Received Wardh 2004 Maui Community Collegeler Amnesty Program Course OutlineOs Updated & Linked To Content COWIO Grid Prepared

1.	Alpha	DENT Number 176					
	Course Title	Dental Radiology I					
	Credits	2					
	Department	Allied Health Author					
	Date of Outline	2/5/09 Effective Date Fall 2009 5-year Review Date Fall 2014					
2.	Course Description:	Provides the fundamental background and theory for the safe and effective use of radiation as it relates to dentistry. Discusses the history of x-rays, production and uses of radiation, radiographic film, exposure factors, interpretation of radiographs, radiation hygiene, anatomic landmarks, developmental disturbances, and legal considerations. Provides clinical experience in the use of x-ray units, various exposure projections and techniques, processing, mounting, and critiquing dental radiographs.					
	Cross-list						
	Contact Hours/Type	Lecture - one (1), Lab - three (3)					
3.	Pre-requisites	Admission to Dental Assisting Program					
	Pre-requisite may be wa	ved by consent 🖂 yes 🗌 no					
	Co-requisites						
	Recommended Preparat	on .					
4. Function/Designation							
`AS Allied Health - Dental Hygiene Category List Additional Programs and Category:							
AAS Program Category List Additional Programs and Category:							
	BAS Program (tegory Developmental/Remedial					
		(3)					
Ch	ancellor	Approval Date					

	Other/Additional: Explain:
$\overline{)}$	See Curriculum Action Request (CAR) form for the college-wide general education and/or program SLOS this course supports.
	 This course outline is standardized and/or the result of a community college or system-wide agreement Responsible committee: 5. Student Learning Outcomes (SLOs): List one to four inclusive SLOs.

I. Obtain full mouth, panoramic, bitewing, and occlusal surveys with diagnostically usable film.

II. Practice proper infection control, OSHA, and biohazard practices while exposing and processing radiographs.

III. Describe the process by which x-rays are produced, identifying the physical and electrical factors which alter the density or penetrability of the x-rays produced.

IV. Identify radiographic landmarks, exposure errors, and processing errors.

6. Competencies/Concepts/Issues/Skills

For assessment, link these to #7. Recommended Course Content, and #9. Recommended Course Requirements & Evaluation. Use lower case letters (a., b., c...n.) to designate competencies/skills/issues On successful completion of this course, students will be able to:

a. Describe the history of x-radiation.

b. Describe the production, characteristics, and biological effects of radiation.

c. Explain the function, components, operation of the x-ray unit, and its proper care and maintenance.

d. Demonstrate proper infection control in the darkroom and while exposing films, film developing (automatic and manual processing), duplicating, and maintenance of developer.

e. Define radiographic terms.

f. Identify the component parts of the x-ray units and explain the adjustments, which can be made to affect the quality of the radiograph.

g. Demonstrate proper evaluation of patient charts prior to radiographic procedures. Update and evaluate medical history, evaluate dental radiographic history, and check treatment plan of radiographs to be taken.

h. Define the terms used to indicate the degree of radiation production or exposure and indicate, where applicable, the allowable, dangerous, or lethal limits for each.

i. Describe an understanding of the principles of tomography and how they apply to dental panoramic x-ray units.

j. Discuss the indications for extraoral projections and apply them to clinical practice.

k. Demonstrate the use of protective equipment.

1. Demonstrate exposure of and evaluation of a panoramic radiograph.

m. Demonstrate the development of exposed radiographs to a consistent density standard while performing all darkroom procedures in a clean, safe, and organized manner.

n. Describe radiation protection and monitoring, listing the protective measures that can or must be taken to minimize radiation exposure for the patient and operator.

o. Demonstrate the proper placement of x-ray films in their mounts.

p. Describe the accepted infection control policy in taking and processing all radiographs.

q. Demonstrate the assembly of film holders.

course outline

- r. Identify anatomic landmarks and radiographic radiopaque and radiolucent landmarks of the maxilla and the mandible.
- s. Demonstrate intraoral long-cone radiographic techniques in the bitewing, periapical (paralleling and bisecting angle techniques), and occlusal surveys on a manikin.
- t. Demonstrate intraoral technique: paralleling and bisecting angle techniques.
- u. Describe image receptors and film sizes.
- v. Discuss chemistry and techniques associated with x-ray film and developing solutions.
- 7. Suggested Course Content and Approximate Time Spent on Each Topic

 Linked to #5. Student Learning Outcomes and # 6 Competencies/Skills/Issues

1 week History, characteristics, and production of radiation (I, III, a, b, e, h, k, n)

1 week The x-ray unit, its components and adjustments (I, II, III, c, d, e, f, i, l, n)

5 weeks Principles of film placement and beam angulation in various dental radiographic projections (I, II, III, IV, d, e, f, i, j, k, l, n, q, r, s, t, u)

2 weeks Biologic effects of radiation and protective measures to minimize radiation exposure (I, III, a, b, c, e, g, h, j, k, l, n, s, t, u)

1 week Dark room equipment, processing, and duplicating techniques (I, II, IV, d, e, k, m, p, v)

2 weeks Radiographic landmarks of the skull (I, III, IV, e, i, j, l, o, r, s, t)

3 weeks Prescription procedure, radiographic records, film mounting, and film evaluation for diagnostic utility (I, III, IV, e, g, j, l, o, r, s, t)

8. Text and Materials, Reference Materials, and Auxiliary Materials

Appropriate text(s) and materials will be chosen at the time the course is offered from those currently available in the field. Examples include: Howerton, L. and Iannucci, J., Dental Radiography: Principles and Techniques, current edition, Elsevier.

Bird, D. and Robinson, D., Torres and Ehrlich Modern Dental Assisting, current edition, Elsevier.

Bird, D. and Robinson, D., Student Workbook to Accompany Torres and Ehrlich Modern Dental Assisting, current edition, Elsevier.

Appropriate reference materials will be chosen at the time the course is offered from those currently available in the field. Examples include: Johnson, O. and Thomson, E., Essentials of Dental Radiography for Dental Assistants and Hygienists, current edition, Prentice Hall.

Massler, M. and Schour, I., Atlas of the Mouth, current edition, American Dental Association.

Thomson, E., Exercises in Oral Radiography Techniques: A Laboratory Manual, current edition, Prentice Hall.

Durley, C. et al., The DANB Review, current edition, Dental Assisting National Board.

Durley, C. et al., DANB's Glossary of Dental Assisting Terms, current edition, Dental Assisting National Board.

Mosby et al., Mosby's Dental Dictionary, current edition, Elsevier.

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Mosby et al., Review Questions and Answers for Dental Assisting, current edition, Elsevier.

Appropriate auxiliary materials will be chosen at the time the course is offered from those currently available in the field. Examples include: State of Hawaii Department of Commerce and Consumer Affairs, Hawaii Administrative Rules Title 16, Chapter 79, Dentists and Dental Hygienists.

State of Hawaii Department of Commerce and Consumer Affairs, Hawaii Revised Statutes Chapter 448, Dentistry.

9. Suggested Course Requirements and Evaluation

Linked to #5. Student Learning Outcomes (SLOs) and #6 Competencies/Skills/Issues

Specific course requirements are at the discretion of the instructor at the time the course is being offered.

Suggested requirements might include, but are not limited to:

- Prompt attendance is required at all class sessions.(I, II, III, IV, a v)
- Students will be responsible for completing all assigned reading material in text before each class session. (I, II, III, IV, a v)
- Complete various learning skills exercises. (I, II, III, IV, a, b, c, e, h, i, j, n, p, r, u, v)
- Complete various competency exercises. (I, II, III, IV, c, d, k, l, m, p, q, s, t)
- Complete various laboratory exercises. (I, II, III, IV, c, d, f, g, j, k, l, m, o, p, q, r, s, t, u, v)
- Complete all projects. (I, II, III, IV, a v)

EVALUATION AND GRADING

Quizzes 10% (III, IV, a, b, c, e, f, h, i, j, n, p, r, u, v) Final 20% (III, IV, a, b, c, e, f, h, i, j, n, p, r, u, v)

Radiographic mounting project 15% (IV, o, r)

Lab practicals 25% (I, II, III, IV, c, d, f, g, j, k, l, m, n, o, p, q, r, s, t, u, v)

Evaluation of films 20% (I, II, III, IV, e, l, o, r) Attendance/ Attitude 10% (I, II, III, IV, a - v)

10. Methods of Instruction

Instructional methods will vary considerably by instructor. Specific methods are at the discretion of the instructor teaching the course and might include, but are not limited to:

- Participation in class lecture/ discussion.
- Reading assigned portions in textbooks, journal articles, and/ or modules.
- · Viewing various audiovisual materials.
- Participation in class exercises such as role-plays and simulations.
- · Demonstration and simulation.
- · Practicing exposure on manikins.
- Practicing positioning on student partners.
- · Discovery learning.
- 11. Assessment of Intended Student Learning Outcomes Standards Grid attached

6.

Standard 5 Critical Thinking Outcome 5.1 Identify and state problems, issues, arguments, and questions containing in a body of information Outcome 5.2 Identify and analyze assumptions and underlying points of view relating to an issue or problem Outcome 5.3 Formulate research questions that require descriptive and explanation analyses Outcome 5.4 Recognize and understand multiple modes of inquiry, including investingative methods based on observation and analysis Outcome 5.4 Recognize and understand multiple modes of inquiry, including investingative methods based on observation and analysis Outcome 5.4 Repty problem-solving techniques and skills, including the rules of logic and logical sessumptions, issues, values, and biases through the use of appropriate conclusions Outcome 5.7 Synthesize information from various sources, drawing appropriate conclusions Outcome 5.9 Reflect upon and evaluate their thought processes, value system, and world views in comparison to those of theirs Standard 6 Creativity Standard 6 Creativity Outcome 6.1 Generate responses to problems and challenges through infutition and non-linear thinking Outcome 6.3 Explore diverse approaches to solving a problem or addressing a challenge. Outcome 6.3 Creativity Outcome 6.4 Apply creative promotibles without a preconceived purpose Outcome 6.5 Demonstrate the ability to rust and follow one's insticts in the absence of external direction Outcome 6.5 Build upon or adapt the ideas of others to create unique expressions or solutions Outcome 6.6 Build upon or adapt the ideas of others to create unique expressions or solutions	Standard 3 Information Retrieval and Technology Outcome 3.1 Use print and electronic information technology ethically and responsibly Outcome 3.2 Demonstrate knowledge of basic vocabulary, concepts, and operations of information retrieval and technology Outcome 3.3 Recognize, identify, and define an information need Outcome 3.4 Access and retrieve information litrough print and electronic medica, evaluating the accuracy and authenticity of that information Outcome 3.5 Create, manage, organize and communicate information through electronic media Outcome 3.6 Recognize changing technologies and make informed choices about their appropriateness and use Standard 4 Outcome 1.1 Communication; Outcome 4.1 Identify and analyze the audience and purpose of any intended communication Outcome 4.2 Gather, evaluate, select, and organize information for the communication Outcome 4.3 Use language techniques, and strategies appropriate to the audience and occasion Outcome 4.5 Summarize, and evaluate oral communications and ask coherent questions as needed Outcome 4.5 Summarize, analyze, and evaluate oral communications and ask coherent questions as a needed	Outcome 1.1 Use writing to discover and articulate ideas Outcome 1.2 Identify and analyze the audience and purposa for any intended communication Outcome 1.3 Choose language, style, and organization appropriate to particular purposes and audiences Outcome 1.5 Choose language, style, and organization appropriately Outcome 1.5 Express a main idea as a hiests, hypothesis, or other appropriate content Outcome 1.6 Develop a man idea dearly and concisely with appropriate content Outcome 1.7 Demonstrate massitry of interconventions of writing, including grammar, spelling, and mechanics Outcome 1.9 Develop a personal voice in written communication Outcome 2.1 Outcome 2.1 Outcome 2.1 Demonstrate massitry of mainternations and editing Outcome 2.2 Communicate dearly and concisely the methods and results of quantitative properties Outcome 2.3 Communicate dearly and concisely the methods and results of quantitative problem appropriate Outcome 2.4 Formulate and test hypotheses using numerical experimentation Outcome 2.5 Communicate dearly and concisely the methods and results of quantitative problem solving Outcome 2.6 Assess the validity of statistical conclusions	Grid of Maui Community College Student Learning Outcomes- Dental Assisting KEY: 3. Major Emphasis: The sludent is actively involved luses, reinforces, applies, and evaluated in the sludent learning outcomes. The learner outcome is the focus of the class. 1. Minor Emphasis: The sludent uses, reinforces, applies and is evaluated by this learner outcome, but it is not the focus of the class. 1. Minor Emphasis: The sludent uses, reinforces, applies and is evaluated by this learner outcome, but it is not the focus of the class. 1. Minor Emphasis: The sludent is revisited an opportunity to use, reinforce, and apply this learner outcome, but does not get evaluated on this learner outcome. 1. No Emphasis: The sludent is revisited an opportunity to use, reinforce, and apply this learner outcome, but does not get evaluated on this learner outcome. 1. Demonstrate a understanding of dental assistant roles including the legal, professional, and ethical responsibilities within the community. 1. Demonstrate a commitment to life long learning and advancing competency over a lifetime of clinical practice. 1. Standard 1. Written Communication.
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