Course Outline for: DENH 1150 Dental Radiology

A. Course Description

1. Number of credits: 4
2. Lecture hours per week: 3
   Lab hours per week: 2
3. Prerequisites: Acceptance in Dental Hygiene Program; DENH 1112
4. Corequisites: DENH 1142, DENH 1143
5. MnTC Goals: None

Radiation theory, physics, biology, measurement, protections and techniques of dental radiography. Includes classroom, lab manikin practice and clinical application. Introduction to radiographic interpretation in the care of the patient.

B. Date Last Reviewed/Updated: January 2022

C. Outline of Major Content Areas

1. Terminology and History of Radiology
2. X-Ray Equipment and Film
3. Infection Control in Radiology
4. Image Characteristics
5. Film Mounting and Viewing
6. Dental Film Processing
7. Radiation Physics
8. Radiation Characteristics
9. Radiation Biology
10. Radiation Safety and Protection
11. Paralleling Technique
12. Bisecting Technique
13. Bitewing Technique
14. Exposure Technique and Errors
15. Occlusal Films
16. Panoramic Radiography
17. Extraoral Radiography
18. Localization and SLOB
19. Digital Imaging
20. Three-Dimensional Imaging
21. Quality Assurance

22. Legal Issues in Radiography
23. Patient/Operator Communication
24. Patient Education
25. Radiography of Special Needs Patients
26. Appointment Routine
27. Documentation
28. Radiographic Interpretation
29. Anatomical Landmarks on PA, BW, Panoramic radiographs
30. Normal Anatomy
31. Dental Caries
32. Restorative Materials
33. Periodontal Disease
34. Trauma, Pulpal and Periapical Lesions
35. Cysts of the Oral Cavity
36. Benign/Malignant Lesions
37. Systemic Disease
38. Genetic Conditions

D. Course Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Understand the history, concepts, principles and use of radiation and x-radiation.
2. Discuss the parts of the dental x-ray machine and how x-rays are produced.
3. Discuss the factors that control the quality of the beam and their effect on the radiographic image.
4. Discuss the biological effects of radiation.
5. Understand the benefits and safety in the use of radiation in dentistry.
6. Discuss radiation protection procedures for the operator and the patient.
7. Identify and select the type of film or film series to best meet the patient's needs.
8. Understand and demonstrate skill in the paralleling technique for intraoral radiographs
9. Understand and demonstrate skill in supplemental techniques for use with localization, pediatric, special needs, unique anatomy and patient management.
10. Understand the principles and use of panoramic and extraoral radiography.
11. Understand correct technique in the storage, handling and processing of dental film.
12. Discuss and practice appropriate infection control protocols for the dental radiology clinic.
13. Understand and identify factors that ensure radiographic quality assurance.
14. Communicate clearly with a patient the purpose and benefits of radiographs to their health.
15. Understand the legal issues with dental radiographs, informed consent and recordkeeping.

16. Demonstrate a basic understanding of radiographic interpretation principles and the structures viewed on the dental radiographs.

E. Methods for Assessing Student Learning

1. Assignments/Worksheets
2. Exams
3. Lab/Clinical Requirements

F. Special Information

None