CT and MR Certificate Programs Mission, Goals, and Learning Outcomes

Mission Statement

The mission of the Yavapai College CT and MR certificate programs is to provide quality education that will develop competent, caring, and ethical entry-level CT and MR technologists.

Program Goals

- To graduate technologists who possess the clinical competency of an entry-level CT or MR technologist
- To graduate technologists with theoretical knowledge and critical thinking skills to produce quality studies
- To prepare technologists to successfully challenge the American Registry of Radiologic Technologists (ARRT) Post-Primary Certification Examination in Computed Tomography or Magnetic Resonance Imaging

CT Program Learning Outcomes

- Explain the design of CT scanner generations.
- Explain how adjusting operator console parameters affects CT image data.
- Describe the process and the factors that influence data acquisition.
- Define the tools used and the post-processing techniques needed for image enhancement.
- Discuss the role and the ethical considerations of the CT technologist in reducing radiation dose including technical factor selection, positioning, and shielding.
- Discuss factors that affect CT image quality, including artifacts.
- Perform CT exams as outlined in the ARRT competency requirements for post-primary certification in Computed Tomography.
- Identify specific organs or structures on a cross-sectional acquired or reformatted CT image.
- Identify pathologic processes on CT images.
- Review CT images for quality, accuracy and completeness.

MR Program Learning Outcomes

- Describe how the MR signal is produced and detected and how the image is acquired.
- Understand magnetism and magnetic properties.

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MR Program Learning Outcomes, continued

- Identify the major hardware components in MR imaging.
- Explain the functionality of the radiofrequency, gradients systems, and role of coils in image acquisition.
- Explain intrinsic and extrinsic parameters that affect image quality.
- Discuss proper screening, patient preparation, use, and adverse effects of MR contrasts agents.
- List parameters related to tissue characteristics that affect image quality, and apply proper pulse sequences in MR imaging.
- Describe how imaging parameters determine contrast and resolution on MR images.
- Define the tools used and the postprocessing techniques needed for image enhancement.
- Perform MR exams as outlined in the ARRT competency requirements for Post-Primary Certification in Magnetic Resonance Imaging.
- Identify specific organs or structures on a cross-sectional acquired or reformatted MR image.
- Explain the appearance of normal tissue and pathologic processes on MR images.
- Review MR images for quality, accuracy, and completeness.