Y34 Radiology
Course ID: MED 797/997D
Discipline: Medicine
Prerequisites: Any two core clerkships (exception Year 4 standing at St. John)
Available Sites: Detroit (Ascension St. John Hospital), Lapeer, Midland, Mount Pleasant, Saginaw
Duration: 2 or 4 weeks, Detroit offers 4-week increment only

Description
Radiology and associated medical imaging is vital to all aspects of healthcare, and students will be exposed to imaging in nearly all clinical clerkships. However, we believe a dedicated elective in medical imaging will provide more in-depth training than can be provided otherwise, and will show students how to best utilize evidence-based medical imaging to maximize individual patient outcomes and population health. During this elective, students will acquire a basic understanding of: the investigative approach for the imaging department; various techniques for obtaining imaging and X-rays of the chest, abdomen, gastroenterology, genitourinary, and skeletal system including the head and neck; computerized tomography of the head, spine and abdomen; ultrasound of the abdomen, pelvis, carotid arteries and other superficial organs; neuro-angiography and general visceral angiography.

Key Objectives
- Define terms commonly used in radiology reports including: lucency, opacity, attenuation, Hounsfield units (HU), signal. (1)
- Categorize different tissues from most to least opaque on x-ray including: bone, soft tissue, air, metal, and fat. (3)
- Describe the procedure for ordering a radiologic exam at your institution. (2)
- Summarize the categories of critical information that must be included on an imaging exam requisition. (2)
- State the difference between a preliminary or “wet” read and the final radiologic report. (1)
- Predict types of imaging findings that would be reported directly to the ordering physician versus those which would appear only in the transcribed radiologic report. (4)
- Distinguish between the different types of contrast used in imaging exams and the potential diagnostic benefits of each. (4)
- Discuss the potential complications of intravenous contrast administration for CT and MR exams and identify predisposing risk factors. (2)
- Describe different methods for reducing the risk of contrast nephropathy. (2)
- Summarize risks and contraindications unique to MR examinations. (2)
- Describe the specific circumstances in which a multiphase CT (“with and without contrast”) may be useful and list reasons why this type of scan is not performed routinely. (2)
- Discuss the role of abdominal ultrasound in the assessment of an acute trauma patient. (2)
- Review criteria for performing CT in trauma patient. (2)
- Recognize abnormal spinal-laminar alignment of the cervical spine on x-ray. (1)
- Identify emergent clinical scenarios where image-guided procedures may be beneficial. (1)
• Construct the appropriate imaging algorithm for common diagnostic scenarios including: suspected pneumonia, suspected pulmonary embolism, suspected aortic dissection, renal colic, suspected appendicitis, hematuria, right upper quadrant pain, pancreatitis, suspected small bowel obstruction, suspected diverticulitis, pelvic pain in a woman, acute back pain, bone or joint trauma, neck trauma, suspected stroke, head trauma, spine trauma. (5)
• Employ a systematic search pattern for interpreting chest x-rays. (3)
• Devise a systematic search pattern for interpreting an abdominal plain film. (3)
• Identify and name the major parts of the following bones on x-ray: Humerus, radius, ulna, carpal bones, metacarpals and phalanges, femur, fibula, tibia, tarsal bones, calcaneus, metatarsals, vertebrae, ribs, pelvis, clavicles and scapulae. (1)
• Explain what takes place during an imaging guided biopsy in terms a patient would understand. (2)
• Define the descriptive terms hyperechoic, isoechoic, and hypoechoic. (1)
• Summarize the benefits and limitations of ultrasound as an imaging modality. (2)
• Explain how a mammogram is performed in terms a patient would understand. (2)
• Identify normal anatomic structures of the head and neck, brain, and spine on imaging exams and compare the degree of anatomic detail between CT and MR. (2)
• Explain the difference between a radioisotope and a radiotracer. (2)

Assessment Method
College of Medicine standard elective assessment will be completed by supervising faculty at conclusion of elective clerkship.

Scheduling Information
Interested students should contact CMU College of Medicine Department of Distributed Clinical Education at CMEDDCE@cmich.edu.