South Central College

DA 1826 Radiology II

Common Course Outline

Course Information

Description This course is a continuation of Radiology I. This in-depth course will cover the history of radiation, radiation physics, and differing radiation characteristics. The course will also include patient exposures, patient management and quality assurance. Students will also learn film techniques and processing. (Prerequisite: DA 1816).

Total Credits 3

Total Hours 64

Types of Instruction

Instruction Type	Credits/Hours
Lecture	2 / 32
Laboratory	1 / 32

Pre/Corequisites

Prerequisite DA 1816

Institutional Core Competencies

Communication - Students will be able to demonstrate appropriate and effective interactions with others to achieve their personal, academic, and professional objectives.

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Competencies

1. Explain appropriate use of specific dental terminology

Learning Objectives
Define and pronounce key radiographic terms
Apply correct radiographic terms

2. Utilize infection control process

Learning Objectives
Apply all personal protective equipment (PPE), antiseptic protocols, and standard precautions
Demonstrate equipment disinfection and sterilization procedures

3. Apply patient management techniques

Learning Objectives
Utilize patient communication and management skills
Employ techniques to overcome patient challenges

4. Document patient information

Learning Objectives
Utilize dental software and formatting
Demonstrate radiographic patient record documentation

5. Explain fundamental radiation physics

Learning Objectives
Identify atomic and molecular structures
Describe x-radiation ionization process, radiation, and radioactivity
Explain electromagnetic radiation properties and concepts
Identify radiation x-ray properties

6. Explain dental radiograph machine components

Learning Objectives
Identify and describe x-ray machine components and functions
Identify and describe x-ray machine tubehead components and functions
Identify and describe x-ray tube components and functions

7. Explain the x-ray generation process

Learning Objectives
Explain the x-ray production steps
Identify and describe types of x-rays produced
Explain x-ray interactions

8. Identify characteristics of dental images

Learning Objectives
Explain acceptable image characteristics
Describe image errors
Identify image correction methods

9. Explain radiation biology

Learning Objectives
Describe radiation injury, contributing factors, and sequencing
Identify and describe radiation effects
Describe radiation risks and benefits
Define and explain radiation measurements, traditional and international

10. Apply panoramic techniques

Learning Objectives
Identify and apply panoramic techniques
Demonstrate panoramic radiographic techniques, including patient management and positioning

11. Explain radiographic film characteristics

Learning Objectives
Identify and describe radiographic film components and functions
Explain intra-oral film types, speeds, and sizes
Explain traditional film methods
Describe film errors and corrections
Describe latent image formation

12. Identify film processing knowledge and skills

Learning Objectives

Identify film processing fundamentals
Explain visual film image formation
Identify and explain radiographic film processing equipment, steps, and chemicals utilized

13. Apply Bloodborne Pathogens standards

Learning Objectives
Discuss hazardous waste protocol
Incorporate Bloodborne Pathogen standard in labs
Implement hazardous waste protocol
Utilize Bloodborne Pathogen exposure prevention methods

14. Identify dental radiation image characteristics

Learning Objectives
Identify radiation quality and quantity characteristics and contributing factors
Explain kilovoltage, milliamperage, and exposure time factors and variables
Identify x-ray beam intensity and contributing factors
State the inverse square law and position indicating device (PID) relationship

15. Summarize radiographic film duplication

Learning Objectives
Identify duplication film components and functions
Describe film duplication process steps and exposure factors

16. Identify radiographic quality assurance techniques

Learning Objectives
Describe radiographic quality assurance principles and functions
List quality assurance tests, procedural steps, and functions
Explain quality assurance administration plan and requirements

17. Apply intraoral radiography techniques

Learning Objectives
Demonstrate procedure preparation, safety, and exposure sequence guidelines
Demonstrate patient management techniques
Demonstrate paralleling, bisecting, and bitewing radiographic techniques