DEN6460C Prosthodontic Treatment of the Edentulous Patient

Spring 2021

Course Description:

Art and science of the treatment of edentulous patients. Knowledge and techniques required to treat patients with a minimum of complications both physiological and psychological. Knowledge and technical skills (clinical and laboratory) required in the diagnosis and treatment of edentulous patients.

I. General Information

Course Director:

Course Director: Maria Lucia Aguilar DDS, MSD, MS CI
Office: MAGUILAR@dental.ufl.edu
Phone: (352) 273-6917
Course Credits: 2
Semester: Spring

Contributing Faculty

David Barnes, DDS. (352) 273-7954 DBARNES@dental.ufl.edu
Luisa Echeto DDS, MS, FACP (352) 273-6907 LECHETO@dental.ufl.edu
Josephine Esquivel-Upshaw DDS. (352) 273-5850 JESQUIVEL@dental.ufl.edu
Arthur Nimmo DDS, MS, FACP (352) 273-5850 ANIMMO@dental.ufl.edu
Margarete C Ribeiro Dasilva DDS (352) 273-5850 mdasilva@dental.ufl.edu
Carlos Soucy DDS, MS (352) 273-5850 CSoucy@dental.ufl.edu
Monica Fernandez DDS, MS (352) 273-95-04 MFernaddez@dental.ufl.edu

Support Staff

Michelle R Watson (352) 273-5830 MWATSON@dental.ufl.edu TA / Grade Administrator
II. Course Goals

In this course you will learn to recognize the various problems that an edentulous patient, or a partially edentulous patient diagnosed to become edentulous, may have. You will learn laboratory and clinical procedures required to fabricate a complete denture.

III. Course Overview

Information will be presented concerning the understanding of the partially and/or totally edentulous patient. The biomechanics and biological condition of edentulous patients lead us to recognize different classification categories for complete edentulous patients, which will be presented. Diagnosis and treatment planning for patients with some teeth remaining or totally edentulous patients will also be presented. Effects of nutrition, aging, and long-term complete denture use, also improving the patient’s denture foundation will be presented.

As part of this preclinical course, you will need to watch the clinical videos that are posted on ECO for each clinical visit in the fabrication of complete denture. Final exam and quizzes will include questions from these videos. Also, to be exposed to the clinical scenarios we strongly suggest observing complete dentures in the TEAM clinics on their own time.

You will learn to understand biological consideration of impression making and recording jaw relations. Also, you will learn clinical and laboratory procedures related to the fabrication of complete dentures. This will include primary and final impressions, preparing custom impression trays, record base and occlusion rims. You will receive mounted casts to place in the articulator. Understanding and arranging teeth will be an important part of this section. You will thus increase your ability to make a diagnosis and treatment plan for the rehabilitation of such patients. You will learn to arrange denture teeth in a monoplane occlusion. You will arrange the posterior teeth for the final practical exam.

A complete dentures course is incomplete without information about the materials used in the fabrication of dentures and their properties. The lectures will cover biomaterials used in complete dentures. The final written exam will be on all topics.

IV. Course Outline

A. Introduction and Overview of Complete Denture Prosthodontics.

1. Partially edentulous in one or both arches
2. Edentulous patient in both arches
3. Edentulous patient without prior denture experience
4. Edentulous patient with positive prior experience
5. Edentulous patient with negative prior experience
B. Biomechanics of Edentulous Patients. Tissue response to complete dentures.

1. Mechanics of Tooth in Mastication
2. Mechanics of Complete Dentures in Mastication
3. Function and Parafunctional Consideration
4. Centric Relation, Centric Occlusion

C. Classification System for Complete Edentulism based on many factors.

1. Type I, most favorable, residual bone height measured at lowest level of bridge is 21mm or greater
2. Type II, residual bone height is at least 16-20mm height
3. Type III, residual alveolar bone height is 11-15mm measured at lowest level of vertical height of the edentulous ridge
4. Type IV, residual bone height is about 10mm or less at lowest area of edentulous ridge

D. Diagnosis and treatment planning for edentulous and nearly edentulous patients.

1. The patient's perspective
2. Medical and mental health
3. Radiographic and digital evaluation
4. Soft and hard tissue examination
5. Morphology of the ridges, muscle attachment, and maxillary and mandibular relationship.

E. Improving the patient's denture foundation and ridge relations.

1. Non-surgical methods
2. Surgical methods

F. Effects of nutrition, aging, and wearing complete dentures for a long term on edentulous ridges.

1. Nutritional needs and status of elderly patients
2. Dietary management of elderly patients when teeth are extracted
3. The impact of age on the edentulous mouth
4. Direct effect of wearing dentures: Denture stomatitis, Hyperplasia, Burning syndrome, etc…

G. Biological considerations of maxillary and mandibular impressions of edentulous patients.

1. Anatomical consideration
2. Principles and objectives of impression making and techniques

H. Biological considerations in jaw relations and jaw movements.
1. Classification of jaw relations
2. Movements of the mandible
3. Anatomy and physiology of jaw relations
4. Horizontal jaw relations

I. The recording base and occlusion rims and relating the patients to the articulator.

1. Introduction to articulators
2. Arcon and non-arcon articulator

J. Selecting artificial teeth for edentulous patients.

1. Clinical and technical considerations in anterior tooth selection
2. Posterior tooth selection

K. Arranging teeth for complete denture occlusion

1. Occlusal schemes for complete denture occlusion
2. Occlusal modification and adjusting the working and balancing contacts

L. Try-in appointment

1. Speech consideration and their use in complete denture
2. Establishing the posterior palatal seal
3. Anatomy of natural appearance and facial expression
4. Concept of harmony with sex's personality and age of the patient

M. Waxing and processing the dentures

1. Waxing the polished surfaces
2. Material used for denture bases
3. Formations and preparation of the mold (flasking)
4. Remounting jig and remounting casts

N. Delivery of the complete dentures

1. Elimination of basal surface errors
2. Errors in occlusion and remounting the dentures
3. Oral hygiene with dentures
4. Twenty-four hour oral examination and treatment
O. Improving retention and stability of dentures (relining, rebasing and repair)

P. Concepts on complete denture retention

Q. Biomaterials

V. Course Material

Recommended Textbooks:


Required Manual:


Other resources:

1. Clinical Videos : Documents Section. 1 to 5 visits.

2. CD - UCLA & Ivoclar Complete denture CD available through the Department of Prosthodontics, D9-39-C.

Dental Lib Guide: http://guides.uflib.ufl.edu/dental

VI. Course Objectives

The fundamental knowledge and techniques required to treat fully edentulous patients with complete dentures with a minimum of complications are presented in this course through direct instruction (lecture) and psychomotor experiences (laboratory).

You will learn to apply biological knowledge in planning treatment for the restoration and reconstruction of the edentulous stomatognathic system by the prosthetic replacement of the missing teeth and their associated structures. You will design and construct laboratory procedures required to fabricate complete denture prostheses that will translate to your clinical patient care.
Concurrent with this course, you will observe third and fourth year students treating patients with complete dentures in the TEAMS Clinics. A special form is provided in the course manual. The procedures in this form should be observed and signed by a clinical faculty. As part of the course you will watch the clinical videos posted on ECO documents section for each visit of the clinical procedure in the fabrication of complete denture.

Learning Objectives:

A. Introduction and overview of Complete Denture Prosthodontics

1. Compile the information necessary for recognition of need for complete dentures.
2. Describe the combinations of complete denture, partial denture, or both in the same patient.

B. Biomechanics of edentulous patients and tissue response to complete dentures

1. Describe the mechanics of tooth support in mastication.
2. Describe the difference of natural teeth and complete dentures in mastication.
3. Define functional and parafunctional effects in complete denture patients.
4. Define centric relation and centric occlusion.
5. Identify functional and parafunctional activities and their effects on oral structure.
6. Describe changes in morphological face height and temporomandibular joints.
7. Explain individual behavior and adaptive responses to edentulism.

C. Classification System for Complete Edentulism

1. Describe the diagnostic criteria used for evaluation of edentulous patients.
2. Discuss the value of classification of edentulous patient.
3. Identify the effects of bone resorption in edentulous patients.
5. Describe 4 types of residual ridge morphology in maxilla.
6. Discuss muscle attachments in the mandible.
7. Recognize 3 different maxillary and mandibular relationships.

D. Diagnosis and treatment planning for edentulous and nearly edentulous patients

1. Compile the information necessary to evaluate an edentulous patient's physical, psychological, and oral health status.
2. Discuss possible treatment plan for patients with some remaining teeth.
3. Identify the importance of evaluation of existing dentures, soft tissue, hard tissue, and radiographs.
E. Improving the patient's denture foundation and ridge relations
   1. Describe the two methods of edentulous mouth preparation.
   2. Describe nonsurgical methods.
   3. Describe surgical methods.

F. Effects of nutrition, aging, and wearing long term complete denture on edentulous ridges
   1. Describe the direct effect of wearing removable prosthesis on an oral environment.
   2. Describe the interaction of prosthetic materials and oral environment.
   3. Describe factors predisposing to candida associated with denture stomatitis.
   4. Explain possible causes of burning mouth syndrome.
   5. Describe the importance of nutrition in edentulous patients.
   6. Identify the oral signs of nutrient deficiencies especially in edentulous patients.
   7. Describe nutrition guidelines for prosthodontic patients.

G. Biological consideration for maxillary and mandibular impressions of edentulous patients
   1. Describe anatomical landmark related to complete dentures.
   2. Discuss the principles and objectives of impression making.
   3. Describe preliminary impression technique.
   4. Describe the material and technique related to fabrication of custom trays.
   5. Describe procedures and techniques related to final impressions.

H. Biological considerations in jaw relations and jaw movement
   1. Describe classification of jaw relations.
   2. Discuss different movements of mandible.
   3. Describe anatomy and physiology of jaw relation and movements.
   4. Discuss techniques related to establishment of vertical and horizontal maxillary and mandibular relations for complete denture.

I. Fabrication of record base and occlusion rims and relating the patient to the articulator.
   1. Describe technique related to fabrication of recording base and occlusion rims.
   2. Explain how to relate the patients to the articulator and describe different techniques involved.
   3. Describe the different types of articulators. Arcon and no arcon articulators.

J. Selecting artificial teeth for edentulous patients
   1. Explain material used for prosthetic teeth.
   2. Describe different mold and shade available for using in removable dentures.
   3. Identify difference between anatomic, semi-anatomic, and monoplane denture teeth.

K. Arranging teeth
   1. Arranging anterior teeth in complete denture.
2. Arranging posterior teeth in complete denture, general consideration.
3. Describe the major difference between regular and lingualized occlusion.
4. Describe selective grinding and balancing the occlusion.
5. Describe occlusion for edentulous patient.

L. Try-in appointment
1. Describe speech consideration and its use in complete dentures.
2. Discuss the eccentric jaw relations.
3. Describe how to program the articulator to match with patients.
4. Describe the anatomy of natural appearance and facial expression.
5. Discuss the concept of harmony of denture teeth and patient gender, personality, and age.

M. Waxing and processing the dentures (flasking)
1. Describe waxing and processing technique.
2. Explain materials used for denture bases.
3. Explain necessary steps of flasking technique.

N. Insertion of dentures
1. Describe the reasons for the use of pressure indicating paste (PIP).
2. Describe necessary clinical remount technique for correcting errors of occlusion.
3. Explain the correction of occlusal errors in anatomical teeth and necessary steps for creating a bilateral balanced occlusion.
5. Describe the importance of adjustment of dentures after 24 hours and maintaining comfort and health of the oral cavity.

Q. Biomaterials
1. Describe types of denture materials based on the type of reaction.
2. Discuss stages of polymerization when powder and liquid are mixed using heat curing resin as example.
3. Understand the function of separating medium.
4. Discuss two heat curing protocols of denture base materials.
5. Discuss physical properties and significance of mechanical properties of denture materials.
6. Compare resin and porcelain denture teeth.
7. Discuss the process and materials used for denture repair.
8. Describe chemistry and manipulation of tissue conditioner and reline materials, and discuss potential problems of these materials.
VII. Course Competencies

This course teaches the following competencies in the "Competencies for the New Dental Graduate".

Domain I: Critical Thinking

1: Critical Thinking: Use critical thinking and problem-solving, including their use in the comprehensive care of patients, scientific inquiry and research methodology.

Domain II: Professionalism

6: Appropriate Referral Provide oral health care within the scope of general dentistry to include recognizing the complexity of patient treatment and identifying when referral is indicated.

Domain VI: Patient Care

A. Assessment, Diagnosis, and Treatment

12: Patient Assessment, Diagnosis, Treatment Planning and Informed Consent: Provide oral health care within the scope of general dentistry to include patient assessment, diagnosis, comprehensive treatment planning, prognosis, and informed consent.

B. Establishment and Maintenance of Oral Health

14: Assessment of Treatment Outcomes: Provide oral health care within the scope of general dentistry to evaluate the outcomes of treatment, recall strategies and prognosis.

15: Patient Management: Provide oral health care within the scope of general dentistry to patients in all stages of life.

18: Provide oral health care within the scope of general dentistry to include communicating and managing dental laboratory procedures in support of patient care.

19: Provide oral health care within the scope of general dentistry to include replacement of teeth including fixed, removable and dental implant prosthodontic therapies.

VIII. Evaluation

Students will be evaluated using the measures listed below. There will be seven quizzes given on Canvas during the course. One quiz grade will be dropped and the remaining quizzes will be averaged. There are no make-up quizzes.

There is no midterm practical psychomotor. The final practical exam will consist of arranging the posterior monoplane teeth in a timed exercise. Criterion-referenced evaluation forms are posted in the Canvas Modules. Course faculty will be available to review the evaluation forms when the articulators are returned, however, there will be no adjustment of the assigned grade except in case of clerical error.
The final written exam will consist of multiple-choice and true-false questions covering material from all lectures and the Javid syllabus.

Final grades will not be available until all checked items are returned and at least 60% of the class has completed the online course & faculty evaluations.

Grade Weights

**DIDACTIC PORTION:**
- Quizzes (lowest score to be dropped) = 50%
- Written final examination = 50%

**PSYCHOMOTOR PORTION:**
- Clinical videos/Professionalism = 10%
- Lab projects/forms = 45%
- Final Psychomotor examination = 45%

Students must pass EACH; the Didactic portion and the Psychomotor portion of the course by 72% TO PASS THIS COURSE.

FINAL COURSE GRADE WILL BE DETERMINED AFTER EACH PORTION HAS BEEN INDIVIDUALLY PASSED.

THE AVERAGE GRADE BETWEEN THE DIDACTIC PORTION AND THE PSYCHOMOTOR PORTION WILL BE YOUR FINAL GRADE

If a student receives an "E" grade, they must meet with the course director to schedule the retake of a written and/or practical examination.

Lectures and labs attendance, adherence to the Dress Code and Professional Conduct are Mandatory.

Unprofessional conduct, unexcused absence for any session and repeated tardiness will be tracked with professional variances. Students who fail to participate (unexcused absence) in any component or section of the examination will be awarded a “U” grade in the course and will be referred to the SPEC.
Working after the assigned working time is over, falsifying any documents or teeth arrangement, etc is a violation of the student honor code and will result in an automatic failing grade for the entire course, immediate referral to the SPEC and may result in other sanctions as well.

**NOTE:**

There will be no make-up quizzes

A missed examination will require a doctor's note and if excused, the make-up exam will be:

- either an essay or oral examination for written or station test
- the psychomotor make-up exam will be similar to the scheduled examination but may include different teeth and/or occlusal schemes.

The make-up examination must be scheduled within 2 business days of the missed exam or the student's return to school. The highest attainable grade on a missed exam is an 85%.

**Remediation:**

Students that receive an "E" grade in this course must meet with the course director and then schedule to take a written and/or a psychomotor remediation examination/s.

Students failing the course will be awarded an "E" grade, referred to the Student Performance Evaluation Committee (SPEC), and automatically placed on academic probation. The student must meet with the course director to develop a remediation plan within one week of receiving the failing final grade. The remediation activities are at the discretion of the course director. Faculty members are available to assist students in preparing for this examination, but the responsibility for learning the material resides with the student. The time and place of the remediation examination will be arranged individually. Please note that if the course director determines that the student failed the coursework to such an extent that remedial activities would be inadequate to attain an acceptable level of academic achievement in the course material, the course director can recommend that the student repeat the course as the remedial activity.

The grade required to pass the remediation program will be determined by the course director; however, the highest grade attainable in a remediated course is a remediated "D/R." Students failing to satisfactorily complete the remediation program will maintain the "E" grade and be referred to SPEC for consideration for dismissal or retracting. Re-enrollment will occur as soon as deemed feasible by the course director in concert with the Associate Dean for Education and the SPEC. The highest final grade attainable when repeating a course in its entirety is an "A." Students failing to satisfactorily complete a course at the second offering will be referred to SPEC for further evaluation and action. A failing grade awarded in any
course will remain on the permanent record. Any grade achieved after re-enrollment will be listed separately.

If a student receives an "E" grade in the course they must meet with the Course Director. A comprehensive written and/or practical exam will be provided. See Sections J & K, Remediation, of Administrative Practices section of the syllabus for more detailed information.

Honorlock will proctor your exams this semester. Honorlock is an online proctoring service that allows you to take your exam from the comfort of your home. You DO NOT need to create an account, download software or schedule an appointment in advance. Honorlock is available 24/7 and all that is needed is a computer, a working webcam, and a stable Internet connection. To get started, you will need Google Chrome and to download the Honorlock Chrome Extension. You can download the extension at www.honorlock.com/extension/install.

When you are ready to test, log into the LMS, go to your course, and click on your exam. Clicking Launch Proctoring will begin the Honorlock authentication process, where you will take a picture of yourself, show your ID, and complete a scan of your room. Honorlock will be recording your exam session by webcam as well as recording your screen. Honorlock also has an integrity algorithm that can detect search-engine use, so please do not attempt to search for answers, even if it's on a secondary device. Good luck! Honorlock support is available 24/7/365. If you encounter any issues, you may contact us by live chat, phone (844-243-2500), and/or email (support@honorlock.com. If you encounter issues within the LMS, you may contact Your School's Online Support Services team at their number.

IX. Administrative Practices

Administrative practices for all UFCD courses are universally applied. Exceptions to or deviations from these practices are stated in the individual syllabi by the course director. When not individually stated in the syllabus, course administrative practices default to those identified under "Course Policies" on the DMD Student Website:

https://dental.ufl.edu/education/dmd-program/course-polices/

X. Grade Scale

<table>
<thead>
<tr>
<th>Method</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
<td>100</td>
</tr>
<tr>
<td>Tolerance</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>0.5</td>
<td>(Final letter grades within this range will be rounded up.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>95 - 100</td>
</tr>
<tr>
<td>A-</td>
<td>90 - 95</td>
</tr>
<tr>
<td>B+</td>
<td>86 - 90</td>
</tr>
<tr>
<td>B</td>
<td>82 - 86</td>
</tr>
<tr>
<td>B-</td>
<td>80 - 82</td>
</tr>
<tr>
<td>C+</td>
<td>74 - 80</td>
</tr>
<tr>
<td>C</td>
<td>72 - 74</td>
</tr>
<tr>
<td>E</td>
<td>0 - 72</td>
</tr>
</tbody>
</table>