DEN8765L Clinical Radiology 2: Radiographic Technique & Interpretation 2

Spring 2021

Course Description:

The student will expose, mount, and critique radiographic surveys for assigned patients; develop appropriate judgment and reasoning to declare a radiograph clinically acceptable as outlined by “criteria of radiographic acceptability”; and demonstrate proper radiation hygiene, infection control techniques, and appropriate patient management. Additionally, the student will demonstrate a thorough knowledge of radiologic normal anatomy; complete a radiologic interpretation/consult on all baseline radiologic surveys including a description of any observed abnormality(s) of the dentition, supporting structures, the temporomandibular joints, and the paranasal sinuses concluding with a differential diagnosis/impression when appropriate.

I. General Information

Course Director:

Course Director: Rutvi Vyas
Office:  
Email: Rvyas@dental.ufl.edu
Phone: (352) 273-8484
Course Credits: 1
Semester: Spring

Contributing Faculty

Anita Gohel (352) 273-6775 AGohel@dental.ufl.edu
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Support Staff
II. Course Goals

The goal of the clinical radiology course is to contribute to the development of student competency in prescribing, performing, and interpreting a radiographic examination appropriate for the patient.

III. Course Overview

Students must complete radiographic interpretations on all comprehensive care patients through semester 11.

Students must watch the orientation video on Canvas.

Students must do a case interpretation assignment on canvas.

IV. Course Outline

Students are to expose, mount, and critique radiographic surveys for assigned comprehensive care patients needing radiographs through semester 11 and interpret a minimum of one CBCT. Additionally, students are to write via computer programs provided, a formal written interpretation of all assigned patients' radiographs stating a preamble (quality of films), findings, and conclusions. These are individually reviewed with radiology faculty and residents.

V. Course Material


UFCD Criteria of Radiographic Acceptability (See Document Section)

Optional resource:

HSC Dental Library Guide
VI. Course Objectives

**Students will apply objectives learned in DEN 6301C.**

**Radiographic Technique**

The radiographs will be evaluated based on the performance criteria and a student self-evaluation.

Performance Criteria:

2. The student must review and be knowledgeable of all intraoral/extraoral techniques and radiographic anatomy prior to scheduling the interpretation.

3. The student must complete the exposure, scanning, and mounting of digital images using proper sterilization/disinfection and barrier protection techniques.

4. The student must demonstrate technical proficiency by completing all attempted images at a clinically acceptable level of competency. (Example: a 20 film FMS must have TWO or fewer retakes to receive the minimum passing grade.)

5. A clinically acceptable digital image must have characteristics as defined by the "Criteria of Radiographic Acceptability" handout (In Document Section in ECO under 7762L) and as summarized below:
   a. Proper image density and contrast
   b. Appropriate teeth and supporting bone demonstrated
   c. No overlapping of interproximal spaces
   d. Anatomically accurate images
   e. Apices of all examined teeth on images or on at least one film of a radiographic series
   f. No digital technique errors that affect diagnostic quality.

**Radiologic Interpretation**

Students will write a detailed radiographic interpretation on all assigned patients utilizing the online *Axium Undergraduate Radiology Interpretation* Form. All sections must be filled in with full sentences using proper grammar and punctuation. The form has two parts, Panoramic and Intraoral. The left side bar will indicate the issues to be reviewed. Write none or N/A for those areas that have no positive findings. Refer to ECO's DEN8765 *Course Documents* section for help. Cases will be reviewed on a one-to-one basis with radiology faculty.

Performance Criteria:

1. A prerequisite for any interpretation will be a **thorough knowledge of normal radiologic anatomy**.
2. Each radiographic image series must be properly arranged in its template.
3. Interpretation summary must include the following:
   a. All requested information.
   b. Complete description of radiologic findings.
   c. Use of differential diagnosis or radiologic impression of findings.
   d. Recommendations for additional and future radiographic examinations.
   e. Comparisons to previous radiographs in order to evaluate disease progression.
   f. Impression.

Cone Beam CT Interpretation

Students will write a detailed radiographic interpretation on assigned cases.

VII. Course Competencies

This course contributes to teaching to the following competencies.

- **Domain I**: Professionalism – Apply standards of care in an ethical and medicolegal context to assure high quality patient care, appropriate informed consent, risk management, quality assurance and record keeping and delivered within the scope of the dentist’s competence in a patient-centered environment that interfaces with diverse patient populations.
  - 1. **Ethical Standards**: Apply ethical standards as a professional.
  - 2. **Legal Standards**: Apply legal standards (state and federal regulations) to professional practice.

- **Domain II**: Health Promotion and Maintenance - Educate patients and the community, based upon scientific inquiry, critical thinking and outcomes assessments, about the etiology of oral disease. Promote preventive interventions and effectively work with patients and other health care professionals to achieve and maintain a state of optimal oral health through evidence-based care.
  - 3. **Communication and Interpersonal Skills**: Demonstrate culturally sensitive patient-centered communication using the scientific and lay literature and behavioral principles and strategies.
  - 4. **Critical Thinking**: Apply self-assessment, evidence-based decision making, problem solving skills and biomedical science knowledge in clinical patient care.
  - 6. **Practice Management**: Apply business principles, human resource skills, and the human and technologic resources to evaluate and manage oral health care delivery models and function as the leader of the oral health care team.
  - 7. **Patient Management**: Apply behavioral and communicative management skills during clinical patient care.
• **Domain III:** Health Assessment – Recognize systemic diseases, substance and patient abuse and evaluate the patient’s medical and oral condition, plan treatment needs and refer, when appropriate.
  - **9. Examination of the Patient:** Perform an evidence-based comprehensive patient evaluation to include patient history including medications, chief complaint(s), medical, oral and extraoral conditions, biological, behavioral, cultural, socioeconomic information and consultations(s) to assess the patient’s prognosis and treatment risks.
  - **10. Diagnosis:** Interpret and correlate findings from the patient history, interview, clinical and radiographic examinations, and other diagnostic tests to accurately assess patients with special needs and for all other patients across the lifespan determine a differential, provisional, or definitive diagnosis.
  - **11. Treatment Planning:** Develop properly sequenced treatment and/or referral plan options, as appropriate, to achieve patient satisfaction that includes obtaining informed consent; and modify the accepted plan, when appropriate.
  - **12. Emergency Treatment:** Prevent, recognize and manage dental and medical emergencies in the office.

• **Domain IV:** Health Rehabilitation – Using universal infection control guidelines and managing the patient’s anxiety and pain, perform procedures and restore the patient to oral health or refer appropriately.
  - **18. Diagnosis and manage limited developmental or acquired occlusal abnormalities.**
  - **19. Prevent, diagnose, and manage pulpal and periradicular diseases.**
  - **20. Manage oral mucosal and osseous diseases or disorders, including oral cancer.**

**VIII. Evaluation**

Students will perform intra & extra oral radiographic procedures through semester 9-11. There are NO minimal requirements for radiographic technique to be completed. Radiographs taken in Radiology must be graded for credit. Each student will be required to complete 2 complex interpretations in Radiology. (Complex interpretation case would include findings in addition to caries, periodontal disease and/or small periapical pathoses)

Students can view radiology grade snapshots in their Axium Personal Planner.

Students are expected to finish the interpretation of assigned cases and submit them via canvas within the set timeline.

**Grading Criteria: Radiographic Technique**

4 = *Completed patient images (both extraoral and/or intraoral with NO retakes and: (a). Demonstrated proper patient management and treatment during the procedure at all times.
(b). Student demonstrates proper radiation hygiene for himself/herself and his/her patient (lead aprons if requested) at all times.

(c). Demonstrated proper barrier technique at all times in the clinic and "dim room" (digital) as outlined in the clinic manual "Infection Control Policy." (Improper barrier technique will result in automatic failure for that case.)

(d). Demonstrated proper judgment and reasoning to declare an image clinically acceptable even though not "ideal" as outlined in "Criteria of Radiographic Acceptability.

(e). Answered all related questions on technique and normal radiographic anatomy that was asked by faculty.

3 =*Completed patient images with minimal retakes [2 images for FMS] but was able to recognize the need for retake(s) and successfully identified error type(s).

*Completed retakes successfully without assistance.

*Satisfied (a), (b), (c) above.

*Was able to answer all questions(e).

2 =*Completed patient images with minimal retakes (less than 10%) but failed to recognize need for retake(s) or could not determine error type(s).

*Completed retakes without assistance.

*Satisfied (a), (b), (c) above.

*Was able to answer most questions (e).

1 =*Completed patient images with greater than 10% retake rate. Did not recognize need for retake(s) or could not determine error(s).

*Needed assistance for retakes that were not recognized and/or result(s) lead to additional retake(s).

*Did not satisfy (a) or (b) above and/or could not answer any questions posed concerning technique and/or anatomy.

*Did not complete patient images or obtained a large number of retakes due to gross errors in judgment, technique, or patient management.

*Did not maintain proper infection control barrier techniques (c).

*Determined that student was ill-prepared to attend rotation.

I =Student did not attend semester 9 rotation.

Course Grade: Each case graded for technique will be assigned a numerical score at the time of faculty review via Axium. Students must complete a self-assessment in Axium prior to faculty
evaluation. Scores will be recorded for Semesters Nine through Eleven. At the end of Semester Eleven, final grades will be obtained weighting each area of activity as follows:

**Grading Criteria: Radiographic Interpretation**

4=(a) Completed the radiologic interpretation/consult on all baseline radiographic surveys in patient pool. (b) Images were properly arranged. (c) Demonstrated a thorough knowledge of radiographic normal anatomy. (d) Described all findings for maxillary sinuses, jaws, and teeth as requested in Undergraduate Interp Form. (e) Described, when appropriate, the size, shape, borders, and relative radiodensity of all lesions. (f) Described all abnormalities of dentition including tooth number(s), surface(s), and/or quadrants. (g) When appropriate, provided differential diagnoses and was able to provide an explanation when asked.

3=*Demonstrated a thorough knowledge of normal radiologic anatomy.

*Interpretation needed minimal modification of findings, descriptions(s) or differentials(s) as described above in (d), (e), (f), and (g).

*Was able to provide MOST explanations(s) when asked about differential diagnoses.

*Satisfied (a) and (b) above.

2=*Demonstrated a basic knowledge of normal radiologic anatomy.

*Interpretation needed moderate modification of findings, descriptions(s) or differentials(s) as described above in (d), (e), (f), and (g).

1=*Interpretation needed a great deal of modification.

*Did not provide a differential diagnosis or was unable to provide adequate explanations when asked about differential diagnosis.

*Failed to satisfy (b) above.

*Demonstrated little knowledge of normal radiologic anatomy.

*Failed to recognize or describe adequately radiologic findings on images.

After the student "writes-up" the interpretation on the Undergraduate Interpretation Form, the student will review with radiology faculty on a one-to-one basis. A grade will be given in Axium.

For the assignment, the write up will be submitted via canvas.

**Grade weights:**

It is expected that students will maintain competency in radiographic technique and interpretation.

Student radiologic grades will be averaged toward a final grade.
Remediation:

Students that receive an "E" grade in the course must meet with the Course Director and will complete additional radiographic technique and interpretation assignments.

“Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://ufl.bluera.com/ufl/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.”

IX. Administrative Practices

Administrative practices for all UFCD courses are universally applied. Exceptions to or deviations from these practices are stated in the individual syllabi by the course director. When not individually stated in the syllabus, course administrative practices default to those identified under "Course Policies" on the DMD Student Website:

https://dental.ufl.edu/education/dmd-program/course-polices/

X. Grade Scale

DEN8765L Grade Scale

<table>
<thead>
<tr>
<th>Method</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
<td>4</td>
</tr>
<tr>
<td>Tolerance</td>
<td>0 (Final letter grades within this range will be rounded up.)</td>
</tr>
<tr>
<td>A</td>
<td>3.5 - 4 (87.5-100)</td>
</tr>
<tr>
<td>A-</td>
<td>3.25 - 3.5 (81.25-87.5)</td>
</tr>
<tr>
<td>B+</td>
<td>3 - 3.25 (75-81.25)</td>
</tr>
<tr>
<td>B</td>
<td>2.75 - 3 (68.75-75)</td>
</tr>
</tbody>
</table>
B- 2.5 - 2.75 (62.5-68.75)
C+ 2.25 - 2.5 (56.25-68.75)
C  2 - 2.25 (50-56.25)
E  0 - 2 (0-50)