

Prepared by the Department of Health Sciences
Date of Departmental Approval: January 18, 2018
Date Approved by Curriculum and Programs: February 21, 2018

Effective: Fall 2018

1. Course Number: DEN 103

Course Title: Principles of Oral Radiology

2. Description: This course provides the student with information concerning principles of x-radiation, components of the x-ray tube, equipment usage, safety and maintenance, parallel/bisecting-angle, special patient techniques, digital radiography/film, radiographic interpretation, manual /automatic processing, and infection prevention. Lab experience includes: parallel and bisecting-angle technique, film/digital radiography, Panelipse, special patient techniques, automatic processing equipment, and radiographic interpretation.

3. Student Learning Outcomes:

Upon successful completion of this course, students are able to do the following:

- Maintain professional standards as outlined in the CCCC Clinic Procedure Manual and CCCC Student Handbook.
- Describe the program's infection prevention guidelines regarding blood borne pathogens.
- Describe the program's policy on standard precautions.
- Perform infection prevention standard operating procedures for radiology equipment set up.
- Follow HIPAA and informed consent policies.
- Review medical and dental histories, following the stated protocols in the CCCC Clinic Procedure Manual
- Recognize and manage medical emergencies as outlined in the CCCC Clinic Procedure Manual.
- Describe the ADA guidelines for prescribing dental radiographs.
- Follow CCCC Hazardous Waste Management procedures.
- Demonstrate knowledge of the physical principles involved in the clinical use of dental radiology.
- Demonstrate knowledge of the radiographic principles and techniques necessary for the effective and safe utilization of dental radiograph equipment.
- Demonstrate knowledge of image quality that includes density, contrast, definition, and dimensional distortion of the radiographic image.
- Document conditions that may alter or contraindicate radiographic exposure.
- Document exposure and developing errors.
- Interpret radiographic exposures for anatomy and possible pathology.
- Describe operator safety measures with regards to radiographic exposures.
- Describe patient safety measures with regards to radiographic exposures.
- Describe in detail how dental x-ray energy is produced.
- Describe the effects of radiation exposure on cells, tissues, and organs.

4. Credits: 3 credits

5. Satisfies General Education Requirement: No

6. Prerequisites: CHM109 (Chemistry for the Health Sciences)

7. Semester Offered: Fall

8. Suggested General Guidelines for Evaluation: The student must pass the course with a 75 or better to continue in the Dental Hygiene program. Evaluation methods include: quizzes, self- assessment, research paper, on-line assignments and laboratory requirements.

9. General Topic Outline:

WEEK 1 Dental Radiograph technologies.
 History of Radiography exposure

Digital Radiology

WEEK 2	Types and characteristics of Radiation Bite-wing surveys
WEEK 3	Radiation Biology. Paralleling Technique
WEEK 4	Radiation Protection
WEEK 5	Radiation Characteristics
WEEK 6	Dental Radiographic film, processing, and mounting
WEEK 7	Exposure techniques and errors
WEEK 8	Interpretation of dental radiographs - periapicals
WEEK 9	Introduction to evidence-based learning for Radiology Research Topics
WEEK 10	Bisecting Technique, Dental Caries and Periodontal Disease
WEEK 11	Radiation Exposure of special patients. Infection prevention, Pulpal/Periapical lesions
WEEK 12	Restorative Materials
WEEK 13	Panoramic Imaging and interpretation
WEEK 14	Supplemental dental radiographic techniques. Legal issues. Review of the course for final exam.