

# R T 65: MAMMOGRAPHY

## Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	3
Hours:	2.5 lecture, 1.5 laboratory per week (48 total per quarter)
Prerequisite:	R T 62A or current certification in Radiologic Technology.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

## Student Learning Outcomes

- Demonstrate knowledge of the human structure, function, pathology and radiographic positioning relating to the human breast.
- Explain image production and related equipment components to the mammography imaging process including quality assurance and quality control.

## Description

Technical and procedural aspects of mammography including breast anatomy, physiology, positioning, compression, quality assurance techniques, implant imaging and mass localization. Successful completion of this course entitles the student to a Certificate of Completion of a 40 hour course in mammography education. Intended for students in the Radiologic Technology Program; enrollment is limited to students accepted in the program.

## Course Objectives

The student will be able to:

- Discuss methods and techniques for patient education and assessment.
- Identify and describe the instrumentation of a dedicated mammographic unit system.
- Describe various ways of maintaining and performing quality control and quality assurance in mammography.
- Identify and label normal anatomy of the human breast.
- Compare and contrast normal/abnormal radiographic appearances of the breast as related to various pathological conditions.
- Discuss the factors that affect mammographic technique and image quality.
- Describe breast positioning imaging techniques.
- Differentiate special positioning and radiographic techniques for the augmented breast, post-operative patient and breast specimen imaging.
- List and describe proper positioning methods used during general mammography, mass localization and needle localization.

## Course Content

- Patient care: education and assessment (Lec)
  - Patient communication
    - Pre-exam instructions
    - Explanation of mammographic procedure

- ACS and ACR guidelines
  - Breast self-examination (BSE)
  - Clinical breast examination (CBE)
- Patient assessment
    - Epidemiology of breast cancer
    - Incidence
    - Risk factors
    - Signs and symptoms of breast cancer
    - Documentation of medical history
    - Gail Model risk assessment tool
  - Treatment options
    - Surgical options
    - Non-surgical options
    - Reconstruction
    - Tumor staging
- Instrumentation and quality assurance (Lab)
    - Design characteristics of mammography units
      - Techniques settings
      - Mammography tube
      - Compression devices
      - Grids
      - AEC
    - Acquisition and display
      - Digital systems (CR/DR/tomosynthesis)
      - Computer aided detection
    - Quality assurance and evaluation (Lab)
      - Accreditation and certification
      - MQSA
      - Quality control
        - Technologist tests
        - Medical physicist test
        - Digital QC test
    - Anatomy and physiology (Lab)
      - External anatomy
      - Internal anatomy
      - Histology
      - Localization terminology
    - Pathology (Lab)
      - Imaging terminology
      - Benign conditions
      - High risk conditions
      - Malignant conditions
    - Mammographic technique and image evaluation (Lab)
      - Technical factors
      - Image quality evaluation
    - Breast imaging procedures (Lec)
      - Mammographic positioning
        - Standard views
        - Additional views
        - Positioning techniques
      - Special patient situations (Lec)
        - Imaging options
        - Implants
        - Augmented breast
        - Post-operative patient
        - Breast specimen imaging
    - Interventional procedures (Lec)
      - Fine needle
      - Mass localization
      - Needle localization

## Lab Content

- A. Radiographic image anatomy identification
- B. Equipment recognition
- C. Quality assurance and quality control testing
- D. Radiographic pathology identification
- E. Mammographic technique and image evaluation

## Special Facilities and/or Equipment

Classroom with multimedia equipment, illuminators and internet access.

## Method(s) of Evaluation

- Directed readings assignments
- Midterms
- Final examination

## Method(s) of Instruction

- Lecture
- Discussion
- Demonstration
- Group activities

## Representative Text(s) and Other Materials

Peart, Olive. Mammography and Breast Imaging Prep, 2nd ed.. 2018.

Peart, Olive. Lange Q & A: Mammography Examination, 4th ed.. 2018.

## Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

- A. Weekly reading assignments from course syllabus and textbook, approximately 20-30 pages.
- B. Directed readings throughout the quarter. Assignment requires the student to answer 25 questions based on the assigned readings. Four assignments are required during the quarter.

## Discipline(s)

Radiological Technology