DLT 123
CROWN AND BRIDGE

COURSE DESCRIPTION:

Prerequisites: DLT 111 and DLT 114
Corequisites: None

This course introduces techniques for fabricating cast gold restorations. Topics include infection control, pouring impressions with removable dies, trimming margins, articulating, waxing of single and multiple units, overdenture copings, soldering, and principles of occlusion. Upon completion, students should be able to fabricate single and multiple unit cast gold fixed restorations. Course Hours Per Week: Class, 2. Lab, 12. Semester Hours Credit, 6.

LEARNING OUTCOMES:

The student will:

a. Explain procedures for infection control.
b. Explain procedures for cast crowns and inlays.
c. Analyze impressions for accuracy or imperfections.
d. Pour up impressions.
e. Make removable dies.
f. Examine and identify margins.
g. Trim and mark margins.
h. Demonstrate an understanding of occlusion.
i. Articulate casts.
j. Incorporate principles of occlusion.
k. Identify material used in fabricating crowns and bridges.
l. Form wax inlays, crowns. And hader bar.
m. Sprue wax patterns.
n. Invest wax patterns.
o. Burn-out wax patterns.
p. Cast gold alloy.
q. Finish and polish gold castings.
r. Construct casts and dies for multiple unit restorations.
s. Explain the process for fabricating bridgework.
t. Form wax patterns for multiple restorations that include various pontic forms.
u. Describe the procedure for soldering crowns and bridges.
v. Join fixed bridge units by soldering.
w. Seat cast restorations on respective dies and adjust occlusion.

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. Occlusion
- A. Principles of occlusion
- B. Determinants of occlusal morphology and physiology
- C. Physiology of the mandibular movements as they relate to the fabrication of dental restorations
- D. References
  - 1) Air Force Manual 162-6 Vol. III
    - (a.) Pages 49-61
  - 2) UNC Fixed Restorative
    - (a.) Pages 91-102, pages 102-111
  - 3) UNC Dental Anatomy
    - (a.) Pages 84-95

III. Fundamentals of tooth preparations and pouring impressions
- A. Classroom lecture - one hour
  - 1) Presentation
    - (a.) Types of preparations
    - (b.) Types of margins
    - (c.) Types of impressions
    - (d.) Removable dies
    - (e.) Materials used
    - (f.) Procedures (including articulating casts and occlusal restorations)
  - 2) Application
- B. Laboratory demonstration - two hours
  - 1) Procedures for pouring an accurate impression
  - 2) Procedures for placing dowel pins for individual dies
  - 3) Articulating master casts in plan line articulator
- C. References
  - 1) Fixed Restorative Techniques
  - 2) Air Force Manual, pages 8-10, 21-27, 33-36

IV. Fundamental for making indirect wax patterns
- A. Classroom lecture - one hour
  - 1) Presentation
    - (a.) Purpose for wax patterns
    - (b.) Stress and distortion in wax patterns
    - (c.) Care of wax patterns
    - (d.) Procedures for waxing indirect

2) Application
B. Laboratory demonstration - two hours
1) Procedures for trimming dies
2) Forming the wax patterns
(a.) Standard wax-up procedure
(b.) Drop wax technique
3) Care of wax patterns
C. References
1) Fixed Restorative Techniques, UNC
2) Air Force Manual, pages 45-57

V. Fundamentals of spruing and preparation for investing
A. Classroom lecture - one hour
1) Presentation
(a.) Objective of casting
(b.) Spruing
(c.) Location of pattern in casting ring
(d.) Lining the casting ring
2) Application
B. Laboratory demonstration - two hours
1) Steps and procedures for spruing
2) Location of patterns in ring
3) Placement of liners in ring
C. References
1) Fixed Restorative Techniques, UNC
2) Air Force Manual, pages 62-68

VI. Fundamentals of investing
A. Classroom lecture - one hour
1) Presentation
(a.) Investments
(b.) Types of Expansion
2) Application
B. Laboratory demonstration - two hours
1) Investment procedures
2) Materials and equipment used
C. References
1) Fixed Restorative Techniques, UNC
2) Air Force Manual, pages 69-71

VII. Fundamentals of burnout, casting, finishing, and polishing inlays and crowns
A. Classroom lecture - two hours
1) Presentation
(a.) Burnout
(b.) Melting gold alloy
(c.) Casting
(d.) Cleaning and heat treatment of gold alloy
(e.) Finishing and polishing the casting
2) Application

B.

(g.) Relieving stress before spruing

2) Application

B. Laboratory demonstration

1) Wax-up, pontic
2) Connecting pontic
3) Relieving stress

C. References

1) Fixed Restorative Techniques, UNC, pages 243-252
2) Dental Labroatry Technology, USAF, pages 80-85

XI. Spruing and investing

A. Classroom lecture

1) Presentation

(a.) Sprue location and number
(b.) Use of plastic and wax sprues
(c.) Prevention of induced stress
(d.)