RADT 66 Course Outline as of Fall 2019

CATALOG INFORMATION

Dept and Nbr: RADT 66 Title: SPECIAL MODALITIES
Full Title: Special Modalities
Last Reviewed: 9/25/2023

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.50	17.5	Lecture Scheduled	61.25
Minimum	4.00	Lab Scheduled	1.50	8	Lab Scheduled	26.25
		Contact DHR	0		Contact DHR	0
		Contact Total	5.00		Contact Total	87.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 122.50 Total Student Learning Hours: 210.00

Title 5 Category:	AA Degree Applicable
Grading:	Grade Only
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:
Principles of specialized imaging modalities. Principles of venipuncture, computerized tomography, fluoroscopy and its related equipment. Demonstration and practice of venipuncture.

Prerequisites/Corequisites:
Course Completion of RADT 63B and Concurrent Enrollment in RADT 71E

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Principles of specialized imaging modalities. Principles of venipuncture, computerized tomography, fluoroscopy and its related equipment. Demonstration and practice of venipuncture. (Grade Only)
Prerequisites/Corequisites: Course Completion of RADT 63B and Concurrent Enrollment in RADT 71E
Recommended:

Limits on Enrollment:
Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Fall 1981	Inactive:	
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Manipulate equipment in special procedure rooms; operate fluroscopes, digital equipment, and
   computerized tomography.
2. Become eligible to sit for the State fluoroscopy examination.
3. Provide patient education in various aspects of special modalities in Radiology.
4. Competently perform venipuncture, as permitted by the State of California.

Objectives:
At the conclusion of this course, the student should be able to:
1. Explain the steps of operation of a medical fluoroscopic imaging system.
2. Describe the direct correlation between the patient radiation dose and use of fluoroscopy.
3. Apply principles of radiation protection to self, patients, and other personnel.
4. Identify viscera and cardiovascular systems, lungs, heart, brain, and cross-sectional anatomy on radiographic images.
5. List the components and operation of a computerized tomography and angiography.
6. Perform venipunctures in medical imaging environments.

Topics and Scope:

I. Principles of Fluoroscopy
   A. Overhead X-ray tube
   B. Undertable X-ray tube
   C. Mobile unit
   D. Digital fluoroscopy
II. Operation of Fluoroscopic Imaging Systems
   A. Digital fluoroscopy
   B. Post processing capabilities

III. State Regulations in Fluoroscopy
   A. Requirements
   B. Good practice
IV. Patient Radiation Dose in Fluoroscopy
   A. Primary radiation
   B. Secondary and scatter radiation
   C. Skin dose
   D. Organ dose
V. Computerized Tomography
   A. Principles
   B. Equipment and operational procedures
   C. Procedure and safety protocols
VI. Angiography
   A. Principles
   B. Equipment and perational procedures
   C. Accessory devices
VII. Radiographic Anatomy and Medical Images
   A. Visceral organs
   B. Cardiovascular system
   C. Lungs
   D. Heart
   E. Brain
   F. Cross-sectional anatomy
VIII. Venipuncture
   A. Principles
   B. Instrumentation
   C. Regulations
   D. Practice
IX. Filmless and Paperless Radiology
   A. Picture archiving and communication system (PACS)
   B. Digital communication
   C. Radiology information system
   D. Hospital information system
   E. Electronic medical records

All topics are covered in the lecture and lab portions of the course.

Assignment:

Lecture-Related Assignments:
1. Chapter readings (20 pages per week)
2. Completion of 4 - 6 research term papers (2-4 pages each)
3. One midterm examination
4. Final examination
5. Completion of a PACS project

Lab-Related Assignments:
1. Completion of a minimum of 10 venipunctures

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Research papers, PACS project	Writing 20 - 40%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

None	Problem solving 0 - 0%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Performance exams, A minimum of 10 venipunctures	Skill Demonstrations 10 - 30%

Exams: All forms of formal testing, other than skill performance exams.

Midterm and final exams	Exams 40 - 60%

Other: Includes any assessment tools that do not logically fit into the above categories.

None	Other Category 0 - 0%

Representative Textbooks and Materials:
Merrill's Atlas of Radiographic Positions and Radiologic Procedures. 11th ed. Ballinger, Philip and Frank, Eugene. 2013 (classic)
Instructor-prepared material