



# BAKER COLLEGE

## STUDENT LEARNING OUTCOMES

RDT 2410 Sectional Anatomy

3 Semester Hours

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### Student Learning Outcomes and Enabling Objectives

1. Identify anatomical structures on sectional images as they relate to topographical anatomy
  - a. Identify anatomical structures on sectional images
  - b. Identify topographic anatomy used to locate underlying internal structures
  - c. Differentiate between sagittal, coronal and axial planes of the body
2. Examine the components of imaging modalities used in radiation therapy
  - a. Identify the components of the CT imaging system.
  - b. Differentiate between conventional and spiral/helical CT scanning to include data processing steps.
  - c. Relate the importance of imaging with computed tomography, magnetic resonance, PET-CT, ultrasonography, and image fusion in radiation therapy.
  - d. Review the principles of imaging modalities using relevant terminology.
  - e. Compare the imaging modalities for application to radiation therapy.
3. Explore radiation protection related to imaging in radiation therapy
  - a. Describe the correct application of radiation protection techniques used to reduce patient dose in CT.
4. Examine relevant terminology related to sectional anatomy and imaging
  - a. Define the following terms and their impact on image scan factors and reconstruction.
    - Pixel.
    - Matrix.
    - Voxel.
    - Linear attenuation coefficient.
    - CT/Hounsfield number.
    - Partial volume averaging.
    - Window width (ww) and window level (wl).
    - Spatial resolution.
    - Contrast resolution.
    - Noise.
    - Annotation.
    - Region of interest (ROI).
    - Standard vs. volumetric data acquisition.
    - Algorithm

- Raw data
- Image data
- Artifacts
- Data storage techniques

### **Big Ideas**

- Sectional Anatomy
- Imaging Modalities in Radiation Therapy
- Computed Tomography

### **Essential Questions**

1. How are imaging with computed tomography, magnetic resonance and PET-CT important in radiation therapy?
2. What is the relationship between anatomical structures and topographical anatomy used to locate internal structures on sectional images?
3. Why is sectional anatomy and computed tomography terminology important to radiation therapy?
4. How do the components of the CT imaging system relate to image quality?
5. How are the processing steps different between conventional and spiral/helical CT scanning?
6. What is the importance of radiation protection in image acquisition?

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These SLOs are not approved for experiential credit.

**Effective: Spring 2018**