

DEN8290 Digital Dentures Fabrication

Spring 2021

Course Description:

This course reinforces the basic skills and foundation knowledge in removable prosthodontics and assists students in the use of CAD/CAM technologies for the fabrication of complete dentures when treating the edentulous patient.

I. General Information

Course Director:

Course Director: Monica Fernandez
Office:
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Phone: (352) 273-9504
Course Credits: 1
Semester: Spring

Contributing Faculty

Support Staff

Michelle Watson (352) 273-5830
TA / Grade Administrator

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II. Course Goals

The goals of this elective course are to reinforce the basic skills and foundation knowledge in removable prosthodontics and assist students in the use of CAD/CAM technologies for the fabrication of complete dentures when treating the edentulous patient.

III. Course Overview

This will be a blended course (online content (4 hours), 2 classes (60 minutes@), 6-8 clinical sessions (2-3 hrs @) and one presentation (60 minutes.)

Enrollment in this course is limited to students who have completed at least 1 complete conventional denture procedures and have current GPA of 3.0 or above for their work. Additionally, students would need to have a patient treatment planned for a C/C up to the preliminary impression stage.

Digital Complete Denture builds upon the knowledge and skills that were learned during DEN6460C Prosthodontic Treatment of the Edentulous Patient. The student's knowledge of the biomechanics and biological condition of edentulous patients and dental materials will be applied to the edentulous patient requiring complete dentures. You will learn to understand biological considerations of impression making and recording jaw relations using an Anatomical Measuring Device (AMD) and a Gothic Arch Tracing (GAT). Also, you will learn clinical and laboratory procedures related to the CAD/CAM fabrication of complete dentures. This will include primary and final impressions; digital previews of the teeth try-in and advanced teeth try-in procedures. Understanding digital teeth arrangement 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 evaluate and modify denture teeth arrangement in an advanced try-in protocol. You will arrange/evaluate teeth set-up and verify that the occlusal scheme is accurate and true to the records supplied. This course will also integrate basic science concepts into the treatment of the edentulous patient. From the information learned prior to and during this course the student will be able to diagnose, treatment plan and treat the uncomplicated edentulous prosthodontic patient.

The clinical sessions are fundamental to the course. During the clinical sessions the student will learn to apply the knowledge of edentulous patients, digital procedures, oral anatomy, biomechanical principles of jaw motion and dental material concepts to restore the stomatognathic system, assuring proper function and esthetics.

As part of the learning process, one educational objective of this module is to aid students to recognize and develop behaviors characteristic of the dental profession. These behaviors are conceptualized in terms of respect, communication skills, responsibility, self-awareness and self-evaluation. In addition to knowledge and skills development, these concepts will be emphasized throughout this course.

IV. Course Outline

Online Module

The online module will provide content and audiovisuals (4 hours).

Classes

Two classes sessions will be conducted to answer questions and prepare students for clinical patient care.

Clinical

Each step in the fabrication of the digital dentures will be evaluated individually following the Prosthodontics criteria and evaluation forms listed in Axium for complete denture visits and codes.

Case based presentation

Students must schedule and present the finalized case with the pictures of the pre-op through the final delivery day with the Course Director.

V. Course Material

The learning resources for this module include, but are not limited to:

Lectures and audiovisual materials;

Journal articles, handouts and other printed materials;

Reference materials including required and recommended textbooks;

Resource people including faculty, graduate students and other health-care providers;

Students will have access to Laboratory and Lecture handouts, criteria and evaluation sheets

VI. Course Objectives

Digital Dentures belong to a new technology using Computer-Aided Design (CAD) and Computer-Aided Manufacturing (CAM) to produce a complete denture. This new technology was developed as an alternative option to solve the range of problems inherent to conventional denture procedures. After some research and studies, CAD and CAM systems were developed to aid in the analysis and manufacture of dentures. Using this patented technology, dentures can be fabricated saving time by only needing to see the patient two or three times before dentures are delivered. The patient's first visit consists of records and impression making. Followed by an advanced try-in protocol, then, the delivery of the final denture to the patient.

The student must utilize outstanding organizational skills, demonstrate meticulous attention to detail and maintain intense focus, in order to achieve positive laboratory and clinical outcomes. Upon completion of this Module the dental student should be able to:

1. Perform clinically acceptable standards and principles of CAD/CAM for complete dentures utilized in the treatment of the uncomplicated edentulous prosthodontic patient in each patient visit.
2. Gather diagnostic information, diagnose and treatment plan the uncomplicated edentulous patients.
3. Sequence for a digital denture fabrication using standardized clinical and the laboratory steps in the fabrication of a digital denture.
4. Describe basic occlusal relationships: monoplane versus lingualized occlusion as well as balanced occlusion principles.
5. Evaluate the techniques involved within the fabrication of a digital complete denture including impression making, appropriate records making, teeth try-in protocols, fitting and delivery of these dentures as well as follow-up procedures.
6. Describe the importance of, and the criteria used to evaluate, acceptable laboratory work like teeth try-in and the final dentures.
7. Properly complete laboratory prescriptions as required when fabricating CAD/CAM complete dentures by a commercial dental laboratory.
8. Differentiate among the indications, contraindications and limitations of CAD/CAM systems
9. Apply appropriate basic teeth selection principles (gender, face structure, skin tones, bone reabsorption patterns, arch form, esthetics, phonetics, etc.) and color science to the fabrication of the complete dentures.
10. Deliver a digitally created denture to a comprehensive care patient.
11. Document and present the case after dentures are delivered and had at least a 24 hours follow-up

VII. Course Competencies

VIII. Evaluation

Online and Class Portion of Module (Pre-Procedural Portion) 20%

The online module will provide content and audiovisuals (4 hours). Two classes sessions will be conducted to answer questions and prepare students for clinical patient care. **This is required before the treatment of the patient.**

Clinical Portion of the Module-50%

Each step in the fabrication of the digital dentures will be evaluated individually following the criteria and evaluation forms in Axium for complete denture Prosthodontics. Contact Dr. Fernandez at mfernandez@dental.ufl.edu to schedule an appointment.

Post-Clinical Portion of the Module-30%

Case based presentation

Students must present the finalized case with the pictures of the pre-op through the final delivery day. Contact Dr. Fernandez at mfernandez@dental.ufl.edu to schedule an appointment.

Remediation:

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-policies/>

X. Grade Scale

DEN8290 Grade Scale

Method	Letter Grade
Scale	100
Tolerance	0 (Final letter grades within this range will be rounded up.)
A	95 - 100
A-	92 - 95
B+	88 - 92
B	84 - 88
B-	80 - 84
C+	76 - 80

C 70 - 76

E 0 - 70