

DLT 126
ADVANCED CROWN AND BRIDGE

COURSE DESCRIPTION:

Prerequisites: DLT 123

Corequisites: None

This course introduces techniques for fabricating advanced fixed restorations. Topics include resin veneers, temporary crowns, post-core crowns, non-parallel bridges, and semi-precision attachments. Upon completion, students should be able to fabricate advanced fixed restorations. Course Hours Per Week: Class, 1. Lab, 9. Semester Hours Credit, 4.

LEARNING OUTCOMES:

The student will:

- a. Interpret dental prescriptions.
- b. Identify anatomic landmarks of the adult dentition.
- c. Identify materials used to fabricate cast metal crowns and bridges.
- d. Demonstrate an understanding of restoration design principles.
- e. Explain procedures for fabricating single and multiple unit restorations.
- f. Show the correct use of a surveyor in the construction of non-parallel bridges and semi-precision attachments.
- g. Articulate and survey casts for multiple unit restorations utilizing the Hanau articulator.
- h. Identify and trim margins.
- i. Apply principles of occlusion in the construction of crowns and bridge work.
- j. Form wax patterns for resin veneer crowns.
- k. Form wax patterns using a drop wax technique.
- l. Incorporate principles of occlusion, including occlusal stress.
- m. Perform investing, burnout, and casting procedures.
- n. Seat cast restorations on respective dies and adjust occlusion.
- o. Finish and polish fixed crowns and bridges.
- p. Blend incisal and body shades.
- q. Construct acrylic jacket crowns and acrylic veneer crowns.
- r. Construct temporary restorations.
- s. Cast post and core restorations.
- t. Incorporate principles of occlusion in assigned cases.
- u. Participate in a group project for the assessment of critical thinking skills.

OUTLINE OF INSTRUCTION:

- I. Diseases that may be contracted in the dental laboratory
 - A. Lecture - review of infection control
 - 1) Presentation
 - (a) Types of diseases that may be contracted
 - (b) Various methods that can be taken to reduce the risk of disease
 - 2) Application

B. References

- 1) Infection Control in the Dental Laboratory - R.R. Runnels
- 2) NADL – Infection Control Program

II. Introduction to the fabrication of an acrylic jacket crown (AJC)

A. Classroom lecture: one hour

- 1) Description of an AJC
- 2) Trimming margins for AJCs
- 3) Contouring wax patterns for AJCs

B. Reference: Dental Laboratory Technology. USAF Vol. III, pages 161-162

III. Forming wax patterns for acrylic veneer crowns (AVC)

A. Classroom lecture: one hour

- 1) Description of an acrylic veneer crown
- 2) Trimming margins for acrylic veneer crowns
- 3) Contouring the wax patterns
- 4) Forming the window for the acrylic face
- 5) Mechanical retention

B. Laboratory demonstration: one hour

- 1) Trimming the die for an acrylic veneer crown
- 2) Cutting the window to receive acrylic
- 3) Placement of mechanical retention

C. Reference: Fixed Restorative Techniques. UNC, pages 9-10

IV. Principles of constructing an acrylic veneer crown

A. Classroom lecture: one hour

- 1) Varieties of build-up resins
- 2) Modeling the resin for an acrylic veneer crown
- 3) Opaque
 - (a) Purpose
 - (b) Application
- 4) Gingival shade
 - (a) Purpose
 - (b) How it should be applied
- 5) Incisal shade
 - (a) How to cut back gingival
 - (b) How to cut back incisal

B. Laboratory demonstration: one hour

- 1) Application of opaque
- 2) Application of gingival
- 3) Cutting back of gingival for incisal
- 4) Application of incisal

C. Reference: Fixed Restorative Techniques. UNC, pages 264-273

V. Finishing and polishing of an acrylic veneer crown

A. Classroom lecture: one hour

- 1) Contouring the acrylic
- 2) Removing excess acrylic from the gold casting
- 3) Polishing the crown

B. Laboratory demonstration: one hour

- 1) Contouring the acrylic
- 2) Removing excess acrylic from the gold casting
- 3) Polishing the crown

C. Reference: Handout

VI. Temporary restorations

A. Classroom lecture: one hour

- 1) Purpose for temporary restorations
- 2) Types of temporary restorations
- 3) Methods of construction
 - (a) Vacuum forming
 - (b) Wax up and investing
 - (c) Direct technique
 - (d) Group Project

B. Laboratory demonstration: 30 minutes

- 1) Vacuum forming
- 2) Packing and curing
- 3) Finishing and polishing

C. Reference: Dental Laboratory Technology. USAF, Vol. III, pages 13-14

VII. Non-rigid bridges

A. Classroom lecture: one hour

- 1) Reasons for attachments
- 2) Different types of attachments
- 3) Applications of attachments

B. Laboratory demonstration: one hour

- 1) Abutment wax up
- 2) Surveying the abutments
- 3) Setting the attachment (use special tool for attachment)
- 4) Luting the attachment to the abutment
- 5) Spruing investing and casting

C. Laboratory demonstration - one hour

- 1) Seating male attachment to female
- 2) Finishing and polishing attachments

D. References:

- 1) Fixed Restorative Techniques. UNC, page 19
- 2) Dental Laboratory Technology. USAF, Vol. III, page 11
- 3) Handouts

VIII. Casting a post and core

A. Classroom lecture: one hour

- 1) Definitions
- 2) Objectives
- 3) Materials
- 4) Equipment
- 5) Fabrication

B. Laboratory demonstration: one hour

- 1) Forming the wax patterns
- 2) Investing the wax patterns
- 3) Casting
- 4) Finishing

C. Reference: Dental Laboratory Technology. USAF, page 9

IX. Occlusion

A. Principles of occlusion

B. Determinants of occlusal morphology and physiology

C. Physiology of mandibular movements as they relate to the fabrication of dental restorations

1) Instruction sources

2) Air Force Manual. 162-6 Vol. III Pages 43-57, 77, 110-111

3) UNC Fixed Restorative. 1989 Section 9 pages 89-120

REQUIRED TEXTBOOKS AND MATERIALS:

Sowter. Fixed Restorative Techniques. UNC Press.

Dental Laboratory Technology. USAF, Vol. III, 1991, Department of the Air Force, Washington, DC.

Handouts

Student Instrument Kit in good condition

One ounce of gold - type of gold to be determined by DLT 123 instructor and must be purchased in Spring Semester.

SUGGESTED REFERENCES:

Mosby. Journal of Prosthetic Dentistry

NADL. Journal of Dental Technology

Montage. Practical Periodontics & Aesthetic 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 686-3652 or by visiting the Student Development Office in the Phail Wynn Jr. Student Services Center, room 1309.