

Course discipline/number/title: DH 1525: Dental Imaging for Interpretation

A. CATALOG DESCRIPTION

1. Credits: 3
2. Hours/Week: 2-hour lecture, 2-hour lab
3. Prerequisites (Course discipline/number): DH 1510, DH 1511, DH 1512
4. Other requirements: None
5. MnTC Goals (if any): NA

B. COURSE DESCRIPTION: This is a lecture and laboratory course in current concepts of the principles of radiology and the use of imagery in dentistry. Designed to provide knowledge of radiation production and safety, operation of equipment, and interpretation of radiographic images. This course prepares students for decision making and critical analysis required in clinical practice. Lab sessions give the student experience in exposing, evaluating/correcting errors and interpreting dental radiographs for the dental hygiene care plan.

C. DATE LAST REVISED (Month, year): December, 2023

D. OUTLINE OF MAJOR CONTENT AREAS:

1. Application of dental images
2. Operator and patient protection methods
3. Historical development of radiology in dentistry
4. Infection Control in acquiring dental images
5. Techniques used in exposing images
6. Characteristics of radiation and atomic radiation
7. Production of x-rays within the x-ray machine
8. Biological effects of radiation and radiation dosimetry
9. State and federal rules and regulations concerning x-radiation.
10. Exposure errors and corrections
11. Patient management and education
12. Radiographic interpretation and pathology
13. Intra and Extra-oral images used in dentistry

E. LEARNING OUTCOMES (GENERAL): The student will be able to:

1. Describe the historical development of radiology in dentistry.
2. Acquire knowledge in radiation physics, radiation biology, radiation risk and protection, and radiologic quality assurance.
3. Effectively communicate and justify with the clinic client the recommendation for appropriate imagery in the clinical setting.
4. Demonstrate correct imaging techniques for intra-oral and extra-oral radiographs while maintaining proper infection control.
5. Evaluate images for technique errors and be capable of correcting error(s).
6. Discuss techniques and adaptations for the special needs client.
7. Interpret both normal conditions and pathology on the dental image.
8. Illustrate responsibility in providing ethical and competent care for the client when exposing images in the clinical setting.
9. Explain legal issues that may arise in the clinical setting on imagery.
10. Distinguish both state and federal rules and regulations for x-radiation.
11. Define the roles of the dentist and dental professional in the interpretation of dental radiographs.
12. Identify and discuss current image interpretation methods to include, normal anatomy, dental caries, concepts and terminology, identification of restorations, dental materials and foreign objects, periodontal disease, trauma, pulpal and periapical lesions.
13. Describe how radiographic interpretation can be used to educate the dental client about the importance and use of images.

F. LEARNING OUTCOMES (MNTC): NA

- G. METHODS FOR EVALUATION OF STUDENT LEARNING: Methods may include but are not limited to:
1. Oral tests
  2. Written tests
  3. Worksheets/Class activities
  4. Class presentations
  5. Cumulative final exam
  6. Lab exams/requirements
- H. RCTC CORE OUTCOME(S). This course contributes to meeting the following RCTC Core Outcome(s):  
Critical Thinking. Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.
- I. SPECIAL INFORMATION (if any): None