

R T 50: ORIENTATION TO RADIATION SCIENCE TECHNOLOGIES

Foothill College Course Outline of Record

| Heading | Value |
|------------------------------------|--|
| Units: | 2 |
| Hours: | 2 lecture per week (24 total per quarter) |
| Prerequisite: | AHS 52; BIOL 40A, 40B and 40C or equivalent; R T 200L. |
| Corequisite: | R T 53. |
| Degree & Credit Status: | Degree-Applicable Credit Course |
| Foothill GE: | Non-GE |
| Transferable: | CSU |
| Grade Type: | Letter Grade Only |
| Repeatability: | Not Repeatable |

Student Learning Outcomes

- Describe radiation science terms, program policies, accreditation, credentialing, certification, licensure, regulations, and various specialties and imaging modalities.
- Explain the use of medical radiation, patient care techniques, anatomy identification and positioning of the abdomen.

Description

Overview of Radiologic Technology as a career. Radiographic terminology, positioning for abdomen, vital sign assessment, introduction to x-ray protection and production, radiographic image formation, patient care, basic computer operation and Internet application. Overview of program structure and student services. 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:

- define radiation science terms.
- identify radiographic anatomy and positioning for routine abdomen.
- explain simple radiation protection procedures.
- identify and explain various components of the x-ray room.
- describe the basic terms of image formation.
- explain the radiographer's role in patient care during radiographic examinations.
- identify the program structure and the policy guidelines.
- define program accreditation, certification, licensure and regulations.
- explain the professional credentialing process in radiologic technology.
- list the various professional organizations in radiology.
- perform basic computer functions.
- discuss the impact the Internet has on the radiation sciences.
- identify, compare, and contrast different specialties and imaging modalities.
- recognize various student services available.

O. assemble a professional portfolio that outlines the student's educational process.

Course Content

- Terminology of radiation science
 - Positioning and procedures
 - Movement and direction
 - Anatomical terms
- Abdomen positioning
 - Position of patient
 - IR size and placement
 - Direction central ray and distance
 - Centering criteria
 - Technique used
 - Breathing instructions
 - Protection measures
- Radiation protection measures
 - Protection to personnel
 - Time
 - Distance
 - Shielding
 - Radiation monitoring
 - Aprons and gloves
 - Protection to patient
 - General shielding
 - Collimation
- Components of a basic x-ray room
 - X-ray tube
 - Locks
 - Movement
 - Control panel
 - Exposure rotor
 - MA
 - Time
 - KV
 - Positioning table
 - Movement
 - Bucky
 - Locks
- Basic terms of image formation
 - Cassette sizes/image receptors
 - CR
 - DR
- Patient care
 - Working with diverse cultures
 - Body mechanics and patient assistance
 - Transfer of patient
 - Wheelchair
 - Gurney
 - Turning of patient
 - Proper stance
 - Proper lifting
 - Vital signs
 - Temperature
 - Pulse
 - Respiration
 - Blood pressure
 - Normal/abnormal ranges
- Infection control
 - Handwashing

- b. Surgical asepsis
- c. Medical asepsis
- G. Educational program structure and polices
 - 1. Educational/program director
 - 2. Clinical coordinator
 - 3. Didactic instructor
 - 4. Clinical instructor
 - 5. Students
 - 6. Program manuals
- H. Accreditation
 - 1. Definition
 - 2. Programmatic accreditation
 - 3. Institution accreditation
- I. Professional credentialing
 - 1. Definition
 - 2. Agencies
 - 3. National
 - 4. State
- J. Professional organizations
 - 1. Purpose/function
 - 2. Local organizations
 - 3. State organizations
 - 4. National
 - 5. International
 - 6. Related associations
- K. Computer technology
 - 1. Basic function
 - 2. Application in radiology
 - 3. Patient confidentiality
 - 4. Email
- L. Internet
 - 1. History
 - 2. Internet vs. intranet
 - 3. Access to information
 - 4. Security of patient information
 - 5. Enhancer to customer service
- M. Imaging modalities
 - 1. Diagnostic
 - 2. CT
 - 3. MRI
 - 4. Sonography
 - 5. Mammography
 - 6. Nuclear medicine
 - 7. Radiation therapy
- N. Student services
 - 1. Purpose/function
 - 2. Location
 - 3. Contact
- O. Professional portfolio
 - 1. Outline
 - 2. Content
 - 3. Assemble

Lab Content

Not applicable.

Special Facilities and/or Equipment

Classroom with multimedia equipment and internet access.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

- A. Written midterm.
- B. Written final examination.

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lecture, discussion, cooperative learning exercises, demonstration.

Representative Text(s) and Other Materials

Foothill College (RT). [Clinical Education Manual-Orientation.](#)

Foothill College (RT). [Clinical Education Manual-First & Second Year.](#)

Foothill College (RT). [Student Handbook.](#)

Foothill College (RT). [Student Clinical Competency Handbook.](#)

The above texts are updated each year, and the current edition will be used.

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

- A. Daily reading assignments from course syllabus and clinical manuals.
- B. Daily lecture covering subject matter from course syllabus with extended topic information.

Discipline(s)

Radiological Technology