

Department of Prosthodontics



Study Guide **2nd Year BDS**

College of Dentistry
Sharif Medical and Dental College



PREFACE

In the field of dentistry, the prosthodontics is related to providing solutions to patients suffering from partial or complete edentulism. These dental conditions are diverse individual to individual. The education and training in prosthodontic is important to train future dentist for treatment complex dental conditions and restoring optimum function and esthetics. This study guide will help the students in learning the basics of this subject.

Dr. Uzma Shahid

BDS, MCPS

HOD/Associate Professor of Prosthodontics



VISION & MISSION OF UHS

Qualitative and Quantitative Revolution in Medical Education and Research through Evolution and thereby improve Health Care delivery to Populace.

UHS shall be innovative global center of excellence in learning and research, supporting a community of scholars and professionals committed to serving society, promoting the development of students to reach their true potential in becoming competent, ethical, caring, and inquiring health professionals for the benefit of the country and the wider world.

MISSION OF SMDC

Sharif Medical & Dental College is dedicated to best serve the nation through preservation and dissemination of advanced knowledge and educating the students by latest trends in learning and research reaching levels pars excellence.

The Institution is committed to provide standardized quality medical education to its students by inculcating professional knowledge, skills and responsibilities in them with the aim of:

- Preparing them as modern physicians having initiative to act as future leaders in their respective fields and becoming lifelong learners.
- Encouraging the spirit of critical thinking through research and publication.
- Building up an understanding of the ethical values compatible with our religion, culture and social norms.
- Developing a sense of being responsible citizens of the society possessing professional competence and instilling in them the values of hard work and dedication thus preparing them to be accountable to the stakeholders and the state.

The Institution is devoted to keep abreast its faculty with the latest trends in Medical Education encompassing teaching/learning methodologies, assessment tools, research opportunities and professionalism to facilitate their professional development, competencies, and commitment towards continues learning.

Our patient-centered mission is achieved by outstanding medical care & services in professional practice with due emphasis and focus on our local health needs.

Our mission further elaborates upon establishing academic and research facilities in areas of local demand under global gold standards and leading advancement in research, education & patient care.

VISION OF SMDC

To be recognized for the provision of a safe and functional environment conducive to collaborative teaching & learning, comfortable working atmosphere, and conducting world class research through professionalism and excellence.



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INTRODUCTION TO PRECLINICAL PROSTHODONTICS

Preclinical Prosthodontics is taught as a practical separately and with the subject of Science of Dental Materials. Preclinical exercises are included in preclinical quota of prosthodontics. From these pre-clinical exercise students will be benefitted in knowledge related to fundamental of prosthodontics. Learning of the Students will be in the laboratory setting. The students will be learning different aspects of acrylic denture fabrication, and through practice they will get the opportunity to develop working skills in relevant tasks through various preclinical exercises, as mentioned in their logbooks. At this stage the students are not learning the patient-care, however a small portion of clinical work will still be covered through student-to-student clinical interaction. These working opportunities in prosthodontic laboratory and prosthodontic clinics will help to train the students for required capabilities. After successful completion of second year B.D.S, students will be familiar with basics of prosthodontic laboratory work, and it will be helpful for them in the following two clinical years of their undergraduate studies.



PLANNED TEACHING ACTIVITIES

The following teaching and learning strategies will be adopted to administer the course of Preclinical Prosthodontics

1. Large Group Interactive Sessions

Some of the theoretical portion of basics of prosthodontic will be covered in lectures. Along with power point presentations videos of lab procedures will be shown to students.

2. Laboratory Demonstrations:

Most of the content will be covered in a laboratory setting for which appropriate practical/laboratory demonstration sessions will be organized. Students will be facilitated by demonstrators with or without supervision of the senior faculty for completing the preclinical exercises. Any amount of lab work will also be facilitated by laboratory technicians for covering some of the technically challenging tasks.

3. Clinical/Chairside Demonstrations:

These will be within the Department of Prosthodontics by concerned demonstrators. In clinical sessions will be limited to history and examination portion. The students will observe impressions making procedure. Students will get a chance to handle the materials in a clinical setting and will also start developing communication skills for active patient care.

4. DOPS (Direct Observation of Procedural Skills):

For assessing the competency of students in various clinical and laboratory steps involved in prosthesis fabrication. For this purpose, specific criteria have been developed as mentioned in student logbooks. Teaching Faculty The following teaching faculty of Department of Prosthodontics shall be responsible for conducting various teaching sessions and assessing student performance in given exercises. The log books will be graded for their practical performance.

5. Videos

Some laboratory procedures will be introduced to the students on videos.

TRAINING PROGRAM FOR LECTURES

Some of the course content is covered by lectures.

Sr. No.	Course content	
1.	Introduction to Prosthodontics	Students will be able <ul style="list-style-type: none"> • to define prosthodontics. • To describe different branches of prosthodontic treatment. • Able to describe the basic terminology related to prosthodontics
2.	Basics of removable prosthodontics treatment.	Students will be able <ul style="list-style-type: none"> • To define removable prosthodontic treatment • Able to describe different types of removable prosthesis. • Able to describe the advantages and disadvantages of removable prosthodontic treatment.
3.	Basics of partial dentures classification.	Students will be able to <ul style="list-style-type: none"> • Describe need for classification of partially edentulous arches • Describe the Kennedy's Classification for partially edentulous arches. • Identify the class of partially edentulous arch.
4.	Components of partial dentures	Students will be able to <ul style="list-style-type: none"> • Enumerate components of partial denture. • Define different parts of partial dentures. • Identify different parts of partial dentures.
5.	Basics of dental Occlusion	Students will be able to <ul style="list-style-type: none"> • Define occlusion • Define centric occlusion • Define eccentric occlusion. • Define overjet and overbite • Describe the mandibular movements.
6.	Cases of prosthodontics	Partial and full denture cases
7.	Cases of prosthodontics	Maxillofacial prosthesis
8.	Cases of prosthodontics	Implant retained prosthesis

LEARNING OBJECTIVES FOR PRECLINICAL PROSTHODONTICS

	Exercise	Specific Learning Outcomes
1.	Introduction to course	<p>At the end of the course the students will able to</p> <p>Introduction to the course</p> <p>Summarize the scope of Preclinical Prosthodontics</p> <p>Name the various instruments and equipment to be used</p> <p>Identify the instruments and equipment to be used</p> <p>Arrange for required armamentarium</p>
1.	Plaster slab	<ul style="list-style-type: none"> • Differentiate between hard and soft plaster • Dispense appropriate amount of plaster for required work • Manipulate the given plaster with correct volume of water • Achieve a desired consistency of the mixture • Fabricate a plaster slab of given dimensions • Trim the slab upto required size
2.	Pouring of mould	<ul style="list-style-type: none"> • Dispense appropriate quantity of stone into mixing bowl • Correctly mix the contents with a plaster spatula • Achieve a uniformly creamy mixture • Correctly pour the ideal moulds by tapping or over a vibrator • Allows sufficient time for plaster to harden/set • Recover the casts without any surface voids or bubble
3.	Making of cast	<ul style="list-style-type: none"> • Dispense, manipulate and mix the given plaster/stone upto required consistency • Pour the impressions by properly tapping or using a vibrator to remove air bubbles • Allows sufficient time for the plaster/stone to set • Dispense, manipulate and mix the soft plaster for base formation • Formed base is of adequate size and thickness Carefully retrieve the cast without fracturing any tooth • Inspect the cast surface for any voids and bubbles • Maintain adequate thickness of the cast even in thinner sections
4.	Trimming of cast	<ul style="list-style-type: none"> • Operate the cast trimmer as per given instructions • Outline the procedure for trimming in correct sequence • Trim the cast in correct sequence • Maintain a land area all around the cast (no damage to teeth or sulcus areas) • Maintain occlusal surface parallel to the floor

5.	Fabrication of acrylic partial denture. anterior	<ul style="list-style-type: none"> • Identify various parts of acrylic partial denture • Classify the given casts according to Kennedy's classification • Identify various parts of the cast • Identify various anatomical landmarks on the cast • Form well-adapted clasps on selected abutment teeth • Prepare a wax pattern of uniform thickness on the given cast • Fabricate the bite rims as required • Arrange the anterior artificial teeth in the given edentulous segment at correct occlusal level. • Perform the dewaxing procedure independently • Apply an adequate coat of separating agent on the plaster surfaces • Dispense and manipulate powder and liquid monomer in correct ratio into the mixing vessel • Properly mix the contents to reach desired consistency (not too liquid and not too dry) • Allow time for dough stage to reach before next steps • Pack the acrylic mixture at correct (dough) stage • Apply correct pressure during packing • Removes excess flash material from borders of the flask • Allow time for initial bench cure before placing in water bath • Follow the curing protocol and time it properly Follow the cooling regimen at the end of curing cyclePerform the deflasking procedure independently or under supervision • Remove the plaster mold from within the flask Cut away the plaster mold to retrieve the processed denture without any damage to it • Finish the processed denture by trimming away the excess material either on lathe machine or by using electric micromotor • Maintain uniformly thick borders of the denture • Maintain rounded shape of borders/edges • Produce proper polish of the denture maintaining smooth and shiny surface without any damage during the procedure
6.	Formation of clasp	<ul style="list-style-type: none"> • Use the correct pliers for wire bending • Demonstrate the correct grip of pliers • Perform straightening of given wire pieces beforehand • Bend the wire into exact shape and dimensions without any help
7.	Fabrication of posterior partial denture	<ul style="list-style-type: none"> • Classify the given casts according to Kennedy's classification • Identify various anatomical landmarks on the cast • Form well-adapted clasps on selected abutment teeth

		<ul style="list-style-type: none"> • Prepare a wax pattern of uniform thickness on the given cast • Fabricate the bite rims as required • Mount the casts on plain articulator without any help • Arrange the posterior artificial teeth in the given edentulous segment at correct occlusal level and correct angulations • Maintain contact with adjacent and opposing teeth • Maintain the arch shape during tooth setup • Perform the flasking procedure independently • Maintain a smooth surface finish on plaster without any undercuts • Perform the dewaxing procedure independently • Apply an adequate coat of separating agent on the plaster surfaces • Dispense and manipulate powder and liquid monomer in correct ratio into the mixing vessel • Properly mix the contents to reach desired consistency (not too liquid and not too dry) • Allow time for dough stage to reach before next steps • Pack the acrylic mixture at correct (dough) stage • Apply correct pressure during packing • Removes excess flash material from borders of the flask • Allow time for initial bench cure before placing in water bath • Follow the curing protocol and time it properly Follow the cooling regimen at the end of curing cyclePerform the deflasking procedure independently or under supervision • Remove the plaster mold from within the flask Cut away the plaster mold to retrieve the processed denture without any damage to it • Finish the processed denture by trimming away the excess material either on lathe machine or by using electric micromotor • Maintain uniformly thick borders of the denture • Maintain rounded shape of borders/edges • Produce proper polish of the denture maintaining smooth and shiny surface without any damage during the procedure
8.	Alginate impression of plaster model	<ul style="list-style-type: none"> • Selection of appropriate impression tray. • Dispense the appropriate quantity of alginate powder and water ratio. • Appropriate consistency of mix. • Appropriate loading of impression tray. • Appropriate placement of impression tray on model. • Removal of impression on right time.



LIST OF PRACTICALS

To meet the main learning outcomes of prosthodontics, various preclinical exercises have been designed and students will be required to complete the given quota of exercises in order to qualify for sitting in annual professional examination.

Exercises Quota

1. Plaster slab formation
2. Ideal mold pouring (upper and lower arch)
3. Clasp making (on molars, premolars and canines)
4. Alginate model impressions (upper and lower arch)
5. Cast fabrication
6. Partial denture for anterior missing teeth
7. Advanced wire bending
8. Partial denture posterior missing teeth



LIST OF FACULTY

Name	Designation	Email
Dr. Uzma Shahid	Associate Professor	uzmashahid112@gmail.com
Dr. Hamna Khawaja	Assistant Professor	Hamnakhawaja10@gmail.com
Dr. Sajjad Ahmed	Registrar	Sajjaddoc123.sa@gmail.com
Dr. Amna Jalal	Demonstrator	Amna_jalal_@hotmail.com
Dr. Waqas Ejaz	Demonstrator	Waqas_ejaz@live.com



RECOMMENDED READINGS

A) Complete Denture and partial Prosthodontics

- a. Boucher,s Prosthodontic treatment for edentulous Patients by Dicky and Zarb, .
- b. Atlas of complete dentures by John Hobkirk
- c. Syllabus of complete dentures by Heartwell and Rahn.
- d. Immediate and Replacement dentures by Anderson and Storer.
- e. Fenn’s Clinical dental Prosthodontics by MacCraken.
- f. Complete Dentures Prosthodontics by Basker and Devenpot.

B) Miscellaneous

- a. Atlas of implantology by Norman Kranin.
- b. Dental laboratory techniques by Morrow, Rudd and Eissman.
- c. Occlusion by Ramfjord and Ash.
- d. Management of Temporomandibular Disorders by Okeson.