

**COURSE:** DA 165 – Dental Radiography

**GENERAL DESCRIPTION:** This course will provide information needed to understand radiation physics, equipment, characteristics, and safety. Students will be instructed in exposing, processing/scanning, and mounting diagnostically acceptable radiographs on mannequins and patients. Procedures to verify quality in radiography will also be included.

**DURATION:** Clock Hours – 126 (68 didactic, 36 lab, 22 clinic) Semester Credits – 4.5

**INSTRUCTORS:** Rhonda Bradberry, CDA, B.S. and Linda Dylla, CDA, B.S.

**REQUIRED TEXT:** *Modern Dental Assisting and Student Workbook*, Robinson and Bird, 9<sup>th</sup> edition

**MAJOR REFERENCES:** *Dental Radiography: An Introduction for Dental Hygienists and Assistants*, 4th edition, O'Brien; *Dental Radiography Principles and Techniques*, 3<sup>rd</sup> Edition, Haring, and Jansen; *Radiology for Dental Professionals*, 9<sup>th</sup> edition, Frommer; *Essentials of Dental Radiography for Dental Assistants and Hygienists*, Johnson and Thomson; *Quality Control Tests for Dental Radiography*, Eastman Kodak.

**METHODS OF INSTRUCTION:** Learning Activity Packets, lecture/PowerPoints, demonstrations, videos, laboratory and clinical practice sessions, x-rays showing correct and incorrect processing, and exposure techniques.

**INSTRUCTIONAL OBJECTIVES:** At the completion of this course the student will:

1. Explain the history of x-radiation, the concepts of atomic and molecular structure and the interactions of x-radiation with matter.
2. Describe components of the x-ray machine and describe in detail how x-rays are produced.
3. Detail the concepts of x-ray beam quantity and quality, and discuss how exposure factors influence these characteristics.
4. Describe the mechanisms and theories of radiation injury, radiation measurements, effects of radiation exposure, and methods of patient and operator protection.
5. Describe dental film composition, types of film, and demonstrate proper darkroom procedures in processing diagnostically acceptable x-rays.
6. Describe legal responsibilities of a dental radiographer and identify quality control tests and quality administration procedures in the use of dental radiography equipment.
7. Describe a complete mouth series and identify the intraoral techniques necessary to achieve a diagnostically acceptable series.
8. Demonstrate the paralleling, bisecting and bitewing techniques.
9. Expose, process/scan, and mount complete mouth series on mannequins and patients.
10. Describe occlusal, panoramic, lateral jaw and cephalometric radiographs.
11. Explain the difference between digital radiography and the film-based system.
12. Prepare for the Radiography component of the Dental Assisting National Board exam.

UNITS OF INSTRUCTION/TOPICS INCLUDED		Didactic Hours	Lab Hours	Clinic Hours
165 1	Describe radiography history, physics, equipment, and characteristics.	16		
165 2	Identify technique basics.	16		
165 3	Expose digital radiographs.	2	24	
165 4	Describe radiation biology and protection	16		
165 5	Perform processing and quality assurance procedures	6	4	
165 6	Identify anatomical landmarks and mounting.	6	4	
165 7	Identify auxiliary radiographic techniques	6	4	2
165 8	Exposure patients complete mouth series			20

**EVALUATION CRITERIA:** Class attendance is required. Daily quizzes may be given which will be graded and may not be made up. Unit exams and a comprehensive final will be given. All radiographs will be graded based on the criteria stated in each LAP. Any series not achieving an 80% must be repeated on another qualified patient. The final grade will be calculated by adding total points achieved and dividing by the number of points possible. The student must achieve a minimum 80% cumulative average at the completion of the course.

**GRADING SCALE:** 94% - 100% = A  
 87% - 93% = B  
 80% - 86% = C  
 79% or below = Failing

**STATEMENT:** Without permission, students do not have the authority to record **any** of the dental assisting classes, its class members, or any expressed content.

Revised: 12/10