

DLT 116 COMPLETE DENTURES

COURSE DESCRIPTION:

Prerequisites: Enrollment in the Dental Laboratory Technology program

Corequisites: None

This course introduces basic and intermediate techniques in complete denture construction and also covers mandibular movement, occlusion, and infection control. Topics include baseplates, occlusion rims, articulator mountings, custom trays, setting of teeth, waxing denture bases, investing, processing, selective grinding, finishing, and polishing of complete dentures. Upon completion, students should be able to construct complete denture prostheses utilizing proper laboratory technique. Course Hours Per Week: Class, 1. Lab, 9. Semester Hours Credit, 4.

LEARNING OUTCOMES:

The student will:

- a. Identify diseases that may be contracted in the dental laboratory and measures that can be taken to reduce the risk of disease.
- b. Identify the purpose and features of base plates and occlusion rims.
- c. Describe anatomical landmarks of the oral cavity.
- d. Fabricate base plates and occlusion rims.
- e. Describe the various materials used in fabricating base plates and occlusion rims and identify their advantages and disadvantages.
- f. Utilize and maintain the Hanau H2 articulator.
- g. Mount casts on the Hanau H2 articulator.
- h. Fabricate maxillary and mandibular custom impression trays.
- i. Identify various artificial denture teeth, their materials, and the advantages and disadvantages of each.
- j. Demonstrate an understanding of occlusion.
- k. Utilize an occlusal plane for a maxillary complete denture set-up.
- l. Practice proper infection control procedures.
- m. Fabricate maxillary and mandibular complete dentures utilizing the Hanau H2 articulator.
- n. Recall the correct arrangement of teeth.
- o. Select and arrange teeth for complete dentures.
- p. Form the wax denture base.
- q. Give the purpose of flasking and mold preparation.
- r. Flask, eliminate wax, and prepare mold.
- s. Explain the procedure for packing and processing denture resin.
- t. Pack and process denture resin.
- u. Explain procedures for deflasking, remounting, and selective grinding.
- v. Deflask, remount, and selectively grind teeth.

- w. Explain techniques for recovering, finishing, and polishing complete dentures.
- x. Recover, finish, and polish complete dentures.

OUTLINE OF INSTRUCTION:

- I. Bloodborne infectious diseases that may be contracted in the dental laboratory
 - A. Lecture - two (2) one hour lectures
 - 1.) Presentation
 - (a.) Types of diseases that may be contracted
 - (b.) Various methods that can be taken to reduce the risk of disease
 - B. Two (2) NADL infection control videos
 - C. References:
 - 1.) Infection Control in the Dental Laboratory - R.R. Runnels
- II. Introduction to complete dentures
 - A. One hour lecture
 - 1.) Presentation
 - (a.) Complete denture terminology
 - (b.) Examples of prosthesis
 - (c.) Function of the oral structures
 - (d.) Anatomical changes associated with loss of teeth
 - (e.) Four objectives of prosthodontic treatment
 - (f.) Responsibilities of the dentist and the technician
 - 2.) Application
 - B. References:
 - 1.) Removable Prosthodontic Techniques, pages 3-11
 - 2.) Handouts - Dental Terminology
- III. Trial base plates
 - A. One-half hour lecture
 - 1.) Presentation
 - (a.) The purpose for trial base plates
 - (b.) Materials that may be used for forming base plates
 - (c.) Requirements for a successful base plate
 - 2.) Application
 - B. One-half hour laboratory demonstration--adapting wax base plates to maxillary and mandibular models provided.
 - C. References:
 - 1.) Removable Prosthodontic Techniques, pages 32-39
 - 2.) Dental Laboratory Technology, AFM, Volume II, pages 21-29
- IV. Occlusion rims
 - A. One-half hour lecture
 - 1.) Presentation
 - (a.) The purpose for occlusion rims

- (b.) Function of the occlusion rims
 - (c.) Requirements for occlusion rims to be successful
 - 2.) Application
 - B. One-half hour demonstration--forming wax occlusion rims
 - C. References:
 - 1.) Removable Prosthodontic Techniques, pages 40-42
 - 2.) Handout (instruction sheet)
 - 3.) Dental Laboratory Technology, AFM, Volume II, pages 21-29 Section C
- V. Light-cured base plates with wax occlusion rims
- A. One-half hour lecture
 - 1.) Presentation
 - (a.) Advantages and disadvantages of light-cured base plates
 - (b.) Requirements for fabricating light-cured base plates
 - 2.) Application
 - B. One-half hour demonstration--adapting light-cured base plates and wax occlusion rims to maxillary and mandibular models provided.
 - C. References:
 - 1.) Removable Prosthodontic Techniques, pages 32 through 39
 - 2.) Dental Laboratory Technology, AFM, Volume II, pages 21-29, Section C
 - 3.) Handout – Triad Light-cure system
- VI. Vacuum formed base plates with wax occlusion rims
- A. One-half hour lecture
 - 1.) Presentation
 - (a.) Advantages and disadvantages of vacuum formed base plates
 - (b.) Requirements for fabricating a vacuum formed base plate
 - 2.) Application
 - B. One-half hour demonstration--use of Omnivac vacuum procedures
 - C. References
 - 1.) Omnivac Manufacturers Instruction, Buffalo Dental Mfg. Co. Inc.
 - 2.) Removable Prosthodontic Techniques, pages 114-117
- VII. The Hanau H2 articulator
- A. One-half hour lecture
 - 1.) Presentation
 - (a.) Definitions pertaining to the articulator
 - (b.) Function of the parts of an articulator
 - (c.) Types of articulators manufactured
 - 2.) Application
 - B. One half-hour laboratory demonstration
 - 1.) Introduction to Hanau H-2 Articulator
 - 2.) Mounting casts by the arbitrary method
 - C. References
 - 1.) Removable Prosthodontic Techniques, pages 43-48
 - 2.) Handout

3.) Dental Laboratory Technology, AFM, Volume II, pages 32-37

VIII. Artificial teeth

A. One and one-half hour lecture

1.) Presentation

- (a.) Materials used in manufacture of artificial teeth
- (b.) Advantages and disadvantages - porcelain vs. plastic teeth
- (c.) Methods of marketing artificial teeth
- (d.) Identifying artificial teeth
 - (1.) Basic types of posterior teeth
 - (a.) Anatomical
 - (b.) Semi-anatomical
 - (c.) Non-anatomical
 - (2.) Advantages/disadvantages of anatomical, semi- anatomical and non-anatomical types
 - (3.) Manufacturer's markings
 - (4.) Anterior tooth identification
 - (a.) Maxillary
 - (b.) Mandibular

2.) Application

B. Demonstration not given due to the nature of the subject

C. References:

- 1.) Dentsply portfolio
- 2.) Dental Laboratory Tehnology, AFM, Volume II, pages 38-43

IX. Setting maxillary anterior teeth

A. One-half hour lecture

1.) Presentation

- (a.) Objectives of artificial tooth arrangement
- (b.) Arrangement of the teeth

2.) Application

B. Forty-five minute demonstration

- 1.) Materials required for setting teeth
- 2.) Occlusal rim removal
- 3.) Positioning of teeth/axial inclinations/relation to occlusal plane
- 4.) Use of base plate wax for setting teeth

C. References

- 1.) Dental Laboratory Technology, AFM, Volume II, pages 50-54
- 2.) Removable Prosthodontic Techniques, pages 58-64
- 3.) Handouts

X. Setting maxillary posterior teeth

A. One-half hour lecture

1.) Presentation

- (a.) Arrangement of the teeth and different occlusal schemes

- 2.) Application
 - B. Forty-five minute demonstration
 - 1.) Section removal of wax rim
 - 2.) Positioning of the teeth
 - C. References
 - 1.) Removable Prosthodontic Techniques, pages 68-71
 - 2.) Dental Laboratory Technology, AFM, Volume II, pages 55-68
 - 3.) Handouts
- XI. Wax-up for a trial denture
- A. One-half hour lecture
 - 1.) Presentation
 - (a.) Purpose of trial wax-up
 - (b.) Techniques for waxing the trial denture
 - 2.) Application
 - B. References:
 - 1.) Removable Prosthodontic Techniques, pages 80-86
 - 2.) Dental Laboratory Technology, AFM, Volume II, pages 73-80
- XII. Fabrication of custom impression trays
- A. One-half hour lecture
 - 1.) Presentation
 - (a.) Purpose of the custom impression tray
 - (b.) Technique for fabricating the custom impression tray
 - 2.) Application
 - B. One hour demonstration
 - 1.) Fabrication of maxillary custom tray
 - 2.) Fabrication of mandibular custom tray
 - C. References:
 - 1.) Removable Prosthodontic Techniques, pages 16-22
 - 2.) Dental Laboratory Technology, AFM, Volume II, pages 13-19
- XIII. The Hanau H2 articulator (review)
- A. Lecture - one half hour
 - 1.) Presentation--include slides
 - (a.) Nomenclature of the parts of the articulator
 - (b.) Function of the parts of the articulator
 - (c.) Proper maintenance of the articulator
 - (d.) Relating the articulator components to the patient's anatomy
 - (e.) Manipulation of the Hanau H2 articulator
 - 2.) Application
 - B. Demonstration - one half hour
 - 1.) Maintenance procedures
 - 2.) Manipulation procedures
 - C. References:
 - 1.) Dental Laboratory Technology, AFM, Volume II, pages 32-37

2.) Removable Prosthodontic Techniques, pages 7 and 43-51

XIV. Selecting and arranging teeth for complete dentures

A. Lectures - four ½ hour sessions

1.) Presentation

- (a.) Denture tooth selection and identification
- (b.) Arrangement of maxillary anterior teeth
- (c.) Arrangement of maxillary posterior teeth
- (d.) Arrangement of mandibular posterior teeth
- (e.) Arrangement of mandibular anterior teeth

2.) Application

B. Demonstration - four ½ hour sessions

- 1.) Selecting teeth for complete denture set-up
- 2.) Arranging artificial teeth for complete dentures

C. References:

- 1.) Dental Laboratory Technology, AFM, Volume II, pages 51-69
- 2.) Removable Prosthodontic Techniques, pages 58-79

XV. Forming the wax denture base

A. Lecture - one hour

1.) Presentation

- (a.) General considerations for fabricating the wax denture base
 - (1.) Purpose for the wax denture base
 - (2.) Purpose for the wax-up for try-in
 - (3.) Purpose for the final wax-up
 - (4.) Procedures for wax-up for try-in
 - (5.) Procedures for final wax-up

2.) Application

B. Demonstration - one hour

- (a.) Wax-up for try-in
- (b.) Final wax-up

C. References:

- 1.) Dental Laboratory Technology, AFM, Volume II, pages 73-80
- 2.) Removable Prosthodontic Techniques, pages 80-86

XVI. Flasking, wax elimination and mold preparation

A. Lecture - one hour

1.) Presentation

- (a.) General considerations for flasking and mold preparation
- (b.) Procedures for flasking the maxillary and mandibular wax dentures
- (c.) Procedure for the wax elimination (boil-out)
- (d.) Procedures for the mold preparation

2.) Application

B. Demonstration - one hour

- 1.) Flasking the maxillary wax denture
- 2.) Flasking the mandibular wax denture

- 3.) The boil-out
- 4.) Mold preparation
- C. References:
 - 1.) Dental Laboratory Technology, AFM, Volume II, pages 80-86
 - 2.) Removable Prosthodontic Techniques, pages 87-92

XVII. Packing and processing the acrylic resin denture base

- A. Lecture - one hour
 - 1.) Presentation
 - (a.) General considerations for packing and processing the dentures
 - (b.) Procedures for using heat activated acrylic resins and the curing unit
 - 2.) Application
- B. Demonstration - one hour
 - 1.) Mixing the acrylic resin
 - 2.) Packing the acrylic resin
 - 3.) The Hanau Model 2 Curing Unit
 - 4.) Processing the acrylic resin
- C. References:
 - 1.) Dental Laboratory Technology, AFM, Volume II, pages 87-95
 - 2.) Removable Prosthodontic Techniques, pages 93-96

XVIII. Deflasking, remounting and selective grinding

- A. Lecture - one and one-half hours
 - 1.) Presentation--include slides and 35mm film #RK656
 - (a.) Procedures for deflasking and devesting the complete dentures
 - (b.) Purpose and procedure for remounting the complete dentures
 - (c.) Purpose and procedure for selective grinding of the dentures
 - 2.) Application
- B. Demonstration - one hour
 - 1.) Deflasking
 - 2.) Remounting
 - 3.) Selective grinding
- C. References:
 - 1.) Dental Laboratory Technology, AFM, Volume II, pages 95-106
 - 2.) Removable Prosthodontic Techniques, pages 97-105
 - 3.) Occlusal Equilibration in Denture Prosthesis, 35mm film, #RK656

XIX. Denture recovery, finishing, and polishing

- A. Lecture - one hour
 - 1.) Presentation
 - (a.) Procedure for recovering the denture
 - (b.) Procedure for finishing the denture
 - (c.) Purpose and procedure for polishing the denture
 - (d.) Care of the completed denture
 - 2.) Application

- B. Demonstration - one hour
 - 1.) Recovering the denture
 - 2.) Finishing the denture
 - 3.) Polishing the denture
 - 4.) Caring for the denture
- C. References:
 - 1.) Dental Laboratory Technology, AFM, Volume II, pages 106-112
 - 2.) Removable Prosthodontic Techniques, Chap. 13, pages 106-110

REQUIRED TEXTBOOKS AND MATERIALS:

Sowter, John B., Removable Prosthodontic Techniques, Revised Edition, University of North Carolina Press, Chapel Hill, NC

Dental Laboratory Technology, AFM 162-6, Volume II, Department of Air Force, Washington, DC, 1991.

Dental Instrument Kit, Complete

SUGGESTED REFERENCES, PERIODICALS, AND VISUAL AIDS:

Complete Denture Prosthesis, 1981

Dental Laboratory Procedures Vol. I, II, III

Impressions For Complete Dentures, 1984

Infection Control in the Dental Laboratory, 1984

Journal of Dental Technology

Portfolio on Prosthetics, Dentsply International, Inc., York, PA

Practical Periodontics & Aesthetic Dentistry

The Journal of Prosthetic Dentistry

STATEMENT FOR STUDENTS WITH DISABILITIES:

Students who require academic accommodations due to any physical, psychological, or learning disability are encouraged to request assistance from a disability services counselor within the first two weeks of class. Likewise, students who potentially require emergency medical attention due to any chronic health condition are encouraged to disclose this information to a disability services counselor within the first two weeks of class. Counselors can be contacted by calling 919-536-7207, ext. 1413 or by visiting the Student Development Office in the Phail Wynn Jr. Student Services Center, room 1209.