

SYLLABUS

COURSE #: DHYG 217

COURSE TITLE: Dental Radiography

of CREDITS: 3

CATALOG DESCRIPTION:

A study of radiation physics, hygiene and safety theories. Emphasis on the fundamentals of oral radiographic techniques and interpretation of radiographs. Includes exposure of intra-oral radiographs, quality assurance, radiographic interpretation, patient selection criteria and other ancillary radiographic techniques.

Prerequisites: Admissions into the Dental Hygiene Program.

Co-requisites: DHYG 110, 112, 113, 114, 115, and enrolled in or completed with a C or above, ENGL 211 or 218.

Semester Offered: Fall.

<i>Common Student Learning Outcomes</i> <i>Upon successful completion of San Juan College programs and degrees, the student will....</i>	
<i>Learn</i>	<i>Students will actively and independently acquire, apply and adapt skills and knowledge to develop expertise and a broader understanding of the world as lifelong learners.</i>
<i>Think</i>	<i>Students will think analytically and creatively to explore ideas, make connections, draw conclusions, and solve problems.</i>
<i>Communicate</i>	<i>Students will exchange ideas and information with clarity and originality in multiple contexts.</i>
<i>Integrate</i>	<i>Students will demonstrate proficiency in the use of technologies in the broadest sense related to their field of study.</i>
<i>Act</i>	<i>Students will act purposefully, reflectively, and respectfully in diverse and complex environments.</i>

COURSE GOALS:

1. The student will utilize the theories of radiation physics, hygiene, safety, and quality assurance in dental radiography as evidenced by a 75% or higher accuracy on written learning assessments and achievement of clinical competency.
2. The student will produce and interpret diagnostically acceptable radiographs utilizing various radiographic techniques as evidenced by a 75% or higher accuracy on written learning assessments and achievement of clinical competency.

LEARNING OUTCOMES:

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

1. Explain the basic principles and concepts of radiation in general and x-radiation in particular.
2. Identify the component parts and workings of the dental x-ray machine and the production of x-rays.

3. Discuss the effects of ionizing radiation on living tissues including protective and recommended health and safety factors.
4. Use appropriate procedures for selecting films and exposure factors and for processing and evaluating radiographs in the production of quality radiographs.
5. Recognize the characteristics of an acceptable x-ray image, the factors that influence the image, and the importance of quality assurance in imaging.
6. Analyze the legal issues related to dental radiography and the role of the dental radiographer in patient education and patient relations.
7. Demonstrate effective patient management techniques for intraoral and extraoral radiographs, panoramic and alternate imaging modalities utilized in dental radiography.
8. Demonstrate competency in radiographic interpretation including normal radiographic landmarks and radiographic pathology.
9. Demonstrate the radiographic techniques of interproximal, paralleling, bisection, panoramic and occlusal radiography which meet SJC standards for acceptable radiographs.
10. Demonstrate acceptable radiographic processing, film duplication, evaluation of radiographs, and radiographic equipment maintenance utilizing radiation safety and infection control protocols.

This syllabus developed by: Mandi Pickering RDH

This syllabus reviewed by: Dr. Julius N. Manz

Date: August 10, 2010

Date: August 16, 2010

Course Guide

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**Required Textbooks
Supplies and Materials** Dental Radiography: Principles and Techniques, 3rd Ed.,
Haring, J. and Jansen, L. Philadelphia: W. B. Saunders
Company, 2006.

Radiographic Interpretation for the Dental Hygienist, Haring, J.I., Lind,
L.J., Philadelphia, W.W. Saunders Company, 1993.

San Juan College Dental Hygiene Policies and Procedures Manual, 2007-08

Supplies for labs and clinical activities will be provided. Students have
purchased one box of # 1 film and one box #2 size film for use on patients.

**Supplementary
Textbooks and Materials**

Principles of Dental Imaging, Langland, O. and Langlais, R.
Baltimore: Williams & Wilkins, 1997.

Radiographic Imaging for Dental Auxiliaries, 3rd Ed., 1999,
Miles, D., Van Dis, M., Jensen, C., and Ferretti, A.
Philadelphia: W. B. Saunders Company, 1999.

Radiographic Imaging for the Dental Team, Mauriello, S.,
Overman, V., and Platin, E. Philadelphia: J. B. Lippincott
Company 1995

Grading Criteria: See Grade Computation Sheet. Pass = 75% (C), 80%-89%= B, 90%-100%= A

A dental hygienist must exhibit professionalism through the application of a professional code of ethics. Unprofessional conduct will be reflected in the grade and may be grounds for dismissal. Refer to Clinic Manual for further information.

A final grade below a "C" (75%) will interrupt a student's progress through the Program and may result in dismissal from the Program. If you are having trouble with this course in either the theory or clinical/laboratory activities, it is your responsibility to contact the professor immediately and arrange for tutoring or other assistance.

Instructor's Policies:

Students with prior Dental Assistant Radiology Certification through either Dental Assisting National Board (DANB) or the State of New Mexico will be allowed to test out of certain portions of the

laboratory component of this course. This does **not** mean that they can test out of the entire course. Each student will be evaluated individually to determine what part(s) of the lab they can be excused from and if the student desires “extra credit” for labs, they may make arrangements to help “tutor” fellow students during radiography labs.

Preparation: It is expected that the student will prepare for class. This includes reading or viewing the information prior to class. Students should be prepared to participate in active learning discussions in each class on the topic assigned for that day.

Attendance Policy: Students are expected to attend all regularly scheduled classes, labs and clinics and to be on time.

Quizzes and Exams: Quizzes and Exams are scheduled throughout the semester.

The textbook chapter quizzes, or other assigned study questions, must be turned on the date the Chapter/ Content is covered in class. These are “open book” quizzes and will be graded “Satisfactory/ Unsatisfactory”. Satisfactory = complete answers, “Unsatisfactory” = incomplete or inaccurate answers.

Exams are graded on a percentage basis. “Pass” = 75% or higher. Extra credit activities may be assigned at the discretion of the professor.

Make-Up Policy: A student will not be allowed to make up quizzes (a zero will be given for each missed quiz). If a major examination is missed, it is the student’s responsibility to make arrangements with the instructor and schedule a Make-Up Examination. The *Make-Up* Exam may be different from the one given to the other students and may be oral, written, clinical or a combination.

Assignments: Assignments that are not received on time will receive a 5% reduction in grade.

Lab/Clinic Usage: Students are not allowed in the lab or clinic without direct faculty supervision.

Radiographic Policy: The following guidelines will be used during radiology labs and clinics.

1. No radiographs will be exposed by a student until he/she has successfully passed an exam on ionizing radiation, radiation safety and infection control. In addition, three (3) Dexter FMX with BW must be passed with 75% accuracy on technique before exposing any patient films.
2. Students will wear a name badge and a radiation monitoring badge as part of the uniform whenever in the clinic. Pregnant students and faculty will wear fetal monitoring badges.
3. Clinic smocks are not necessary for manikin labs- only when working on partners/patients.
4. Radiographs taken on all patients must be prescribed by a dentist or dental hygiene faculty and have a signed patient consent form, a signed release for duplicate radiographs, a signed HIPAA consent form and a current, signed medical dental history.

5. All radiographic series selected for a patient must meet the “Guidelines for Prescribing Dental Radiographs.” Pregnant women will be referred out if radiographs are necessary for diagnostic purposes since this program does not provide full dental services.
6. Exposed film will be used for manikin practice. However only “in-date” film will be used for patients. Film is expensive and students are expected to use the fewest possible films to achieve an adequate radiographic survey.
7. E speed or higher film and rectangular collimators (when available) will be used to help reduce radiation exposure.
8. Lead aprons and thyroid collars will be used on all patients during radiation exposure. Except that collars will not be placed on patient’s having Panoramic surveys.
9. Retakes on humans must be approved by faculty and observed during the retake process. Retakes can only be taken when the radiograph is un-diagnostic and the area of interest is not evident somewhere else in the series. If a second retake is necessary, a faculty person will take the film with the student observing. Retakes are limited to:
 - a. 5 films for a Full Mouth Series (FMX or CMRX)
 - b. 2 films for a Bite Wing series
 - c. 1 film for a Panoramic survey or for Occlusal films
 - d. as students progress through the program the percentage of accuracy required on technique and interpretation of films will be increased with fewer retakes allowed.

Retakes will be tracked using a log that identifies the patient, number of retakes and reason for the retake so that students can learn from their mistakes. This log will be kept with other forms in the “Graduation Notebook”.

10. **All radiographs on humans must be read by a dentist for diagnosis and be documented in the patient’s chart.**
11. Referrals for needed dental care identified in radiographs must be filled out, given to the patient and documented in the chart.
- 12 Radiographic Exposure Log must be completed in the patient’s chart for every film taken on the patient.
13. All radiographs taken must be critiqued for both technique and interpretation and graded using the appropriate critique forms.
14. When it is anticipated that a referral will be made to a community dental provider double film packets will be used.
15. If duplicates need to be made, it is the student’s responsibility to make the duplicates, label them with name of the Clinic (SJC Dental Hygiene Clinic) the patient’s name and the date the films were taken and “Right Side” to properly identify the patient’s right side.

15. When radiographs are sent to another dental provider the appropriate form letter must be filled out, signed and sent with the films. Original films are sent while a duplicate copy remains in the SJC patient chart. A copy of the release form and must be placed in the chart.
16. The first several series of radiographs taken on humans must be directly supervised by a faculty person until the student can demonstrate competency at 75% accuracy on technique in 30 minutes.
17. Students and faculty will read and adhere to the Ionizing Radiation and Radiation Infection Control Policy found in the DH Student Manual. Each student and faculty should sign the training documentation form associated with this policy and have it filed in the training log.

DH 217 Radiographic Requirements: All series must be graded for technique. 75% accuracy is required to “Pass “ each requirement.

Dexter/ Manikin

- 2 FMX-no Bitewings (Parallel Technique)
- 2 FMX with Bitewings (Parallel Technique)
- 1 FMX with Bitewings (Bisecting Angle Technique)
- 2 sets of 4 Bitewings, (1 set Horizontal, 1 set Vertical)
- 1 set of Occlusal Films: 1 Maxilla/ 1 Mandible
- 4 Localization Periapical Films
- 1 Panoramic/ Demo

DH 217 Radiology Patients:

- 4 FMX with 4 Bitewings (Parallel)
- 1 set of Vertical Bitewings
- 2 sets Occlusal: 1 Max/ 1Mand. and 2 sets Pedo Bitewings (Use same patient for Occ and Pedo Bitewings)
- 2 Panoramic Films

Total 9 Patients

Graduation Requirements: The above radiographic series taken during this course will apply toward graduation requirements as long as they are passed with 75% accuracy in both technique and interpretation.

Professional Policy: All students are considered mature enough to seek faculty assistance and to monitor their own progress in meeting course requirements. Please refer to the Dental Hygiene Student Manual and the SJC Student Handbook for more information on Professional Qualities and Academic Integrity.

Course Outcomes Inventory: The effectiveness of DHYG 217 is measured by several methods:

1. Completion of all course work with a satisfactory grade.
2. Course evaluations.
3. Analysis of clinical application of material presented.
4. Scores on National and Regional Boards are reviewed and evaluated.

Accommodations Statement: Students who need accommodations (i.e. note taker, interpreter, special seating, etc.) need to provide accommodation notices to the instructor. Students can contact the Students with Disabilities on Campus (SDOC) Coordinator in the Counseling Center, located in the Clock Tower Building, to make arrangements and provide documentation in accordance with the Americans with Disabilities Act of 1990.

Graduation Notebook: The radiology requirement sheet, Radiology Patient List and Retake log and all Radiography Technique and Interpretation forms related to patients (including the laboratory exercises) must be placed in the student's Graduation Notebook at the end of the DH 217 course for ongoing review by clinical course instructors to ensure maintenance of competency in radiology.

Student Partners: Partners will not be assigned except for specific projects. Students are encouraged to work with as many different peers as possible to increase the variety of learning situations available to them.

GRADE COMPUTATION SHEET Fall' 08 DHYG 217 - DENTAL RADIOGRAPHY

This sheet must be kept current. It should be submitted during the mid-term conference and must be submitted the last day of class. Failure to do so will result in an incomplete grade. All requirements toward graduation must be copied on the 1 st Year Requirement Sheet.

NAME:

Lecture (All must score 75% or higher) Exams	Laboratory* (All must score 75% or higher) Exercises/Tests	Laboratory* (Each set must score 75%) (Dexter) Radiographs
Exam I	I	FMX #1 , No BWX (parallel)
Exam II	II	FMX #2 , No BWX (parallel)
Exam III	III	FMX #3, with BWX (parallel)
Exam IV	IV	FMX #4, with BWX (parallel)
Exam V	Total Lab Test Average:	FMX #5, with BWX (bisecting angle)
Final Exam(Must score 75% or higher.)		1st 1 set of 4 BWX (Horizontal)
Total Exam Average:		2nd 1 set of 4 BWX (Vertical)
Chapter Quizzes:		1 set Occ Films: (Max/Mand)
# Submitted out of 33		
		4 Localization PA's
		1 Pano /Demo
		Average % on Lab Films _____ = 40% of Lab Grade
Extra Credit Written : (Can only raise grade 5%)		Patients : (Must score 75% on <u>both</u> technique and intepretation)
Extra Credit Rdiographs (Can only raise grade 5%)		1st FMX with BWX
		2 nd FMX with BWX
		3rd FMX with BWX
		4th FMX with BWX
		1 Set Vertical BWX
		1st Set Occ : Max/ Mand
		2 nd Set Occ : Max/ Mand
		1st Set of 2 Pedo BWX
		2 nd Set of 2 Pedo BWX
		1st Pano
		2 nd Pano

Retake Log
Average % on Patient Films

Lecture: Total Exam Grade (5) _____ X 50% = _____
Total Quiz Grade: _____ X 32% = _____
Comprehensive Final _____ X 18% = _____
_____ **X .50** = _____

60% OF LAB GRADE: _____

Lab* Total Lab/DexterGrade _____ X 40% = _____
Total Patient Grade: _____ X 60% = _____
_____ **X .50** = _____

Final Grade: _____

The lab grade will reflect adherence to safety and infection control protocol and professionalism.*