

# Virginia Western Community College

## RAD 244

### Case Studies in CT

#### Prerequisites:

ARRT Registered or Registry Eligible.

#### Course Description:

This course is designed to introduce the student to their role as collaborator in patient care by providing the critical thinking skills necessary to implement appropriate examination protocols and patient care essential for obtaining diagnostic CT images.

**Semester Credits: 1**

**Lecture Hours: 1**

#### Required Materials

##### Textbook:

CT and MRI Pathology: A Pocket Atlas. Grey, M and Ailinani, J (2012). 2<sup>nd</sup> Edition. McGraw Hill.  
ISBN: 9780071703192

Herring, William, (2012), '*Learning Radiology: Recognizing the Basics*' (3<sup>rd</sup> Ed). Philadelphia, PA: Elsevier (Mosby). ISBN 978-0-323-32807-4

Computed Tomography, Physical Principles, Clinical Applications, and Quality Control. Seeram, Euclid. 4<sup>th</sup> Edition. Saunders. ISBN: 9780323312882

##### Other Required Materials:

Internet Access

#### Course Outcomes

**At the completion of this course, the student should be able to:**

- Discuss the reasons for CT examinations.
  - Check to see if the right exam is order for what the physician is looking for
- Discuss relevant patient preparation and care necessary to obtain diagnostic images for the exam
  - Does the examination need oral or IV contrast
- Obtain information relative to the examination ordered
  - Check patients kidney functions, allergies, and medications.
- Identify general anatomy demonstrated on the examination
- Identify abnormalities demonstrated on the scans
- Discuss any disease process(es) depicted on the scan(s)
- Give a general prognosis for the disease processes identified or assigned

- Discuss any adjustments in scanning protocols necessary to obtain diagnostic images
  - The injection rate needed for different exams
  - Slice thickness needed to demonstrate pathology and area of interest
  - Understand the right window/ level needed to show pathology

## **Topical Description**

For each anatomical area, information regarding patient preparation, the anatomy demonstrated, scanning protocols and potential pathologies will be presented.

### **I: Brain**

- Vascular
- Neoplasm
- Congenital Anomaly
- Trauma
- Venous Abnormality
- Infectious Processes
- CTA of Brain

### **Chapter 15: Computed Tomography of the Head, Cerebral Vessels, Neck and Spine**

- Learn the indications for given examinations
- Review patient preparation
- Evaluate scanning technique

### **II: Spine and Cranium**

- Trauma
- Congenital anomalies
- Degenerative disease
- Neoplasm
- Infectious processes

### **III: Thorax**

- Neoplasm
- Vascular
- Trauma

### **IV: Abdomen and Pelvis**

- Liver
- Urinary System

- GI tract
- Infection

Chapter 16: Computed Tomography of the Body

- Learn the indications for given examinations
- Review patient preparation
- Evaluate scanning technique

V: Axial Skeleton

- Trauma
- Congenital anomalies
- Infectious processes
- Joints

VI: Vascular

- Stenosis
- Aneurysm
- Bleeds

**Note to Instructors**