

**RADT 102L Course Outline as of Fall 2020****CATALOG INFORMATION**

Dept and Nbr: RADT 102L Title: MAMMOGRAPHY FOR RADT LAB  
 Full Title: Mammography for Radiologic Technology Lab  
 Last Reviewed: 8/26/2024

Units	Course Hours per Week	Nbr of Weeks	Course Hours Total
Maximum	0.75	Lecture Scheduled 0	Lecture Scheduled 16
Minimum	0.75	Lab Scheduled 0	Lab Scheduled 8
		Contact DHR 2.50	Contact DHR 40.00
		Contact Total 2.50	Contact Total 40.00
		Non-contact DHR 0	Non-contact DHR 0

Total Out of Class Hours: 0.00

Total Student Learning Hours: 40.00

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:**

This course is intended for 2nd year radiologic technology students desiring California certification in mammography. Students will be assigned a clinical site by the program director of the Radiologic Technology program in which they are enrolled. The clinical site must be affiliated with the Radiologic Technology program and registered with the CA Department of Public Health - Radiologic Health Branch. This course meets the State of California statute section 17 CCR § 30455.1 requirement for the Mammographic Radiologic Technology Certificate.

**Prerequisites/Corequisites:**

Course Completion of RADT 61B and Concurrent Enrollment in RADT 102

**Recommended Preparation:****Limits on Enrollment:**

Current enrollment in the SRJC Radiologic Technology Program or must be in the 2nd year of a JRCERT certified radiologic technology program, must have a minimum GPA of 2.0, must have a letter of recommendation from a program director overseeing the radiologic technology program.

### **Schedule of Classes Information:**

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Transfer Credit:

Repeatability: Two Repeats if Grade was D, F, NC, or NP

### **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>CSU Transfer:</b>		Effective:	Inactive:
<b>UC Transfer:</b>		Effective:	Inactive:

**CID:**

**Certificate/Major Applicable:**

Not Certificate/Major Applicable

### **COURSE CONTENT**

#### **Student Learning Outcomes:**

At the conclusion of this course, the student should be able to:

1. Apply radiographic principles in mammographic imaging.
2. Utilize technical factors and positioning techniques that produce quality mammographic images while keeping patient radiation exposure to a minimum.

#### **Objectives:**

At the conclusion of this course, the student should be able to:

1. Explain the basic function and components of mammography equipment.
2. List the factors that affect image quality.
3. Explain how to alleviate problems that affect production of a quality mammogram.
4. List common breast anomalies.
5. Identify common forms of breast augmentation.
6. Identify examples of breast disease.
7. List the mandated mammography QC tests performed by radiologic technologists and their frequency.

8. Differentiate between screening and diagnostic mammography projections and positioning.
9. Practice the care needs of the special patient population.
10. Observe or demonstrate patient positioning.

## **Topics and Scope:**

In a clinical setting the student will observe and / or perform mammographic imaging related to the following topics:

### **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. papilloma
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. Summary paper of Mammography and student's own learning goals
2. Complete required clinical hours
3. Final clinical evaluation

**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.

Summary paper	Writing 20 - 30%
<b>Problem Solving:</b> Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.	
None	Problem solving 0 - 0%
<b>Skill Demonstrations:</b> All skill-based and physical demonstrations used for assessment purposes including skill performance exams.	
Final clinical evaluation	Skill Demonstrations 20 - 30%
<b>Exams:</b> All forms of formal testing, other than skill performance exams.	
None	Exams 0 - 0%
<b>Other:</b> Includes any assessment tools that do not logically fit into the above categories.	
Completion of required hours	Other Category 40 - 60%

**Representative Textbooks and Materials:**

Instructor prepared materials

Mammographic Imaging: A Practical Guide. 4th ed. Lille, Shelly and Marshall, Wendy. Wolters Kluwer. 2018