2-Week Virtual Radiology Curriculum for Medical Students

Adapted by: Prof. Ben Taragin, MD, FACR

**Hours of instruction:** 2 Weeks, daily instruction Monday – Friday

**Language of instruction:** English

**Course credit:** All credit for the course is the responsibility of the institution. ACR does not provide any course completion, certificates, or credit.

**Course description:**
This e-course is adapted from:

An Internet-Based Radiology Course in Medical School Andrew George Alexander, MD, Deborah Deas, MD, PhD, and Paul Eric Lyons, MD

A Vertically Integrated Online Radiology Curriculum Developed as a Cognitive Apprenticeship: Impact on Student Performance and Learning Jennifer E. Lim-Dunham, MD, David C. Ensminger, PhD, John A. McNulty, PhD, Amy E. Hoyt, MEd, Arcot J. Chandrasekhar, MD

Implementation of a new undergraduate radiology curriculum: experience at the University of British Columbia. Lee JS, Aldrich JE, Eftekhari A, Nicolaou S, Müller NL.

**Aim of the course:**
To gain an understanding of the use of imaging techniques in modern medicine.

**Objectives of the course:**
Through independent required reading assignments, online modules, and on-line scenarios, students will learn to incorporate evidence-based strategies for imaging services, while experiencing the science and diversity of modern imaging.

1. **Knowledge for Practice**
   a. Know critical and high priority imaging findings and diagnoses and understand basic interpretive techniques in each subspecialty area.
   b. Know the indications for the most important imaging examinations in each of the Radiology subspecialty areas.
   c. Demonstrate knowledge of human anatomy by recognizing key structures on various imaging modalities in each of the Radiology subspecialty content areas.
2. Patient Care (Problem Solving and Clinical Skills)
   a. Regard the critical importance of useful clinical history in imaging interpretation.
   b. Recognize the consequences of radiation in humans of different genders and ages.
   c. Understand the effects of radiographic contrast on patients with kidney disease.

3. Practice-Based Learning and Improvement
   a. Describe the common imaging findings of at least one pathologic entity, present an imaging.
   b. Present differential diagnosis of these findings and demonstrate understanding of the appropriate imaging evaluation and involved pathophysiology.

4. Systems-Based Practice
   a. Understand the role of the radiologist in the care of patients undergoing imaging evaluation and/or image guided procedures for whom such evaluation or procedures are being considered.
   b. Know the relative costs associated with radiologic testing.
   c. Understand the role that false positive and false negative results from mammography have on recommendations for screening.

5. Interpersonal and Communication Skills
   a. Effectively advise patients and colleagues on the risks, benefits, limitations, and indications of each of the most common imaging examinations.
   b. Demonstrate understanding of the important role of communication in radiology with specific emphasis on the radiology report, urgent or unexpected findings, recommendations for follow-up imaging or procedures, and doctor patient communication.

6. Professionalism Demonstrate
   a. Understanding of the principles of mutual respect, honesty, and discretion in the use of patient clinical and imaging data, during lecture, as a part of the clinical radiology team, and when interacting with referring clinicians and non-radiology colleagues and support staff.

7. Interprofessional Collaboration
   a. Demonstrate the ability to engage in an Interprofessional team in a manner that optimizes safe, effective patient and population-centered care.
   b. Personal and Professional Development Demonstrate trustworthiness that makes colleagues feel secure when one is responsible for the care of patients.

Teaching arrangement and method of instruction:
Students will be involved in internet-based small group sessions with classmates and radiology specialists. Coursework is comprised of online learning resources, individual textbook reading and online interactive materials.
Presentations:
Each student will present an actual case history along with associated imaging studies. The student will lead the Problem-Based Learning discussion through the differential diagnosis to its conclusion, using ACR Appropriateness Criteria, and actual images with interpretations.

Assessment:
- MRI and Radiation Safety Quiz (Passing is Mandatory)
- Each student will present an actual case history from their own current third- or fourth-year clinical experience (with HIPAA information redacted). A 5-minute student presentation on a self-selected case history presented during the second week (20%)
- Completion of online quizzes (measuring completion of required readings and modules) (20%)
- Completion of online modules (40%)
- Final examination consisting of NBME (or NMBE like) questions based on information and images covered in online material (20%)

Students are required to pass each of the separate components to pass the course.

Module content \ schedule:

Day 1: Introduction to Radiology, Imaging and Radiation
Day 2: Introduction (Continued) and Introduction to Chest Radiology
Day 3: Deep Dive into Pulmonary Embolism
Day 4: Ultrasound
Day 5: Nuclear Medicine
Day 6: Pediatrics
Day 7: Abdominal Imaging & Deep Dive on Appendicitis
Day 8: Neuroradiology: Recognizing Some Common Causes of Intracranial Pathology
Day 9: MRI
Day 10: Radiology exam, assessments