

D A 53A: INTRODUCTION TO RADIOGRAPHY I

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	3
Hours:	2 lecture, 3 laboratory per week (60 total per quarter)
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

Student Learning Outcomes

- Demonstrate correct maxillary and mandibular anterior intraoral film placement technique on a mannequin
- Using a diagram, the student will be able to identify four basic components in the x-ray tubehead.

Description

Introduction to dental radiology. Emphasis on production, characteristics, biologic effects, radiation safety and protection. Introduction to intraoral long-cone radiographic techniques, image capture and scanning. Intended for students in the Dental Assisting Program; enrollment is limited to students accepted in the program.

Course Objectives

The student will be able to:

- A. Dental Assisting Theory and Practice
1. identify the component parts of the x-ray unit and explain the adjustments that should be made to produce good quality radiographs.
 2. identify the fearful patient and identify signs of anxiety.
 3. demonstrate correct procedures in the x-ray lab to prevent cross-contamination.
 4. compare the different intraoral techniques used for bitewing and full mouth radiography using currently accepted methods.

Course Content

- A. Describe in detail how dental x-rays are produced (Lec)
1. Cathode
 2. Electron cloud
 3. Tungsten filament
 4. Target anode
 5. Focal spot
 6. Copper stem
 7. mA, kVp, time
 8. Contrast, density
 9. Molecular structure of the atom
 10. Wavelength, frequency
 11. Penetration
- B. Patient education and the dental radiographer (Lec)
1. Identification of the fearful patient
 2. Benefits of dental x-rays

3. Patient safety
 4. Operator safety
 5. Dental x-rays and the pregnant patient
 6. Dental x-rays and their frequency
- C. Infection control in the operator
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
 6. Films
 7. Processors
 8. Plates
 9. Scanners
 10. Erasers
 11. Transport boxes
 12. Computers, keyboards, touch pad screens
 13. Panoramic and intraoral tubeheads and position indicator device
- D. 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 in the oral cavity
 5. No more than four retakes on a FMX and two retakes on a BWX

Lab Content

- A. Infection control of the x-ray units and operatories are applied to the radiology laboratory experience.
- B. Additional lab content includes tray set-up for specific procedures, aseptic technique, patient eligibility, image exposures, processing, viewing and evaluation.

Special Facilities and/or Equipment

- A. Gowns, safety glasses, mask, gloves.
- B. X-ray laboratory including training mannequins, view boxes, image receptors, scanners and computers with dental software.

Method(s) of Evaluation

Written multiple choice quizzes, visual slide quizzes and a comprehensive final exam

Critical thinking skills are applied to analyze radiographic landmarks for the purpose of facial mounting

Analysis of film errors are studied and technical or processing corrections to those errors must be identified

Method(s) of Instruction

Lectures
 Demonstrations
 Lab observation
 Cooperative learning exercises

Representative Text(s) and Other Materials

Iannucci, and Howerton. [Dental Radiography, 5th ed.](#) 2017.

Yamamoto, Judy. [DA Radiology Lab Policy and Information Manual.](#) 2019-20.

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

A. Given five comments from patients who are fearful of x-rays, students will prepare an empathetic and factual response.

B. Assigned lab readings will be from the course's lab syllabus and the Radiology Policy Manual.

C. An example of a writing assignment: List the steps and state the rationale involved in taking a FMS. Include proper infection control protocols and radiation safety concerns for retakes. Include the management of hazardous waste controls.

Discipline(s)

Dental Technology