

RAD 247- Cross-Sectional Anatomy

The purpose of this course is to provide an understanding of the sectional anatomy in computed tomography and nuclear medicine. The course will provide a comprehensive study of the cross sectional anatomy, with an overall focus using computed tomography as an imaging tool from the technologists' perspective. This course is designed to introduce cross-sectional anatomy to technologists in the medical imaging field. Normal anatomic structures of the head, neck, thorax, abdomen, pelvis, spine and extremities will be presented in multi-planar sections.

Anatomic positions and planes
Terminology and landmarks
Abdominal and pelvic divisions
Image display

BRAIN
CRANIUM AND FACIAL BONES
NECK
THORAX
ABDOMEN
PELVIS
SPINE
UPPER EXTREMITY JOINTS
LOWER EXTREMITY JOINTS

RAD 242- Computed Procedures and Instrumentation

The purpose of this course is to provide an understanding of and respect for the safe use of computed tomography in the field of Radiologic Technology. The course will provide a comprehensive study of the principles, instrumentation and procedures, with an overall focus using computed tomography as an imaging tool from the technologists' perspective.

1. Describe the function of the components of the CT imaging system.
2. List the types of CT detectors.
3. Explain the most common materials used in CT detectors and how differences in materials affects the way detectors function.
4. Define and describe the functions of the data acquisition system (DAS).
5. Define the terms "raw data", "image data" and "scan data".
6. Explain the difference between reconstructing and reformatting an image.
7. Define and explain the correlation between CT and each of the following:
 - Pixel
 - Matrix
 - Voxel
 - Pitch

- CT/Hounsfield number
 - Partial Volume Averaging
 - Window Width (WW) and Window Level (WL)
 - Spatial resolution
 - Contrast resolution
 - Noise
 - Annotation
 - Scanogram/scout/pilot/topogram
 - Region of Interest (ROI)
8. Name the factors affecting image quality in CT.
 9. Define the term “artifact”, list the types of artifacts and name and describe the appearance of those most commonly affecting CT images.
 10. Relate differences between conventional and spiral CT scanning.
 11. Specify the selectable scan factors that affect patient radiation dose and how that dose can be reduced.
 12. Name the radiation protection devices that may be used to reduce patient dose in CT and describe the correct application of each.