D H 305B: DENTAL RADIOGRAPHY II

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	1
Hours:	3 laboratory per week (36 total per quarter)
Advisory:	Not open to students with credit in D H 60B.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

Student Learning Outcomes

- Students will be able to master the use of digital information obtained by PSP plates & scanners and integrate it with dental software technology.
- Students will produce a diagnostic set of bitewing radiographs on a patient then evaluate and analyze each image for technical and operator errors.

Description

The second in a series of dental radiology courses. Introduction to the radiology laboratory. Emphasis on dental x-ray techniques, film development and mounting, digital radiography and scanning. Radiation safety protection is practiced for all laboratory procedures. All films will be viewed for self-critique and instructor evaluation. Intended for students in the Dental Hygiene Baccalaureate Degree Program; enrollment is limited to students accepted in the program.

Course Objectives

The student will be able to:
A. Demonstrate the ability to expose a BWS and FMS on a dental mannequin without exceeding the number of retakes permitted
B. Process a set of dental films in the darkroom without critical errors
C. Analyze the specific film fault or limitation by recognizing and describing the improper procedure involved
D. Produce the correct film that improves the quality of the faulty radiograph
E. Demonstrate knowledge in the prevention of disease transmission and use safety protocols for film and digital radiography
F. Utilize assessment skills in medical/dental histories as it applies to a patient's radiographic needs
G. Communicate evidence based information of radiation exposure to fearful patients

Course Content

A. Exposure of bitewing and full-mouth survey on a dental mannequin
1. Parallel technique
2. Utilization of intraoral holders
3. Process and mount all film
4. Receptor placement
5. No more than four retakes on a FMX and two retakes on a BWX
B. Dental x-ray film processing
1. Film composition and size
2. Latent image
3. Film speed and size influence of silver halide crystals
4. Darkroom requirements
5. Automatic film processing
6. Chemical composition and reactions in fixer
7. Chemical composition and reactions in developer
C. Analysis of film errors
1. Film exposing errors
2. Film technique errors
D. Evaluation of film errors and corrections
1. Distortion
2. Backwards film
3. Blurred image
4. Underexposed film
5. Overexposed film
6. Clear film
7. Black film
8. Foreshortening
9. Cone cutting
10. Overlapping
11. Elongation
12. Scratches
13. Fingernail imprints
14. Bent edges
15. High contrast
16. Low contrast
17. High density
18. Low density
19. Reticulation
20. Loss of apices
E. Infection control in the operatory
1. Unit disinfection
2. Intermediate level disinfectant used in lab
3. Sterility of intraoral placement holders
4. Lead apron disinfection
5. Prevention of cross contamination
a. Films
b. Processors
c. Plates
d. Scanners
e. Erasers
f. Transport boxes
g. Computers, keyboards, touch pad screens
h. Panoramic and intraoral tubeheads and position indicator device
F. Digital bitewing series on patient, including patient preparation, performance and eligibility
1. Treatment documentation
G. Natural radiation exposure
1. Radon
2. Granite
3. Solar
4. Cosmic

Lab Content

A. Cubicle disinfection
B. Tray set-up for specific procedures
C. Aseptic technique

D. Patient eligibility
E. Image exposures
F. Image processing
G. Image viewing
H. Image evaluation

Special Facilities and/or Equipment

Dental radiology lab equipment: image holders, dental training mannequins, transfer box, dental chairs, dental x-ray machine, digital sensor plates, scanner, computer, Eaglesoft Software.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Group lab performance on mannequin; BWS and FMS
Individual clinical performance evaluation on patient
Mounting films and digital scanning
Written final exam

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Discussion
Cooperative learning exercises
Laboratory
Demonstration
Observation

Representative Text(s) and Other Materials

Iannucci and Howerton. Dental Radiography, Principles and Techniques, 5th ed.. 2017.

Yamamoto, J.. Radiology Lab Policy and Information Manual. .

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

A. Writing assignments may include: list the steps involved in taking a FMS. Include cubicle disinfection, patient and room preparation, armamentarium and film placement, patient management and protection, sterilization, indications of dental findings on forms, treatment documentation. Additional steps may include processing and mounting of films, scanning and disinfection preparation of plates.
B. Drawing assignment may include: given a FMS x-ray mount, draw the teeth included in each projection. Include proportioned teeth and roots (enamel, dentin, cementum, root(s)), alveolar bone characteristics and density (trabeculation, lamina dura), significant intraoral landmarks and appropriate teeth for each film placement.

Discipline(s)

Dental Technology