

Course Objectives/Course Outline
Spokane Community College

Course Title: *Introduction to Dental Radiology Lab*

Prefix and Course Number: DENT 115

Course Learning Outcomes:

By the end of this course, a student should be able to:

1. Identify the role of the dental assistant through demonstration of knowledge of the safety procedures, x-ray unit identification, types of film, patient positioning, film placement, cone angulation, exposing and processing techniques, mounting and documentation.
2. Use dental nomenclature relating to dental radiology equipment and procedures.
3. Define terminology used in this unit.
4. Protecting self and others from cross contamination by wearing protective glasses, mask, gloves and uniforms following OSHA/WISHA standards.
5. Demonstrate radiation protection and safety guidelines by wearing radiation safety badge during all labs/clinics.
6. Demonstrate safety measures to self, patient and others at all times during:
 - a. Radiology procedures
 - b. Maintenance of equipment
7. Demonstrate professional interpersonal communication both verbal and nonverbal with instructors, peers and patients.
8. Identify and practice appropriate ethics when in clinic.

Course Outline:

Safety Procedures:

- a) Demonstrate radiation protection and safety guidelines for assistant and patient using the ALARA concept.
- b) Wear radiation safety badge during all labs/clinics.

Dental X-ray Unit

- a) Identify, describe each fundamental part of x-ray unit and demonstrate its use:
 - i) Tube and control panel
 - ii) Kilovoltage
 - iii) Milliamperage
 - iv) Electronic time and mechanical timer
 - v) Cone
 - vi) Operation

X-ray Film:

- a) Handle film correctly prior to and during mannequin/patient exposure, processing and mounting.

X-ray Film Image Qualities

- a) Identify and evaluate film image qualities:
 - i) Density
 - ii) Contrast
 - iii) Detail

- b) Identify and evaluate film image qualities:
 - i) Horizontal angulation
 - ii) Vertical angulation
 - iii) Film placement
 - iv) Errors and the rationale for retaking of an image

Processing Exposed Film:

- a) Identify and demonstrate operation of various darkroom apparatus and equipment according to manufacturer's recommendation.
- b) Demonstrate maintenance of darkroom equipment and processing procedures in both a darkroom and using an automatic processor.
- c) In the dark room demonstrate the time-temperature method of processing.
- d) Demonstrate method of disposal and cleaning darkroom processing tanks and refilling tanks.
- e) Process, mount and label exposed radiographs.
- f) Identify composition and preparation of dental x-ray solutions.

Film placement and patient position:

- a) Demonstrate correct mannequin placement using a lead apron with a thyroid collar.
- b) Demonstrate correct patient head placement using a lead apron with a thyroid collar.
- c) Place, expose and evaluate a minimum of four interproximal radiographs on mannequins.
- d) Assemble a positioning device correctly: RINN
- e) Place, expose and evaluate a full mouth set of x-rays on a mannequin.
- f) Place, expose and mount two sets of bitewings on patients.
 - i) Demonstrate professional interpersonal communication both verbal and nonverbal with instructors, peers and patients.
 - ii) Review medical and dental histories obtaining consent forms prior to exposure of patients. Document procedures correctly in-patient charts.
- g) Identify, label and mount bitewing and full mouth radiographs.

Angulation of the X-ray cone:

- a) Demonstrate understanding of cone angulation when exposing interproximal film using the parallel technique.