

PROFESSIONAL EDUCATION

INSTITUTIONAL COURSE NUMBER

SYLLABUS: DENTAL RADIOGRAPHY

Prototypical Syllabus

Course Director: _____

Preferred Mode of Communication: _____

Office Location: _____

Office Hours: _____

Course Objective

The overall course objective, reflected in the 12 modules, is to (1) present a review of general principles of dental radiology, (2) understand the basic principles of digital imaging and 3D imaging in dentistry, (3) discuss the basic principles of radiographic interpretation, and (4) provide best available evidence-based information on radiographic selection (prescribing) criteria.

Primary Educational Goal

To provide a framework (1) for learning the basic terminology, facts, theories, methods and other principals associated with dental radiology; (2) apply the knowledge learned to concrete or particular situations in a clinical setting; and (3) evaluate the learning experience from the perspective of the specified course objectives.

Educational Outcomes

Upon completion of the 12 modules, participants should be able to:

- Describe how x-rays are generated, the components of the x-ray tube and how it operates; discuss the characteristics of the X-ray beam and how image contrast is obtained.
- Discuss radiographic image formation on various receptors, the interaction between x-radiation and the object to be radiographed, and factors that affect image quality.
- Discuss digital imaging; contrast radiation exposure of patients with digital versus conventional radiography; and discuss the advantages and disadvantages.
- Discuss image receptors and the principles of accurate image projection; describe intraoral radiographic techniques; and identify and correct radiographic image errors.
- Discuss normal anatomy observed in panoramic images; determine the cause and appearance of various technique errors; discuss the importance of radiographs in patient education; and understand the benefit of panoramic radiographs to fulfill the principles of ALARA (As Low As Reasonably Achievable).
- Discuss the selection criteria for panoramic imaging; compare and contrast panoramic and intraoral imaging; discuss the advantages and limitations of panoramic radiography; and identify and correct common panoramic image errors.
- Discuss radiation safety and the need for radiographs in pediatric dentistry with parents; understand the basis for guidelines intended to reduce radiation exposure; and implement and use innovative radiographic techniques in pediatric patient.

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- Describe CBCT technology and how it differs from other intraoral or extraoral dental imaging; discuss indications for the use of CBCT scan and options to limit radiation exposure to the patient; develop a systematic approach to interpret a CBCT scan; and discuss the ethical and medico-legal considerations of CBCT.
- Discuss general concepts of radiographic interpretations; describe the radiographic appearance of dentigerous cysts, mesiodens, sialoliths, odontomas, and idiopathic osteosclerosis; and discuss their origin and clinical relevance.
- Discuss the biological effect of ionizing radiation on various cell types with special reference to radiation effects on normal oral tissues and malignant cells.

Outcome Assessment

Predicated on institutional policy, for example:

Outcome assessment related to knowledge gained from the online modules will be based on multiple-choice examinations at the end each module. In addition, case-based small group discussions will be used to appraise knowledge of therapeutic concepts - judged on a pass/fail scale. Students must meet all educational goals to pass the course.

Grading Policy

Predicated on institutional policy, for example:

The responsibility for assigning grades rests exclusively with the Course Director. Students are expected to successfully complete all ten online modules within a specified time period and participate in all small group discussions. Students are allowed as many attempts on each module as may be necessary to obtain a passing grade.

Grade Scale

Predicated on institutional policy, for example:

- The following letter grades will be used to list final course grades on student transcripts: A, B, C, D, F, and I (incomplete).
- The Course Director will use the following grading scale when converting percentages to letter grades: A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, and F = < 59%.
- For calculation of a student's GPA: A=4, B=3, C=2, D=1, F=0

Missed Exam/Practicum Policy

Predicated on institutional policy, for example:

If a student is unable to complete the online learning modules in a timely fashion or attend the small group discussions, the student must so inform the Course Director and the Office of Student Affairs in writing. Failure to pass the written examination or participate in small group discussions will result in an "F" grade in the course.

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Remediation Policy

Predicated on institutional policy, for example:

The decision to allow a student to remediate an “F” grade rests with the Academic Performance Committee. Remediation may be recommended according to the following criteria:

- A student with an “F” grade may be allowed to remediate within a specified period of time and will be awarded a grade of “D” or “C.”
- If a student has less than a 2.0 GPA, but has no “F” grades, the Academic Performance Committee may allow remediation for a “D” grade provided a “C” grade would bring the GPA up to a 2.0.

Attendance Policy

Predicated on institutional policy, for example:

The course is designed to accommodate self-paced learning consisting of online modules augmented by case-based small group discussions. Completion of each of the online module is expected prior to the corresponding small group discussion.

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Course Contents

Module	Title
Module I	ce570 - Basic Radiation Physics (2 hrs)
Module II	ce571 - The Radiographic Image (1 hr)
Module III	ce584 - Radiographic Selection Criteria (4 hrs)
Module IV	ce559 - Intraoral Imaging: Basic Principles, Techniques and Error Correction (2 hrs)
Module V	ce601 - Intraoral Radiographic Anatomy (2 hrs)
Module VI	ce533 - Panoramic Radiographs: Technique & Anatomy Review (2 hrs)
Module VII	ce589 - Practical Panoramic Imaging (3 hrs)
Module VIII	ce63 - Radiographic Techniques for the Pediatric Patient (2 hrs)
Module IX	ce531 - Cone-Beam Computed Tomography (CBCT) Applications in Dentistry (2 hrs)
Module X	ce572 - Biological Effects of Radiation (1 hr)
Module XI	ce651 - Anomalies of Tooth Structure (3 hrs)
Module XII	ce660 - Intraoral Imaging Techniques: Beyond the Textbook (2 hrs)

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Other Resources

- Commission on Dental Accreditation. American Dental Association. Accreditation Standards for Dental Education Programs – July 1, 2013.
http://www.ada.org/~media/CODA/Files/predoc_2013.ashx
- Commission on Dental Accreditation. American Dental Association. Accreditation Standards for Dental Hygiene Education Programs – January 1, 2013.
<http://www.ada.org/~media/coda/files/dh.ashx>
- Commission on Dental Accreditation. American Dental Association. Accreditation Standards for Dental Assisting Education Programs – January 1, 2014.
<http://www.ada.org/~media/CODA/Files/da.ashx>
- Commission on Dental Accreditation of Canada. Accreditation Requirements for Dental Education Programs – Nov. 30, 2013.
www.cda-adc.ca/cdacweb/en
- Commission on Dental Accreditation of Canada. Accreditation Requirements for Dental Hygiene Education Programs – Nov. 30, 2011.
www.cda-adc.ca/cdacweb/en
- Commission on Dental Accreditation of Canada. Accreditation Requirements for Dental Assisting Education Programs – Nov. 30, 2010.
www.cda-adc.ca/cdacweb/en