SEQUENCE:

SDS Course 421 is an advanced didactic & clinical removable prosthodontic course taught in the fourth year of Dental College, King Saud University.

PRE-REQUISITE: SDS 321

COURSE DESCRIPTION:

This course is specially designed to provide an opportunity for gaining better & finer knowledge and skill in prosthodontic services in the diagnosis, treatment planning, special treatment procedures and the insertion and post-insertion of partial, complete, immediate and transitional temporary dentures. Included are relining and rebasing procedures. This course has a didactic and a clinical component and the course is spread over the entire academic year i.e. 1st & 2nd academic terms. The didactic (lecture) component is covered in 16 sessions during the 1st half of the academic year. The lectures cover the theoretical background and the different modalities in prosthodontics. During the entire academic year there will be a weekly three-hour clinical session, with assistance from the college central dental laboratory.

CREDIT HOURS: 3 Credit Hours

→ One (1) credit hour: One (1) Hour lecture weekly for one semester
→ Two (2) credit hour: Three (3) Hour Clinical weekly for two semesters

COURSE OBJECTIVES:

1. The fourth year students will be reinforced and enriched in his/her previous experiences with the didactic and clinical disciplines of Removable Prosthodontic Sciences.

2. The students will be exposed to a finer insight into the examination, diagnosis, treatment planning and technical procedures in the art & science of Prosthodontics, while treating patients.

3. It is expected that after the completion of the course, the students will be in a better position to render a scientifically acceptable diagnosis, treatment planning and treatment for his/her patients, requiring removable complete, partial, and immediate...
dentures. It is also expected that the student will demonstrate proficient skills in his/her clinical treatment with minimum assistance from his/her instructor.

COURSE METHODOLOGY:

- The student will attend one clinical session and one lecture session in the first half of the year, and one clinical session in the second half of the year. The student is expected to still be present during all sessions or to be officially excused by his/her instructor.
- At the beginning of the year, the student will be assigned patients, and his assigned instructor will be responsible for the supervision of the student in his/her clinical session.
- References for each lecture will be submitted at the end of the lecture.

COURSE REQUIREMENTS:

1. Regularity, punctuality & adherence to college didactic & clinical regulation in treating patients must be strictly observed.
2. Your instructor will continually monitor your clinical skills, behavior and patient management.
3. A minimum of 8 arches must be completed, during the course of one (1) clinical session per week, by the end of the academic year.
4. Out of the total 8 minimum arches:
   - 4 arches - Removable Partial Dentures (RPD)
     - One RPD with altered cast impression technique
   - 2 arches - Complete Dentures (CD)
     - Patient Clinical Remount of Complete Dentures
   - 2 arches - Immediate, transitional or interim dentures or relining/ rebasing.
5. During the academic year, each student will have two continuous oral assessments during his clinical session. Before each clinical session each student should be prepared to understand the theoretical and clinical steps for the actual clinical procedures to be accomplished on his patient.
6. For each patient, the treatment plan form and the prostheses insertion visit (patient’s file) will require two signatures: the Instructor and the Course Director. The Instructor will also sign the Summary Form of Accomplishment of Clinical Procedures at the insertion visit. (See attachment 11, page 41)
7. At the end of each semester, each student must turn in his SDS Summary of Clinical Work Form, listing each patient work performed and initialed by his Instructor. Late turn-in of this form will result in a grade reduction.

CLINICAL PROTOCOL:

At the beginning of each clinical session, the instructor will evaluate the student’s theoretical knowledge part of the clinical procedure to be performed. The student must know the theoretical background of that procedure; otherwise he/she should not proceed.
1. A minimum of two patients will be assigned for each student at the first half of the year and their clinical treatment should be completed within the prescribed clinical time allotted, with mutual consent of the instructor.

2. The students should strive to perform the clinical procedures independently and take minimum assistance from the instructor in order to score a good grade.

3. The student should maintain discipline with regards to attending the clinic sessions on time, and is expected to maintain a good rapport with his patients, colleagues and instructor alike.

4. The student must always observe cleanliness and neatness in appearance and wear their proper clinical gowns during the clinical session; otherwise they will not be allowed to perform their clinical procedures.

5. It is the responsibility of the student to complete the patient's permanent file, indicating all the relevant information and to obtain the signature of the instructor. A temporary file is not acceptable. The patient's file, without the signature of the assigned instructor, shall be considered as an incomplete clinical procedure, and will affect your daily grade.

6. The dental laboratory authorization form should be filled out by the student and should be duly signed by the instructor. Good rapport with laboratory personnel should be maintained (Please see sample work sheet attachment # 9 & 10).

7. In a situation where the patient is unable to attend the clinic, the student should immediately notify their instructor. Students should attend the clinic session despite the absence of their patients.

8. Attendance rules and regulations are to be applied during both clinic and didactic sessions of this course.

9. All previously mentioned protocols are to be followed. Otherwise, the clinical grading will be affected negatively.

COURSE EVALUATION:

In order to receive a passing grade for course SDS 421, the student must pass both the didactic and the clinical parts separately.

I. Continuous Assessment (60%)

The percentage of grades will be as follows:

- One Continuous Assessment (1 Exam) = 10%
  (Mid – term written examination)
- Clinical Sessions (1st & 2nd Sem.) = 40% (20% each semester)
- Two Continuous Oral Assessments = 10%

Two Oral Continuous Examinations will be conducted by the Course Director during the clinical sessions and distributed as follows;

- 5% in the first semester
- 5% in the second semester
On each patient, the student is required to perform the following for diagnosis and treatment planning: (1) Radiographic evaluation, (2) Record history, (3) Clinical exam, (4) TMD Screening, (5) Diagnostic impressions and mounted casts, if requested, and (5) Formulate a written treatment plan.

The treatment plan is to be discussed with his instructor and the student will be evaluated accordingly (see SDS Clinical Evaluation and Procedure Form, Steps 1 and 2). Both the clinical Instructor and the Course Director will sign the final treatment plan form in the patient’s file.

Each student must fulfill the minimum treatment requirements of the course (8 units). The quality of treatment for each clinical step provided will be of primary concern in the assignment of the final grade.

The Clinical Evaluation Form will be strictly followed for each clinical procedure, and each step must be signed by the instructor during the session.

II. Final Examination (40%)

1. Final Didactic Exam at the end of the
   1. First Semester or Second Semester = 30%
2. Final Practical Examination
   2. Second Semester = 10%

COURSE OUTLINE:

LECTURE #1: SDS CLINICAL FORMS, CLINICAL PROTOCOL, LECTURE CONTENTS AND REFERENCES.

A discussion of the above items will include the following clinical forms.

1. SDS Clinical Evaluation Form
2. SDS TMD Screening History & Exam Form
3. SDS Exam/Diagnosis for RPD Patients
4. SDS Design & Design Modification for RPD’s
5. Worksheet: Interim and Transitional RPD’s
6. Sample Treatment Plan Form
7. Sample of Treatment Sequence for RPD Patients
8. Sample of Treatment Sequence for Complete Denture Patients
9. Sample Dental Laboratory Worksheet (for teeth set-up)
10. Sample Dental Laboratory Worksheet (for denture processing)
11. Summary Form of Accomplished Clinical Procedures

LECTURE #2: TEMPOROMANDIBULAR DISORDERS: SCREENING HISTORY & EXAM FOR ROUTINE DENTAL PATIENTS.

1. Definition
2. Origin, purpose, and advantages of TMD screening
3. TMD screening forms
4. How to perform a TMD screening history
5. Classic TMD symptoms
6. How to perform a TMD screening examination, including digital palpation
7. Relation of tension headaches to TMD
8. When to refer a patient to a TMD specialist
9. Each student will fill out his/her TMD self-screening history form
10. Each student will perform a TMD self-screening exam

References:

LECTURE #3: TREATMENT OF ABUSED AND PATHOLOGIC ORAL TISSUES.

a. Definition
b. Pathoses related to denture wearing.
   (1) Pseudo epitheliomatous hyperplasia (palatal papillary hyperplasia)
   (2) Denture induced stomatitis (DIS) (pressure, plaque, denture adhesives)
   (3) Denture induced hyperkeratosis
   (4) Epulis fissuratum
   (5) Excessive resilient (flabby) ridge mucosa
c. Pathoses not related to denture wearing
   1. Chemical injury (i.e. aspirin burn)
   2. Radiation mucositis
   3. Xerostomic mucositis
   4. Hyperkeratosis not under denture baring surface
   5. Smoker's mucositis
d. Etiology of denture induced stomatitis (DIS)
   (1) Systemic factors
      (a) Diabetes
      (b) Endocrine dysfunction
      (c) Nutritional deficiencies
      (d) Neoplasia
      (e) Xerostomia (medication, diabetes)
   (2) Local factors
      (a) Trauma
      (b) Continuous wear
      (c) Poor Oral Hygiene
      (d) Acrylic resin allergy
      (e) Candida albicans infection
e. Mechanisms making oral tissues susceptible to DIS
   (1) Increased epithelial permeability
   (2) Acidic environment
   (3) Aerobic environment
f. Treatment for abused oral tissues
   (1) Identify/eliminate etiology
   (2) Recondition the oral tissues with conditioners
      (a) Viscogel
      (b) Coe Comfort
      (c) Coe Soft
   (3) Surgical procedures
   (4) Leave dentures out of mouth
   (5) Reconstruct prosthesis with accuracy
   (6) Use antibacterial agents in denture (Chlorhexidine, Listerine, Nystatin topical)
   (7) Denture cleansers and denture cleaning methods

Reference:

LECTURE #4: MANAGEMENT OF REDUCED RESIDUAL ALVEOLAR RIDGES.

a. Definition
b. Oral aspects of aging (Zarb)
c. Etiology of atrophic bone resorption (Rahn)
   1. Local factors
   2. Systemic factors
d. General considerations for treatment planning
e. Intraoral assessment
   1. Direction of bone loss
   2. Biomechanical factors and associated problems
   3. Oral mucosa factors and associated problems
f. Preservation of the residual alveolar ridges
g. Patient management/treatment - Non-surgical methods and techniques
   1. Fundamental principles
   2. Philosophies for occlusal types/arrangement
   3. Patient education and reasonable expectations
h. Patient management - Surgical techniques
   1. Soft tissue surgical techniques
      (a) Vestibular extension procedures
      (b) Autogenous soft tissue overlay grafts
   2. Soft tissue surgical techniques for the partially edentulous mouth
      (Removable/Fixed)
   3. Hard tissue surgical techniques
      – Osseointegrated implants
         • Removable
         • Hybrid
         • Fixed
      – Osteotomy autogenous bone graft (mandibular)
         • Visor osteotomy
• Modified Visor osteotomy
• Interpositional bone graft
  – Alloplastic ridge augmentation graft
  • Hydroxyapatite alone
  • Hydroxyapatite in combination
  • Problems with use of hydroxyapatite

References:

LECTURE #5: PROSTHODONTIC TREATMENT PLANNING IN OLDER ADULTS.

1. Characteristics of the elderly patient:
   I. Age related changes.
      a. Sensory changes
      b. Cognitive changes
      c. Psychosocial aspects
   II. Oral Physiology and Aging.
      a. Salivary glands
      b. Oral Mucosa
      c. Oral motor function
      d. Oral sensory function

2. Factors influencing Prosthodontic Treatment Planning.

3. Objectives of Prosthodontic Treatment Planning.
   a. Partially edentulous patient
   b. Completely edentulous patient

4. Identification of Treatment Needs and Demands.
   a. Partially edentulous elderly
   b. Completely edentulous elderly

   I. Partially edentulous patient
      a. Periodontal situation
      b. Caries activity
      c. Residual ridge resorption
      d. Functional problems of masticatory system
   II. Complete denture wearer


7. Choice of Prosthodontic Treatment Modalities.
   a. Fixed Partial Dentures and the elderly
   b. Removable Partial Dentures and the elderly
   c. Overdentures and the elderly
   d. Complete dentures and the elderly
   a. Patient’s factors
   b. Prosthodontist’s factors
10. Post Treatment Phase - Aids for maintaining adequate oral hygiene.

LECTURE #6: PATIENT REQUIRING A SINGLE COMPLETE DENTURE.

1. General considerations in construction & delivery
2. Single complete "denture syndrome"
   1. Definition
   2. Characteristics
   3. Preventive measures
3. Minimizing occlusal forces on the denture foundation
   a. Complicating factors for the single mandibular complete denture
   b. Favorable situations for the mandibular complete denture
   c. Special considerations for maxillomandibular jaw relations
   d. Indications for modifying the opposing mandibular natural/artificial occlusion (Removable/Fixed)
   e. Occlusal adjustment - perfecting the plane of occlusion of the opposing natural teeth: Two methods (one using an occlusal metal template) (Removable/Fixed)
   f. Improving the occlusal plane of the opposing "mesially tilted molar" (Removable/Fixed)
   g. establishing the vertical and horizontal overlap
   h. Occlusal requirements of the single complete denture
   i. Artificial posterior teeth selection
   j. Placement (insertion) visit

Reference:

LECTURE 7: PROSTHODONTICS AND THE PERIODONTIUM.

1. Etiology of periodontal disease, complicating factors
2. Preparatory aspects of prosthodontic therapy.
3. Role of prostheses in progression of periodontal disease.
4. Preventive design of restorations and prostheses.
5. Adjunctive procedures.

References:
• Pameijer JN. Periodontal and occlusal factors in crown and bridge procedures. Amsterdam: ACPC, 1985;2:17-25
LECTURE #8: CONCEPT OF NEUTRAL ZONE.

1. Definition of neutral zone
2. Importance of neutral zone
3. Muscles involved in the neutral zone
4. Methods and techniques for location of neutral zone
5. Impression the polished surfaces

References:

LECTURE #9: ESTHETICS AND PHONETICS IN PROSTHODONTICS.

DENTAL ESTHETICS

Four Main Factors in Dental Esthetics.
I. Size of anterior teeth
II. Form of anterior teeth
III. Color/Shade of teeth
IV. Arrangement of anterior teeth

I. Size of Anterior Teeth.
   i. Face size
   ii. Maxillary arch size
   iii. Incisive papilla/canine eminence/buccal frenai
   iv. Class I, II, III jaw relations
   v. Residual ridge contour
   vi. Interridge space
   vii. High lip line
   viii. Teeth visibility with "resting lips"
   ix. Teeth-lip relation with phonetic sounds

II. Anterior Teeth Outline Form.
   i. Frontal outline form of face
   ii. Profile outline form of face
   iii. Sex of individual
   iv. Age of individual

III. Color and Shade of teeth.
   i. Definition
   ii. Hue, Chroma (Saturation), Brilliance
   iii. Youth versus Aging Individuals
   iv. Light Source
   v. Verifying the Color/Shade Selection
   vi. Significance of the Complimentary Color of Yellow (Blue)
   vii. Second Opinion

IV. Arrangement of Anterior Teeth.
i. Age factors  
ii. Sex factors  
iii. Personality factors  
iv. Personal grooming (Cosmetic) factor  
v. Dentist’s artistic reflection, including dentist’s esthetic refinements  

**DENTAL PHONETICS**

I. Definition  
II. Relationship of speech sounds to lips, tongue, teeth  
III. Articulation valves (Controls)  
   1. Upper - Lower lip sounds ("b", "p", "m")  
   2. Lower lip - Upper incisor sounds ("f", "v")  
   3. Various types of tongue and teeth and/or rugae relations (including velar and nasal sounds)  
      a. Tongue - Teeth Sounds ("the", this, these, those")  
      b. Tongue - Rugae Sounds ("t", "d", "z")  
      c. Tongue - Rugae Nasal Sounds ("n")  
      d. Upper/Lower Incisor - Tongue - Rugae Sounds ("s", sh")  
   4. Palatal - Tongue Sounds ("year", "onion")  
   5. Velar - Tongue Sounds ("k", "g")  

**THE "1 - 2 - 3 - 4" RULE FOR ANTERIOR TEETH POSITIONING.**  
1. Anatomic Landmarks and Biomechanical Principles  
2. Phonetic Consideration with Upper Incisor Teeth  
3. Esthetic Considerations and "Smile Line"  
4. Phonetic considerations with lower incisor teeth  
5. Vertical Dimension Considerations

**References:**  

**LECTURE #10: CLINICAL AND LABORATORY TECHNIQUES IN RELINING AND REBASING.**

I. **General Considerations**  
   a. Definition  
      1. Relining  
      2. Rebasing  
   b. Indications for relining complete dentures and removable partial dentures  
   c. Contraindications for relining - Indications for remaking complete dentures  
   d. Interviewing the patient and history taking  
   e. Clinical examination
1. Extra-oral examination
2. TMD screening examination
3. Intraoral examination
4. Complete dentures: out-of-the-mouth exam
5. Complete dentures: in-the-mouth exam
f. Treatment planning
   1. Initial treatment, including the need for tissue conditioning
   2. Final treatment plan

II. Clinical Considerations
   a. Clinical techniques for relining complete dentures
      1. Open mouth impression technique
      2. Closed mouth impression technique
      3. Functional impression technique
   b. Clinical procedures for relining complete dentures using the "closed mouth impression technique." A step-by-step method
   c. Placement (insertion) visit of the relined denture (See next section for laboratory procedures)
      1. Perfecting the fit
      2. Clinical patient remount in centric relation

III. Dental Laboratory Procedures
   a. Advantages/disadvantages of heat cured resins versus autopolymerizing resins
   b. Laboratory methods for processing the relined complete denture
      1. Articulator method
      2. Reline jig method
      3. Denture flask method
      4. Laboratory relining complete dentures using the reline jig method. A step-by-step demonstration

References:

LECTURE 11: DUPLICATION OF COMPLETE DENTURES: CLINICAL / LABORATORY PHASES

a. Definition/Indications
   1. Permanent duplicate complete denture
   2. Temporary duplicate complete denture
b. Methods/technique of fabrication
   1. Modified denture flask method (Brewer, Morrow, Nassif)
   2. Pour resin flask method (Boos, Carpenter)
3. Cup flask method (Wagner)
   c. Modified denture flask method - Step-by-step procedures
   d. Problem areas in fabrication and solutions

References:

LECTURE 12: NEW DEVELOPMENTS IN PROSTHODONTIC MATERIALS INCLUDING ADVERSE REACTION AND WEAR OF MATERIALS.

- Occupational health problems, dermatoses, non-dermatologic
- Adverse general patient reactions
- Specific adverse effects: pulpal response, periodontal tissues
- Wear of material

References:

LECTURE 13: OVERDENTURES I

a. Rationale
b. Advantages
c. Disadvantages
d. Indications, contra-indications

References:
- Overdentures Made Easy by Preiskel, Chapter 1, pp. 11-20.
- Overdentures By: A. Brewer & R. Morrow, 2nd ed. Chapter 1, pp. 3-11 and Chapter 2, pp. 12-14

LECTURE 14: OVERDENTURES II

a. Examination
   i. Visual
   ii. Digital
   iii. Radiographic
b. Case selection and abutment selection
c. Treatment plan

Reference:
- Overdentures Made Easy by Preiskel, Chapter 2, pp. 21-43

LECTURE 15: OVERDENTURES III

a. Clinical procedures
b. Impression techniques
   i. Direct technique with Duralay
   ii. Indirect technique

c. for abutments
d. Post-insertion-maintenance phase

Reference:
• Overdentures Made Easy By: Preiskel, Chapter 3, pp.45-65
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