

Maui Community College
Course Outline

Received August 2009
Under Amnesty Program
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CLOs Updated & Linked To Content
COWIQ Grid Prepared

1. Alpha DENT Number 177
Course Title Dental Radiology II
Credits 1
Department Allied Health Author
Date of Outline 2/5/09 Effective Date Spring 2010 5-year Review Date Spring 2015

2. Course Description: Discusses evaluation of film quality, recognition of anomalies and variations in tissue density. Introduces specialized procedures for the pedodontic, endodontic, and edentulous patient. Explains forensic and legal considerations, and introduces principles of panoramic and cephalometric film.

Cross-list

Contact Hours/Type Lab - three (3)

3. Pre-requisites DENT 176 with C or better

Pre-requisite may be waived by consent yes no

Co-requisites

Recommended Preparation

4. Function/Designation AA Category Additional Category

AS Allied Health - Dental Hygiene Category List Additional Programs and Category:

AAS Program Category List Additional Programs and Category:

BAS Program Category Developmental/Remedial

Other/Additional: Explain:



Chancellor


Approval Date

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.

For assessment, link these to #7. Recommended Course Content, and #9. Recommended Course Requirements & Evaluation. Use roman numerals (I, II, III.) to designate SLOs

On successful completion of this course, students will be able to:

- I. Obtain full-mouth, panoramic, cephalometric, bitewing, and occlusal surveys with diagnostically usable film.
- II. Transcribe and maintain clinical records that record pertinent data and information required for procedures, film evaluation, and mailing.
- III. Describe legal and safety requirements related to operation of radiographic equipment.
- IV. Prepare for successful completion of the radiology portion of the Dental Assisting National Board Certification Exam (DANB).

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. Identify on clinical radiographs all diagnostically unusable films, indicate the specific fault or limitation, recognize and describe the improper procedure involved, and suggest the procedural correction needed to improve the quality of the radiograph.
- b. Analyze and use modified techniques to compensate for or overcome such challenges as: narrow arch, shallow floor of the mouth, overlapping and linguoversion, crossbite occlusions or severe malocclusion, gagging, macroglossia, and excessive salivation.
- c. Differentiate normal and abnormal densities radiographically evident in: alveolar bone, cortical and cancellous bone, enamel, dentin, cementum, interdental septa, sutures, cone processes, foramina, healing sockets, cysts, tumors, and abscesses, supernumerary teeth, and other developmental conditions.
- d. Describe or perform the specialized procedures for the pedodontic patient.
- e. Describe or perform on mounted skull the specialized procedures for the endodontic patient, including pulp or root canal measurements and radiographic examination for special closure.
- f. Describe or perform the specialized techniques for the edentulous patient including occlusal or periapical pathologic survey.
- g. Describe implant radiology and review various imaging modalities, from intraoral radiographs to computed tomography imaging to best understand and evaluate various implant sites.
- h. Describe cephalometric and panoramic radiographic techniques and list the uses, advantages, and disadvantages of each.
- i. Identify the major anatomic landmarks, soft tissue shadows, and artifacts on a panoramic survey.
- j. Identify the five major measurement points from a cephalometric survey; take and record several designated measurements.
- k. Demonstrate the exposure of digital periapical and panoramic films; and understand the principles of digital radiography.

- l. Describe the legal requirements for: operation of radiographic equipment, performing a radiographic service for a patient, use and ownership of radiographs, and record-keeping relative to radiographic procedures.
- m. Summarize the role of the dental assistant in properly observing radiation safety techniques for the patient as well as the occupational worker.
- n. Describe the role of quality radiographs in the diagnosis of dental disease such as caries, periodontal disease, and pathology.

7. Suggested Course Content and Approximate Time Spent on Each Topic

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

- 1 week Principles of cephalometric and panoramic radiography including introduction to the equipment and demonstration of the technique (I, III, IV, a, c, g, h, i, j, k, l, m, n)
- 1 week Radiographic comparison of normal and abnormal tissues (I, II, IV, c, f, g, i, n)
- 9 weeks Clinical experience in long cone technique: bitewing, periapical full-mouth, and occlusal surveys; panoramic and cephalometric surveys (I, II, III, IV, a, b, c, d, e, f, g, h, i, j, k, l, m, n)
- 2 weeks Evaluation of films for recognition of processing errors, improper film placement, improper angulation, and improper exposure; adjustment in technique for unusual problems (I, III, IV, a, b, c, i, j, n)
- 1 week Special radiographic surveys and techniques for the pedodontic patient, endodontic patient, and edentulous patient (I, III, IV, b, d, e, f, n)
- 1 week Legal aspects of radiographic procedures (I, II, III, IV, l, m, n)

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.

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 - n)
- Students will be responsible for completing all assigned reading material in text before each class session. (I, II, III, IV, a - n)
- Complete various learning skills exercises. (II, III, IV, a, c, g, h, i, j, l, m, n)
- Complete various competency exercises. (I, II, III, b, d, e, f, k)
- Complete various laboratory exercises. (I, II, III, IV, a, b, c, f, h, i, j, k, l, m, n)
- Complete all projects. (I, II, III, IV, a - n)

EVALUATION AND GRADING

Quizzes	10% (II, II, III, IV, a - n)
Final	20% (II, II, III, IV, a - n)
Radiographic mounting project	15% (II, IV, a, c, n)
Lab practicals	25% (I, II, III, IV, a, b, c, f, h, i, j, k, l, m, n)
Oral report	20% (I, II, III, IV, a - n)
Attendance/ Attitude	10% (I, II, III, IV, a - n)

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 positioning on student partners.
- Practicing exposure on manikins and patients.
- Guest speakers and field trips to specialty offices.
- Discovery learning.

11. Assessment of Intended Student Learning Outcomes Standards Grid attached

Grid of Maui Community College Student Learning Outcomes- Dental Assisting

KEY: 3 Major Emphasis: The student is actively numbered (used, reinforced, applied, and evaluated) in the student learning outcomes. The learner outcome is the focus of the class.
2 Moderate Emphasis: The student uses, reinforces, applies and is evaluated by this learner outcome, but it is not the focus of the class.
1 Minor Emphasis: The student is given an opportunity to use, reinforce, and apply this learner outcome but does not get evaluated on this learner outcome.
0 No Emphasis: The student does not address this learner outcome.

Dental Assisting Educational Standards

i. Demonstrate an understanding of dental assistant roles including the legal, professional, and ethical responsibilities within the community	DENT 120	DENT 150	DENT 151	DENT 152	DENT 164	DENT 165	DENT 176	DENT 177
ii. Demonstrate basic theoretical knowledge and skills in biological science, dental radiology, chairside dental assisting, and business office procedures	2	3	3	3	3	3	3	3
iii. Demonstrate a commitment to life long learning and advancing competency over a lifetime of clinical practice	3	3	3	3	3	3	3	3

General Education Standards

Standard 1 - Written Communication

Outcome 1.1 Use writing to discover and articulate ideas	DENT 120	DENT 150	DENT 151	DENT 152	DENT 164	DENT 165	DENT 176	DENT 177
Outcome 1.2 Identify and analyze the audience and purpose for any intended communication	3	3	3	2	3	3	0	1
Outcome 1.3 Choose language, style, and organization appropriate to particular purposes and audiences	3	3	3	2	3	0	0	1
Outcome 1.4 Gather information and document sources appropriately	3	3	3	3	3	0	0	1
Outcome 1.5 Express a main idea as a thesis, hypothesis, or other appropriate statement	3	3	3	3	3	0	0	2
Outcome 1.6 Develop a main idea clearly and concisely with appropriate content	1	1	0	0	0	0	0	1
Outcome 1.7 Demonstrate a mastery of the conventions of writing, including grammar, spelling, and mechanics	3	3	3	0	0	0	0	1
Outcome 1.8 Demonstrate proficiency in revision and editing	3	3	3	0	1	0	0	1
Outcome 1.9 Develop a personal voice in written communication	3	3	3	0	3	0	0	1

Standard 2 - Quantiles Reasoning

Outcome 2.1 Apply numeric, graphic, and symbolic skills and other forms of quantitative reasoning accurately and appropriately	3	3	1	3	3	0	0	3
Outcome 2.2 Demonstrate mastery of mathematical concepts, skills, and applications, using technology when appropriate	3	3	0	3	3	0	0	3
Outcome 2.3 Communicate clearly and concisely the methods and results of quantitative problem solving	3	3	3	3	3	0	3	3
Outcome 2.4 Formulate and test hypotheses using numerical experimentation	0	0	2	0	0	0	0	3
Outcome 2.5 Define quantitative issues and problems, gather relevant information, analyze that information, and present results	2	2	1	0	0	0	0	3
Outcome 2.6 Assess the validity of statistical conclusions	0	0	1	0	0	0	0	0

Standard 3 - Information Retrieval and Technology

Outcome 3.1 Use print and electronic information technology ethically and responsibly	3	3	3	3	3	0	0	2
Outcome 3.2 Demonstrate knowledge of basic vocabulary, concepts, and operations of information retrieval and technology	3	3	3	0	2	0	0	2
Outcome 3.3 Recognize, identify, and define an information need	3	3	3	0	3	0	0	1
Outcome 3.4 Create and retrieve information through print and electronic media, evaluating the accuracy and authenticity of that information	3	3	3	0	1	0	0	2
Outcome 3.5 Organize, manage, organize and communicate information through electronic media	3	3	3	0	0	0	0	1
Outcome 3.6 Recognize changing technologies and make informed choices about their appropriateness and use	2	2	3	2	2	0	0	2

Standard 4 - Oral Communication

Outcome 4.1 Identify and analyze the audience and purpose of any intended communication	3	3	3	3	2	2	2	3
Outcome 4.2 Gather, evaluate, select, and organize information for the communication	3	3	3	3	2	2	2	3
Outcome 4.3 Use language techniques and strategies appropriate to the audience and occasion	3	3	3	3	2	2	2	3
Outcome 4.4 Speak clearly and confidently, using the voice, volume, tone, and articulation appropriate to the audience and occasion	3	3	3	3	2	2	2	3
Outcome 4.5 Summarize, analyze, and evaluate oral communications and ask coherent questions as needed	3	3	3	3	2	2	2	3
Outcome 4.6 Use competent oral expression to initiate and sustain discussions	3	3	3	3	2	2	2	3

Standard 5 - Critical Thinking

Outcome 5.1 Identify and state problems, issues, arguments, and questions containing in a body of information	3	3	3	3	2	2	2	3
Outcome 5.2 Identify and analyze assumptions and underlying points of view relating to an issue or problem	3	3	3	3	0	0	0	3
Outcome 5.3 Formulate research questions that require descriptive and explanatory analysis	0	0	2	0	0	0	0	0
Outcome 5.4 Recognize and understand multiple modes of inquiry, including investigative methods based on observation and analysis	1	1	3	3	0	0	0	1
Outcome 5.5 Evaluate a problem, distinguishing between relevant and irrelevant facts, opinions, assumptions, issues, values, and biases through the use of appropriate evidence	0	3	3	3	2	2	2	1
Outcome 5.6 Apply problem-solving techniques and skills, including the rules of logic and logical sequence	3	3	3	3	2	2	2	3
Outcome 5.7 Synthesize information from various sources, drawing appropriate conclusions	3	3	3	3	2	2	2	3
Outcome 5.8 Communicate clearly and concisely the methods and results of logical reasoning	3	3	3	3	2	2	2	3
Outcome 5.9 Reflect upon and evaluate their thought processes, value system, and world views in comparison to those of theirs	3	3	3	3	2	2	2	3

Standard 6 - Creativity

Outcome 6.1 Generate responses to problems and challenges through intuition and non-linear thinking	2	2	1	1	1	1	1	1
Outcome 6.2 Explore diverse approaches to solving a problem or addressing a challenge	3	3	3	2	2	1	1	2
Outcome 6.3 Engage in activities without a preconceived purpose	0	0	0	0	0	0	0	0
Outcome 6.4 Apply creative principles to discover and express new ideas	2	0	0	0	2	2	3	3
Outcome 6.5 Demonstrate the ability to trust and follow one's instincts in the absence of external direction	2	0	0	0	0	0	0	1
Outcome 6.6 Build upon or adapt the ideas of others to create unique expressions or solutions	2	1	0	0	0	0	0	2