RADT 102 Course Outline as of Fall 2016

CATALOG INFORMATION

Dept and Nbr: RADT 102   Title: MAMMOGRAPHY FOR RAD TECH
Full Title: Mammography for Radiologic Technology
Last Reviewed: 9/23/2019

Units			Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	1.25		Lecture Scheduled	1.25	17.5	Lecture Scheduled	21.88
Minimum	1.25		Lab Scheduled	0	17.5	Lab Scheduled	0
			Contact DHR	0		Contact DHR	0
			Contact Total	1.25		Contact Total	21.88
			Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 43.75   Total Student Learning Hours: 65.63

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:
This course is intended for 2nd year radiologic technology students desiring California certification in mammography including anatomy, physiology, pathology, MQSA (Mammography Quality Standards Act) regulations., quality assurance, digital mammography and positioning of the human breast.

Prerequisites/Corequisites:
Course Completion of RADT 61B and Concurrent Enrollment in RADT 102L

Recommended Preparation:

Limits on Enrollment:
Current Enrollment in the Radiologic Technology Program

Schedule of Classes Information:
Description: This course is intended for 2nd year radiologic technology students desiring California certification in mammography including anatomy, physiology, pathology, MQSA (Mammography Quality Standards Act) regulations., quality assurance, digital mammography and positioning of the human breast. (Grade Only)
Prerequisites/Corequisites: Course Completion of RADT 61B and Concurrent Enrollment in

RADT 102L
Recommended:
Limits on Enrollment: Current Enrollment in the Radiologic Technology Program
Transfer Credit:
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:		Effective:		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. Discuss radiographic principles and how they apply to mammographic imaging.
2. List technical factors and positioning techniques that produce quality mammographic images while keeping patient radiation exposure to a minimum.

Objectives:
Upon completion of the course, students will be able to:
1. Explain the development and purpose of digital mammography.
2. Explain the basic function and components of mammography equipment.
3. List the factors that affect image quality.
4. Explain how to alleviate problems that affect production of a quality mammogram.
5. Discuss the stages of human breast development.
6. List common breast anomalies.
7. Identify common forms of breast augmentation.
8. Identify common surgical techniques used in the removal of breast tissue to manage neoplastic disease.
9. Identify examples of breast disease.
10. Discuss male breast cancer.
11. Describe treatment options.
12. Identify the personnel and reporting requirements listed in the Mammography Quality Standards Act regulations.
13. List the mandated mammography QC tests performed by radiologic technologists and their frequency.
14. Differentiate between screening and diagnostic mammography projections and positioning.
15. Distinguish between analog and digital mammography equipment.
16. Identify the care needs of special patient populations

Topics and Scope:

I. Anatomy and Physiology
  A. External Anatomy
     1. Breast Margins
     2. Nipple
     3. Areola
     4. Montgomery's glands
     5. Skin
        a. Sebaceous glands
        b. Pores
        c. Axillary tail
        d. Inframammary fold
        e. Margins of pectoralis major and base
  B. Internal Anatomy
     1. Glandular tissue
     2. Parenchyma
     3. Connective tissue
     4. Pectoralis muscle
     5. Fibrous or connective
     6. Adipose or fatty
  C. Male Breast Composition
     1. Fat
     2. Fibroglandular tissue
  D. Breast vasculature
  E. Retromammary Space
  F. Lymph Nodes
  G. Patient Positioning
     1. Cranio-caudal
     2. Medio-lateral oblique
     3. 90 degree lateral, medio-lateral and latero-medial
     4. Latero-medial oblique
     5. Caudal-cranial
     6. Exaggerated cranial-caudal
     7. Spot compression
     8. Cleavage
     9. Tangential
     10. Axillary tail
     11. Rolled lateral and medial
     12. Implant displaced
     13. Axillary view (Cleopatra)
     14. Magnification and or spot views
  H. Patients with
     1. Augmented breasts
     2. Breast lesion localization
     3. Specimen radiograph
     4. Post operative breasts
     5. Irradiated breasts
     6. Reconstructed breasts
     7. With breast implants: Eklund projection
     8. Post-mastectomy

9. Skin lesion markers

II. Pathology
A. Breast disease
1. Signs and symptoms
2. Risk factors for breast cancer
3. Early detection, breast self-examination
4. Epidemiology

B. Mammographic pathophysiology
1. Benign lesions
2. Malignant lesions
3. Skin
    a. Dimpling
    b. Erythema
    c. Edema
    d. Peau d'orange
    e. Discharge
4. Nipple retraction
5. Eczema
6. Erythema
7. Lump
8. Mass: shape and margins
9. Density
10. Calcifications
11. Spiculated lesions
12. Cysts
13. Galactocele
14. Fibroadenoma
15. Lipoma
16. Hamartoma
17. Pappiloma
18. Ductal ectasia
19. Fat necrosis
20. Microcalcifications

III. Professional ethics and patient care
A. Patient follow up
B. Outreach programs
C. Cultural diversity
D. Care of special patient populations: patient concerns, early detection, patient education
E. Localization conventions: quadrant system
F. Patient preparation
G. Visual inspection: areas of interest
1. Perimeter
2. Nipples
3. Lymph nodes
H. Involution

IV. Technical aspects of mammography
A. Breast composition
B. Fundamental of image quality
C. Methods of improving image quality
1. Image receptor, film/screen combination
2. Cathode: purpose, effect on focal spot, orientation
3. Focal spot size

a. Anode/target
b. Purpose
c. Material
d. Anode angle
e. Line focus principle
f. Heel effect
4. Window material
5. Filtration
6. Source-to-image distance

Assignment:

1. View and answer questions to recorded modules.
2. Weekly dialogue and writings of 50 words minimum.
3. Six quizzes, one mid-term, and one final examination.

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.

Weekly writing assignments	Writing 20 - 30%

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.

None	Skill Demonstrations 0 - 0%

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

Six quizzes, one mid-term, and one final exam.	Exams 30 - 40%

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

Analysis and evaluation of the modules viewed.	Other Category 30 - 40%

Representative Textbooks and Materials:
Instructor prepared materials
Mammographic Imaging A Practical Guide, Andolina & Lille, 3rd Edition, 2011 Most Recent