

MASTER SYLLABUS

COURSE NO. HOURS, AND TITLE: RAD 364-3 - Computed Tomography Technology

COURSE DESCRIPTION:

This course will focus on the physical principles of computed tomography. Topics of discussion will include the history of computed tomography, its instrumentation, data acquisition, image reconstruction, contrast agents, patient care/safety, and quality assurance. Special imaging application for interventional, trauma, and oncology will be discussed. Restricted to major, completion of ARRT in Radiography, or consent of school. Prerequisite: RAD 362 or consent of instructor.

PREREQUISITES TO: RAD 404 and 414

COURSE OBJECTIVES:

Upon completion of this course, the student will be able to:

1. Explain the physical principles and instrumentation of CT.
2. Discuss medicolegal issues as applied to the CT technologist.
3. Discuss the use of contrast agents in CT.
4. Describe patient care/safety procedures commonly used in CT.
5. List and describe the use of contrast agents in CT.
6. List and describe radiation dose reduction techniques.
7. List and explain tests used to evaluate quality assurance in CT.
8. Describe the imaging applications commonly used in CT.

TOPICAL OUTLINE:

Topics	Percentage of Time
I. Principles and Instrumentation of CT	25%
II. Radiation Dose and Reducing Radiation Dose	15%
III. Quality Assurance Testing	10%
IV. Contrast Agents and Venipuncture	15%
V. Patient Care and Safety	15%
VI. Medicolegal Issues	10%
VII. Imaging Applications	10%

TEXTBOOKS:

Required:

DeMaio, D. (2018). *Mosby's Exam Review for Computed Tomography*, (3rd Ed.)

Hofer, M. (2005). *CT teaching manual*. Germany: Georg Thieme Verlag

Seeram, E. (2016). *Computed tomography: Physical principles clinical applications and quality control* (4th Ed.). Philadelphia: W. B. Saunders Company.