

General introduction to parts of a RPD and their functions. Biological & Mechanical requirements of RPD.

4. **Major Connectors**.

Biological & Mechanical requirements of major connectors. Relation of gingival tissue with major connectors. Periodontal consideration in selection of major connectors. Types of Maxillary and Mandibular major connectors. Clinical application of different major connectors.

5. **Minor Connectors**

Biological & Mechanical requirements of Minor connectors. Relation of Minor connectors with gingival tissues. Form & Location of Minor connectors.

6. **Rest**

Definition of Rest, Functions of Rest. Form of the Rest Seat, preparation of the Rest Seat. Types of Rest and their clinical indications.

7. **Direct Retainers**

Definition and functions of Direct Retainers. Types of Direct Retainer i.e., Extra coronal Intra coronal, Precision attachments. Extra coronal Direct Retainers and their types.

8. **Principals of Clasp design**

Mechanical & Biological requirements of Clasp design. Factors of Clasp retention, flexibility of Clasp arm. Biological & Mechanical requirements of retentive arm. Biological & Mechanical requirements of reciprocating arm. Uniformity of retention.

9. **Circumferential Clasp**

Types of Circumferential Clasps and their clinical indications.

10. **Gingivally Approaching Clasp**

Types of Gingivally Approaching Clasps and their clinical indications.

11. **Indirect Retainers**

Movements of a RPD. Definition of Indirect Retention. Definition of Indirect Retainers Functions of Indirect Retainers. Factors affecting the effectiveness of Indirect Retainers. Forms of Indirect Retainers and their clinical indications.

12. **Path of Insertion & Removal**

Definition of Path of Insertion. Guide Plans, definition and functions. Requirements of Guide Plans. Preparation of Guide Plan. Proximal Plates, definition and functions.

13. **Denture Base**

Functions of Denture Bases. Types of Denture Bases. Advantages & Disadvantages of Resin bases. Advantages and disadvantages of Metallic bases

14. **Surveyor & Surveying**

Description of Surveyor. Function of Surveyor. Principles of Surveying. Method of surveying. Tripoding.

# CLINICAL STEPS OF RPD TREATMENT

15. **Patient Examination**

Infection Control. Objections of Prosthodontic treatment. Extra oral examination. Intra-oral examination. Visual & Digital examination. Periodontal examination. Occlusal examination. Radiographic examination. Impression making for Diagnostic casts. Examination of Articulated diagnostic casts. Interpretation of examination data & treatment planning.

16. **Mouth Preparation for RPD**

Oral surgical preparation includes removal of residual roots, impacted teeth, extraction of unwanted teeth and surgical removal of other pathologies. Pre prosthetic surgery for freni, bony spicules, knife edge ridges, ridge augmentation, restoration of abused oral tissues. Other periodontal and restorative procedures required.

17. **Abutment Analysis**

Crown root ratio, numbers of roots, form and curvature of roots, alveolar bone support, mobility, inclination, occlusal relationship, previous stress response, future stress evaluation, crown contours, restorability of tooth.

18. **Preparation of Abutment:**

Abutment restorations i.e., fillings, inlay, on lays & crowns. Axial recon touring, preparation of guide planes, rest seat preparation.

19. **Impressions for RPD**

Objectives of impressions, requirements of impression, clinical application of impression materials. Selection of impression trays for partially edentulous arches. Methods of impressions making.

20. **Impression Techniques:**

Different impression techniques and their clinical application. Difference b/w anatomical and functional impressions. Different methods of making functional impressions. Details of altered cast impression technique.

21. **Occlusion in RPD**

Requirements of Occlusion in RPD treatment. Different occlusal schemes in different Kennedy classes.

22. **Insertion of RPD**

Adjustment of RPD in patient’s oral cavity. Adjustment of occlusion.

23. **Relining and Rebasing:**

Difference b/w Relining & Rebasing. Objectives of Relining and Rebasing. Clinical evaluation of dentures for Relining & Rebasing. Different methods of Relining & Rebasing.

24. **Immediate RPD**

Definition of Immediate RPD. Advantages of Immediate RPDs. Indications of Immediate RPD. Disadvantages of Immediate RPDs. Different types of Immediate RPDs and their clinical application. Clinical procedures for Immediate RPDs.

25. **RPD Opposing Complete Dentures**:

Problems arising with the use of RPD with complete denture. Treatment planning for control and prevention of these problems.

26. **Role of Fixed PD in RPD Treatment**

Discussion of different clinical situations required combined RPD and FPD treatment. Advantages of Abutment coverage for RPD. Treatment planning for partially edentulous patient with both Removable and Fixed partial denture.

27. **Removable Partial Over Dentures**

Definition of Over dentures. Advantages of Over dentures. Disadvantages of Over dentures. Indications & contraindication of Over dentures. Root preparation for Over dentures. Root coverage for over dentures.

28. **Precision Attachments**Definition of Precision Attachments. Advantages of Precision Attachments. Disadvantages of attachments, indication & contraindication of Precision Attachments; Limitations of Precision Attachment. General classification of PA.

29. **Stress Breakers:**

Problems of Kennedy class-I RPD. Distribution of stress in class -I cases. Objectives of stress breaking in class- I cases. Methods of stress breaking. Different types of stress breakers.

30. **Sectional RPDs:**

Definition of sectional RPDs. Objective of sectional RPDs. General Knowledge of sectional RPDs. Other types of RPDs such as Spoon shaped and Every denture and their advantages and clinical application.

**CLINICAL REQUIRMENTS**

Every student has to attained the required demonstration and complete the 10 cases of partial dentate patient.

**Demonstrations**

|  |  |
| --- | --- |
| CLINICAL DEMONSTRATION | LAB. DEMONSTRATION |
| Patient Examination | Model pouring |
| Treatment Planning | RPD designing |
| Impression recording | Clasp making, Wax-up |
| Jaw relation record | articulation |
| Trial | Set up of Teeth |
| Insertion of denture | Processing of denture |

**LIST OF LEARNING OUT COMES**

**TREATMENT OF EDENTULOUS PATIENT**

**FINAL YEAR B.D.S.**

At the end of the course the student should be able to

1. Examine an Edentulous Patient.
2. Identify the conditions required medical and surgical intervention.
3. Make refers whenever require
4. Prescribe investigations whenever require
5. Outline a treatment plan for edentulous patient according to systemic and

Oral conditions.

1. Perform all clinical and laboratory procedures required for fabrication of

Complete Denture.

1. Outline treatment plan for patients required, over denture, Immediate Denture, Implant supported Denture and Maxillofacial Prosthesis

**TABLE OF SPECIFICATIONS**

**TREATMENT OF EDENTULOUS PATIENT**

FINAL YEAR B.D.S

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Content** | **C1** | **C2** | **C3** | **PM** | **A** | **Total %** |
| Applied Anatomy of Oral Cavity  Denture Retention, RRR,  Patient Adaptation | \*\*\* | \*\* | \* | \_ | \_ | **0.8%** |
| History Taking & Patient Examination | \*\*\* | \*\* | \* | \*\*\* | \*\*\* | **10%** |
| Mouth Preparations & Management of Abused Oral Tissues | \*\* | \* | \* | \*\* | \*\* | **7%** |
| Primary & Secondary Impressions  Theories, Materials & Methods | \*\*\* | \*\* | \* | \*\*\* | \*\*\* | **17%** |
| Jaw Relation Records | \*\*\* | \*\* | \_ | \*\* | \*\*\* | **11.6%** |
| Occlusion of C.D.  Factors, Theories, Clinical Application | \*\*\* | \* | \_ | \*\* | \_ | **9%** |
| Selection of Teeth, Set-up of Teeth, Phonetics | \*\*\* | \*\* | \_ | \*\* | \_ | **8.5%** |
| Trial, Processing, Occlusal Adjustment, Insertion of C.D. | \*\*\* | \*\* | \_ | \*\* | \*\*\* | **21%** |
| Complains, Complications of C.D. Relining & Rebasing | \*\*\* | \* | \_ | \*\* | \*\* | **11%** |
| Concepts & Theories of C.D. Design | \*\*\* | \* | \_ | \* | \* | **2.5%** |
| Immediate C.D, Over denture  Coping denture | \*\*\* | \* | \_ | \_ | \_ | **0.8%** |
| Implant Prosthodontics | \*\* | \_ | \_ | \_ | \_ | **0.35%** |
| Maxillofacial Prosthetics | \* | \_ | \_ | \_ | \_ | **0.46%** |
| **Total** |  |  |  |  |  | **100** |

COURSE OUTLINE

**CLINICAL REMOVABLE PROSTHODONTICS**

**Treatment of Edentulous Patient:**

1. Introduction to Complete Denture Prosthodontics.
2. Applied Anatomy of upper and lower arch.
3. Consequences of edentulism.
4. Mechanism of denture retention.
5. Problems of Reduced Residual Ridges.
6. Patients Adaptation to complete dentures
7. History taking and patient examination.

**ASSESSMENT**

1. Mouth preparations for C.D. patient.
2. Management of abused Oral tissues.
3. Primary impressions for C.D. requirements & materials.
4. Theories of Secondary impression.
5. Method & material for Secondary impression.
6. Upper arch impression.
7. Lower arch impression.
8. Special impression technique & their clinical indications.

**ASSESSMENT**

1. Jaw relation records. Types and objectives.
2. Adjustment of occlusal rims.

18. Face Bow record and Face- Bow.

19. Vertical Dimension record.

20. Center relation records.

21. Eccentric records.

22. Articulators, Classification, Indication and uses.

**ASSESSMENT**

23. Occlusion of complete denture. Requirement & theories.

24. Factors of occlusion

25. Monoplane occlusion.

26. Bilateral Balanced Occlusion

27. Lingualized Occlusion.

28. Functionally generated Occlusion.

29. Phonetics

**ASSESSMENT**

30. Guidelines for selection of anterior teeth. Size, shape & color.

31. Setup of anterior teeth.

32. Set up of Posterior teeth.

33. Trial stage of C.D.

34. Occlusal adjustment.

35. Insertion of complete denture.

36. Complaints of C.D.

37. Complication of C.D. uses.

38. Relining and rebasing. Indications & methods.

**ASSESSMENT**

**Special Topic**

1. Concepts of complete denture design.
2. Bone support concept.
3. Biometric guideline concept.
4. Neutral zone concept.
5. Immediate complete denture. Indications, advantages & disadvantages.
6. Tooth supported C.D. i.e. over dentures. Indications, advantages & disadvantages.
7. Clinical and laboratory procedures for over dentures.
8. Coping Dentures.

**ASSESSMENT**

1. Implants. Definitions, Classification.
2. Advantages of implants. Indications & contraindications.
3. Prosthetic option for implants supported C.D.
4. Maxillofacial Prosthetics.
5. Obturators.
6. Mandibulectomy Prosthetics
7. Extra Oral Prostheses

**ASSESSMENT**

**SYLLABUS**

# TREATMENT OF EDENTULOUS PATIENTS

## 1. **Introduction**

Aims & Objectives for treatment of Edentulous Patients. Different treatment options for edentulous patient.

Introduction to complete denture treatment. Objective of complete denture treatment. Different types of C.D.

2. **Applied Anatomy**

Description, Identification and Clinical significances of anatomical landmarks

**Upper arch:** – Incisive papilla, Labial frenum, Buccal frenum, Maxillary tuberosity, Zygomatic process of maxilla, Hamular notches, Fovea palatinea, Mid-palatal raphe, Rugae. Peripheral structures of the denture bearing area. Types of oral mucosa, consistency of mucosa on maxillary denture bearing area.

**Lower arch**: – Labial frenum, Crest of ridge, Buccal frenum, Buccal shelf, Masseter muscle notch, Retromolar pad, Retromolar fossa, Retro mylohyoid fossa, Mylohyoid ridge, Post mylohyoid fossa, Pre mylohyoid fossa, Lingual gland, Lingual frenum. Peripheral structures of the denture bearing area. Consistency of mucosa on denture bearing area.

3. **Consequences of Edentulism:** –

Effects on esthetic, effects on mastication, effects on speech. Psychological effects. Effects on TMJ.

4. **Denture Retention**

Definition of Retention, Stability & Support. Types of denture retention.

Factors of Physical retention: - Cohesion & adhesion, mechanism & factors of adhesion (surface tension, wet ability, contact angle), atmospheric pressure & peripheral seal

Physiological factors of retention: - Acquired muscular control, muscle balance, tongue position, peripheral relation with muscles, shape of the flanges, direction of flanges.

Mechanical factors of retention: - Undercut areas, mechanical devices.

Psychological factors of retention: - Patient attitude, patient co-operation, patient doctor relation, patient motivation.

1. **Reduced Residual Ridges: -**

Bone resorption: - Factors of bone resorption, (Anatomical, mechanical, systemic). Effects of bone resorption on functions and esthetics. Methods to minimize bone resorption. Sequence of bone resorption. Management of reduced residual ridges.

1. **Patients’ adaptation**: -

Parts of adaptation

* 1. Habituation: - Definition and methods of habituation, response of receptors, factor that effects the habituation

b. Learning: - Definition, effects of age on learning, effects of other factors as health, motivation & denture experience.

1. **History & Examination**:

Importance of history taking & examination. Sequence of history taking. Patient doctor relationship. Role of charts in history & examination. Complete explanation of the history & examination chart used in department. Oral manifestations of systemic diseases.

1. **Mouth Preparations for C.D. patients**

Minor surgical procedures required for new prosthetic patients. Alveoloplasty, torus removal, enlarged tuberosities, bony undercuts, frenectomies, minor soft tissue corrective procedures.

1. **Sequalae of C.D. wearing**:

Mechanism of tissue changes. Denture stomatitis, soft tissue hyperplasia as papillary hyperplasia, epulis fissuratum, atrophy of oral mucosa, bony resorption, pressure on mental foramen.

1. **Management of abused oral tissue**

Mucosal conditioning (i.e,. rest & massage) by physiotherapy and tissue conditioners. Muscle conditioning. Secondary surgical procedures required for soft tissue removal and extension of denture bearing area as vestibulopathy, ridge augmentation, implants.

1. **Primary Impression**

Objective of primary impression. Materials used for primary impressions, their indications and limitations. Method of primary impression.

1. **Theories of Secondary Impression**: -

Muco static theory: - Description of the theory (role of PASCAL’s law & physical forces), objectives of the theory, criticism on the theory. Materials used for the mucostatic impressions. Method & requirements of impression.

Muco-compressive theory: - Description of the theory, objectives of the theory, (role of atmospheric pressure and area coverage) criticism. Materials used for compressive impression. Methods and requirements for compressive impressions

Selective pressure theory: - Concept of stress bearing and non stress bearing areas. Description of the theory, objectives of the theory. Materials used for selective pressure impressions. Methods and requirement of selective pressure impressions.

Clinical application of three impressions in different oral conditions.

1. **Method of upper arch impression**:

Adjustment of special tray, peripheral seal development with low fusing compo, shape of the periphery according to the anatomy of the sulcus. Wash impression taking, marking of the post-dam area.

1. **Method of lower arch impression**: -

Adjustment of special tray, role of floor of the mouth on the shape and director of lingual flanges. Shape of the periphery according to the anatomy of the lower sulcus, wash impression method.

1. **Jaw Relation Record**: -

Types of jaw relations records which can be transferred on articulators. Significance of jaw relation records. Effects of incorrect vertical dimension record. Effects of incorrect centric relation record.

1. **Adjustment of Occlusal rims**: -

Check of base plates for comfort, retention and stability. Adjustments of upper occlusal rim for lip support and contour of the lip. Adjustments of the occlusal plane i.e. height of the upper rim. Adjustments of anterior and posterior occlusal plane with the help of Foxes plane.

1. **Vertical Dimension Record**: -

Significance of vertical dimension of lower face. Brief discussion about different methods to record vertical dimension. Detailed discussion of few methods commonly used in clinics as Willis’s method, Niswanger method, Esthetics, Comfort and Functions.

1. **Centric Relation Record**: -

Significance of centric relation record. Detailed discussion of different method to record centric relation included both physiological and mechanical methods.

1. **Eccentric Record**: -

Types of eccentric records which are significant and can be transferred to articulators, method of recording eccentric records.

1. **Face Bow Records**: -

Description of face-bows, function of face -bow. Types of face- bow, their significance and uses. Methods to take face- bow record. Method to transfer face bow record to articulator.

1. **Occlusion of C.D**.: -

Concept of occlusion in natural dentition and artificial dentition. Requirements of artificial occlusion in CD. Different theories of occlusion in natural and artificial occlusion.

1. **Factors of Occlusion**: -

Definition of factors of occlusion. Detailed discussion of individual factor. Effects and role of different factors in occlusion.

1. **Monoplane Occlusion**: -

Theory of monoplane occlusion. Its advantages and disadvantages. Application of monoplane occlusion in different clinical situations. Methods to develop monoplane occlusion in complete dentures.

1. **Bilateral Balanced Occlusion**: -

Theory of bilateral balance occlusion in complete dentures. Advantages of balance occlusion. Objections of balance occlusion. Clinical application of balance occlusion. Method & requirements to develop balanced occlusion in C.D.

1. **Lingualized Occlusion**:

Theory of lingualized occlusion in C.D. Advantages & disadvantages of lingualized occlusion. Clinical application of lingualized occlusion. Method & requirements to produce lingualized occlusion in complete dentures.

1. **Functionally generated occlusion**: -

Theory of functionally generated occlusion in complete & partial dentures. Advantages & disadvantages of functional occlusion. Clinical application of functional occlusion. Methods & requirements for development of functionally generated occlusion in complete dentures.

1. **Phonetics:** -

Factors of speech. Mechanism of speech production. Types of speech sounds. Role of dentures in phonetics.

1. **Trial of C.D**.: -

Checking of comfort, retention & stability of both dentures. Check of lip line, lip contour, smile line, check of peripheral ex tensions; check of occlusal plane of lower denture, check of vertical dimension, check of centric relation, check of phonetics and approval of esthetics by the patient.

1. **Occlusal Adjustment**: -

Remounting of finished dentures, adjustment of occlusion by spot grinding. Adjustment of dentures occlusion on lateral and protrusive movements. Rules & method of occlusal adjustments.

1. **Insertion & complaints of C.D.:** -

Checking of finished dentures before insertion, verification of all steps of construction. General complaints of patient immediately after insertion and after few days of wearing and their management. Instructions to patients.

1. **Complications of C.D. use:** -

Complications arise after prolong use of C.D. and their managements, denture stomatitis, midline fractures.

1. **Relining & Rebasing**: -

Difference b/w relining & rebasing of C.D Indications of relining & rebasing. Different methods and materials for relining & rebasing.

**Special Topics**

1. **Complete Denture Design: -**

Detail discussion of complete denture design based on different concepts, especially bone support concept, biometric guidelines concept and neutral zone concept. Detail discussion of indications and limitations of each design. Clinical application of these concepts. Material and methods required to record neutral zone in complete denture patients.

2. **Immediate Dentures: -**

Definition of Immediate dentures. Advantages, indications, disadvantages & contraindications of Immediate dentures. Steps and procedures required for Immediate dentures. Follow up of Immediate dentures.

3. **Tooth support dentures**: -

Definition of Over dentures. Different types of Over dentures. Indications & contra indications of Over dentures. Advantages and disadvantages of Over dentures. Means of retention for Over dentures, clinical steps and laboratory procedures for Over dentures.

4. **Coping Dentures: -**

Definition of Coping dentures. Indications and advantage of Coping dentures, disadvantages of Coping dentures. Different methods to Coping dentures.

5. **Implant Prosthodontics**

Definition of Implants. Advantages and disadvantages of Implants. Indications & contraindications of Implants. Types of Implants. Definition and difference of fibro integration, ossiointegration & bio integration**.**

Different types of prostheses for implant patients. Role of bone in selection of prosthesis

7. **Maxillofacial prosthetics: -**

Definition of Maxillofacial prosthetics. Types of Maxillofacial prostheses. Management of maxillofacial patients by different prostheses in different clinical

situations.

8. **Splints & Stents**: -

Definition and difference of splints and stents. Discussion on commonly used splints and stents in TMJ and oral surgery.

**CLINICAL REQUIRMENTS**

Every student has to attained the required demonstration and complete the 5 cases of complete denture patient.

**Demonstrations**

|  |  |
| --- | --- |
| **CLINICAL DEMONSTRATION** | **LAB. DEMONSTRATION** |
| Patient Examination | Model pouring |
| Treatment Planning | Special tray fabrication |
| Primary Impression recording | Wax-up of base plate |
| Secondary impression recording | Occlusal rim fabrication |
| Jaw relation record | articulation |
| Trial | Set up of Teeth |
| Insertion of denture | Processing of denture |

**Mode of Information Transfer**

Lectures

Chair side Demonstrations

Small Group Discussion

Self Study

Clinical and Lab. Work Supervision

**Assessment Tools**

Written assessment: - SAQ, MCQs.

Oral Examination

Case Presentations

Continuous assessment in clinics and laboratory, OSPE