

DE 55B Course Outline as of Fall 2025**CATALOG INFORMATION**

Dept and Nbr: DE 55B Title: DENTAL RADIOLOGY

Full Title: Dental Radiology

Last Reviewed: 9/23/2024

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	1.00	Lecture Scheduled	0.50	17.5	Lecture Scheduled	8.75
Minimum	1.00	Lab Scheduled	1.50	8	Lab Scheduled	26.25
		Contact DHR	0		Contact DHR	0
		Contact Total	2.00		Contact Total	35.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 17.50

Total Student Learning Hours: 52.50

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly: DNA 65B

Catalog Description:

Students will focus on the advanced imaging technique of extraoral panoramic dental radiology. The main emphasis is on developing proficiency in evaluating and interpreting intraoral and extraoral (panoramic) images, which entails recognizing anatomical landmarks, dental anatomy, restorations, and disease processes. Students must first demonstrate competency using manikins before providing services for patients. Students will gain the necessary skills and knowledge to confidently join the workforce in a clinical setting.

Prerequisites/Corequisites:

Course Completion of DE 55A

Recommended Preparation:**Limits on Enrollment:****Schedule of Classes Information:**

Description: Students will focus on the advanced imaging technique of extraoral panoramic dental radiology. The main emphasis is on developing proficiency in evaluating and interpreting intraoral and extraoral (panoramic) images, which entails recognizing anatomical landmarks,

dental anatomy, restorations, and disease processes. Students must first demonstrate competency using manikins before providing services for patients. Students will gain the necessary skills and knowledge to confidently join the workforce in a clinical setting. (Grade Only)

Prerequisites/Corequisites: Course Completion of DE 55A

Recommended:

Limits on Enrollment:

Transfer Credit: CSU;

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area	Effective:	Inactive:
CSU GE:	Transfer Area	Effective:	Inactive:

IGETC:	Transfer Area	Effective:	Inactive:
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CSU Transfer:	Transferable	Effective:	Fall 1981	Inactive:
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UC Transfer:		Effective:		Inactive:
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CID:

Certificate/Major Applicable:

Both Certificate and Major Applicable

COURSE CONTENT

Student Learning Outcomes:

At the conclusion of this course, the student should be able to:

1. Demonstrate an expanded knowledge of oral imaging, including proficiency in basic and advanced exposure techniques and identification (interpretation) skills.
2. Consistently demonstrate comprehension of radiation safety as it relates to the patient and operator.

Objectives:

At the conclusion of this course, the student should be able to:

1. Demonstrate intraoral and panoramic radiological imaging on manikins utilizing correct safety precautions, positioning, exposure settings, and processing or image capture techniques.
2. Demonstrate intraoral and panoramic radiological imaging on patients utilizing correct infection control, safety precautions, positioning, exposure settings, and processing or image capture techniques.
3. Discuss principles of infection control utilized in operator preparation, film or sensor use and processing contaminated film.
4. Implement appropriate radiation protective measures for the protection of the operator and the patient utilizing the ALARA (as low as reasonably achievable) principle.
5. Discuss the use of quality control measures to assure the production of diagnostic images.
6. Discuss safety and environmental responsibilities for dental radiography.
7. Demonstrate anatomical film mounting.
8. Discuss the advantages and disadvantage of panoramic radiography.
9. Define the roles of the dental auxiliary and the dentist in image evaluation, interpretation and diagnosis.
10. Evaluate intraoral and panoramic images for errors based on diagnostic image criteria.

11. Identify normal anatomical landmarks of the maxilla and mandible on intraoral and panoramic images.
12. Identify normal dental deviations from normal anatomy resulting from trauma, disease, and developmental conditions.
13. Identify basic carious lesions on images and factors that would influence interpretation.
14. Describe the appearance on images of restorative materials such as amalgam, porcelain, gold, cements, and composites.
15. Describe the uses of extraoral imaging and the purpose of each of the extraoral projections.
16. Compare and contrast conventional film and digital imaging with respect to radiation exposure, equipment, image capture, maintenance and convenience.
17. Describe modifications in technique for special needs patients, and pedodontic patients.
18. Discuss duplication of films.

Topics and Scope:

I. Intraoral Imaging*

- A. Equipment preparation
- B. Patient preparation
- C. Infection control
- D. Quality assurance
- E. Safety precautions
- F. Processing or image capture
- G. Evaluation
- H. Interpretation

II. Panoramic Images*

- A. Advantages and disadvantages
- B. Equipment preparation*
- C. Patient positioning*
- D. Infection control*
- E. Quality assurance*
- F. Safety precautions*
- G. Processing or image capture*
- H. Evaluation*
- I. Interpretation*

III. Infection Control*

- A. Cross contamination
- B. Disinfection
- C. Sterilization
- D. Barriers

IV. Quality Assurance*

- A. Equipment
- B. Operators
- C. Image receptors
- D. Techniques
- E. Monitoring and record keeping
- F. Facility

V. Safety And Environmental Responsibilities*

- A. Radiation
- B. Use and disposal of chemicals and lead

VI. Patient Management*

- A. Special needs patients
- B. Patient management techniques

VII. Radiographic Landmarks

- A. Terminology
- B. Normal landmarks of the skull
- C. Dental anatomy

VIII. Image Evaluation*

- A. Criteria
- B. Corrections of errors

IX. Image Interpretation*

- A. Rationale
- B. Dental caries- basic
- C. Restorations and dental materials - basic

X. Extraoral Imaging

- A. Uses
- B. Types of projections

XI. Duplicating Films

- A. Film
- B. Equipment

XII. Digital Radiography

- A. Equipment
- B. Types of digital imaging
- C. Comparison to conventional film

*These items are introduced in lecture, and the related skill is performed in the lab.

XIII. Laboratory Exercises

A. Production of diagnostic images with proper contrast, density, definition, and minimal magnification or anatomic distortion.

B. Demonstration of radiographic interpretation to include recognition of basic anatomic landmarks, dental anatomy, restorations and disease processes.

C. Demonstration of panoramic technique.

D. Application of infection control techniques for prevention of disease transmission, safety precautions following the ALARA Principle (as low as reasonably achievable), and quality assurance procedures to protect the operator, patient and environment.

Assignment:

Lecture-Related Assignments:

1. Reading from text (10-15 pages per week)
2. Readiness Assessment Assignment (4-8)
3. Quizzes (3-6)
4. Midterm
5. Final

Lab-Related Assignments:

1. Skill demonstrations
 - a. Student and instructor written evaluation of Panoramic image: student and manikin placement
 - b. Student and instructor written evaluation of Digital survey: student placement and manikin
2. Clinical Experience
 - a. Patient images intraoral and extraoral
 - b. Student and instructor written evaluations and interpretations of all radiographs

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Readiness Assessment Assignment

Writing
0 - 10%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Evaluations and interpretations, radiographs, panoramic image, digital survey, manikin placement

Problem solving
30 - 40%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Patient intraoral and extraoral images

Skill Demonstrations
30 - 40%

Exams: All forms of formal testing, other than skill performance exams.

Midterm, quizzes, and written and laboratory final

Exams
20 - 30%

Other: Includes any assessment tools that do not logically fit into the above categories.

None

Other Category
0 - 0%

Representative Textbooks and Materials:

Dental Radiography, Principles and Techniques. Iannucci, Joen and Howerton, Laura. Elsevier. 6th Ed. 2022.

Dental Radiography, Principles and Techniques, Workbook and Laboratory Manual. Iannucci, Joen and Howerton 6th Ed., Laura. Elsevier. 2022.

Instructor prepared materials