Course Acronym:	RTEC
Course Number:	104
Descriptive Title:	Clinical Education 1
Division:	Health Sciences and Athletics
Department:	Radiologic Technology
Course Disciplines:	Radiologic Technology
Catalog Description:	This course continues the development of clinical skills in the performance of radiographic examinations. Areas of skill development include the upper and lower extremities and radiography of the chest. Emphasis will be placed on radiation protection of the patient, self, and co-workers.
Prerequisite:	Radiologic Technology 106 AND Radiologic Technology 111 AND Radiologic Technology 123 with a minimum grade of C in prerequisite
Co-requisite:	
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	0
Hours Laboratory (per week):	4.5
Outside Study Hours:	0
Total Course Hours:	81
Course Units:	1.5
Grading Method:	Letter Grade only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	4/16/2012
Transfer UC:	No
Effective Date:	
General Education: ECC	
Term:	
Other:	
CSU GE:	
Term:	
Other:	
IGETC:	
Term:	
Other:	

Student Learning Outcomes:	**SLO #1 Body Mechanic** Students will demonstrate correct principles of body mechanics in the clinical setting. **SLO #2 Equipment** Use Clinically Students will demonstrate the proper use of radiographic equipment in the clinical setting **SLO #3 Ethical Behavior** Students will demonstrate ethical behavior with patients, self and others.
Course Objectives:	1. Demonstrate proper positioning and radiation protection while performing radiographic examination of the chest, upper and lower extremities, while being attentive to the needs, safety and comfort of the patient. 2. Assess the patient's status and condition before, during and following the radiographic procedure. 3. Describe methods to obtain a patient's history and correct identification while maintaining patient confidentiality standards prior to performing a radiographic examination. 4. Demonstrate correct principles of body mechanics applicable to patient care and radiographer's safety. 5. Apply the appropriate use of medical asepsis and universal precautions when applicable. 6. Identify standard radiographic positions and perform radiographic procedures at the clinical setting with appropriate direct and indirect supervision by a radiologic technologist. 7. Demonstrate the safe and the proper use of radiographic equipment and protective shielding devices at the clinical site. 8. Evaluate and analyze radiographic images for anatomy identification, technical quality, correct positioning and basic pathology, and identify ways to improve the image while reducing radiation exposure to the patient. 9. Recognize and adhere to radiology department operational policies and the El Camino College Radiologic Technology Program and clinical education policies. 10. Demonstrate technical competence and prudent judgment while administering ionizing radiation to perform diagnostic imaging procedures of the chest, upper and lower extremities, to meet acceptable patient care standards. 11. Critique radiographic images for appropriate clinical information, patient positioning and image quality. Apply corrective action when applicable to produce a diagnostic quality radiographic image.
Major Topics:	**I. Room Set-Up (10 hours, lab)** A. Exam Protocol B. Infection control precautions C. OSHA standards **II. While correctly using equipment and safety devices, perform the following procedures at the clinical education centers with direct and indirect supervision of a radiologic technologist. (18 hours, lab)** **A. Upright Chest** 1. Posterior Anterior 2. Left Lateral Projections **III. While correctly using equipment and safety devices, perform the following procedures at the clinical education centers with direct and indirect supervision of a radiologic technologist. (18 hours, lab)** **A. Upper Extremities**

	1. Fingers & Thumb (Digits) 2. Hand 3. Wrist 4. Forearm 5. Elbow 6. Humerus **IV. While correctly using equipment and safety devices, perform the following procedures at the clinical education centers with direct and indirect supervision of a radiologic technologist. (18 hours, lab)** **A. Lower Extremities** 1. Toes 2. Foot 3. Calcaneous 4. Ankle 5. Tibia/Fibula 6. Knee 7. G. Femur **V. Age Specific Procedures (11 hours, lab)** A. Geriatric patient B. Pediatric patient C. Special needs patient **VI. Image Critique (6 hours, lab)** A. Presentation of images B. Explanation of image quality
Total Lecture Hours:	0
Total Laboratory Hours:	81
Total Hours:	81
Primary Method of Evaluation:	3) Skills demonstration
Typical Assignment Using Primary Method of Evaluation:	Demonstrate proper positioning skills, technique development, and the utilization of appropriate radiation and equipment safety procedures in the performance of an examination of the lower extremity.
Critical Thinking Assignment 1:	During an image critique session, present in an oral and written format, a review of a radiographic examination that you performed at the clinical site within the past month. Discuss the difficulties presented with performing and completing this procedure. The presentation must include an analysis and critique of all radiographs presented. The critique shall include the technical factors used, positioning, pathology involved, terminology explanation and radiation protection principles employed.
Critical Thinking Assignment 2:	At the clinical facility, demonstrate proper patient positioning, radiation protection and use of radiographic equipment in the performance of a knee examination for a patient from the emergency room with a possible fracture of the patella. Describe what adjustments might be made to the routine to assure patient comfort, including how to perform a cross-table lateral, while obtaining the best quality images possible for diagnosis.
Other Evaluation Methods:	Class Performance, Clinical Evaluation, Fieldwork, Performance Exams, Presentation
Instructional Methods:	Demonstration, Group Activities, Lab, Role play/simulation
If other:	
Work Outside of Class:	Course is lab only - minimum required hours satisfied by scheduled lab time

If Other:	
Up-To-Date Representative Texts:	Eugene Frank, et al. MERRILL'S ATLAS OF RADIOGRAPHIC POSITIONS AND RADIOGRAPHIC PROCEDURES; VOLUME I . 15th ed. Elsevier Publishers, 2023.
Alternative Texts:	
Required Supplementary Readings:	El Camino College, Radiologic Technology Program Student Handbook
Other Required Materials:	Lead Radiographic Positioning Markers with Student's initials Radiation monitoring dosimetry badges. Uniforms and shoes as described in the RT Program Dress Code Policy
Requisite:	Prerequisite
Category:	sequential
Requisite course(s): List both prerequisites and corequisites in this box.	Radiologic Technology-106 AND Radiologic Technology-111 AND Radiologic Technology-123
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	**Knowledge of radiation protection for the patient and self.** RTEC 106:Demonstrate knowledge of radiation protection and application principles of patients, self and staff. RTEC 123 - Demonstrate prudent judgment administering ionizing radiation and technical competence to perform diagnostic imaging procedures. **Knowledge of specific anatomy and positioning required to obtain radiographic examinations of the Chest, Upper and Lower extremities.** RTEC 106:- List body planes and topographic anatomy used in positioning routine radiographic procedures. RTEC 123 - Demonstrate prudent judgment administering ionizing radiation and technical competence to perform diagnostic imaging procedures. RTEC 123 - Adapt radiographic procedures to meet age-specific, disease-specific and cultural needs of patients. **Knowledge and ability to maneuver and operate radiographic equipment and accessories necessary for routine radiography.** RTEC 111 - Identify, label and describe the function of the equipment used in radiography such as; an x-ray tube, the x-ray circuit, image receptors (film based and digital) , digital image (direct and indirect capture) processing equipment, a film processor and darkroom equipment. Demonstrate safe manipulation and operation of radiographic equipment. RTEC 111 -Identify, label and describe the function of the equipment used in radiography such as; an x-ray tube, the x-ray circuit, image receptors (film based and digital) , digital image (direct and indirect capture) processing equipment, a film processor and darkroom equipment. **Demonstrate safe manipulation and operation of radiographic equipment.** RTEC 111 - Demonstrate the proper use of radiographic equipment and accessory items

	to produce high quality radiographs such as; darkroom processing, computerized processing, image display, and radiation protection techniques. Compare and contrast how proper use of these devices and processing can influence the outcome image and patient dose. RTEC 111 - Demonstrate the proper use of radiographic equipment and accessory items to produce high quality radiographs such as; darkroom processing, computerized processing, image display, and radiation protection techniques. **Compare and contrast how proper use of these devices and processing can influence the outcome image and patient dose.** RTEC 123 - Demonstrate the proper use of radiographic equipment and perform radiographic procedures using the energized laboratory and phantoms. RTEC 123 - Demonstrate the proper use of accessories and protective devices to meet acceptable patient care standards. RTEC 123 - Demonstrate prudent judgment administering ionizing radiation and technical competence to perform diagnostic imaging procedures.
Requisite Skill:	
Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable	
Requisite course:	
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	
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Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Dawn Charman
Date:	10/03/2011
Original Board Approval Date:	04/16/2012
Last Reviewed and/or Revised by:	Eric Villa

Date:	09/11/2023
Last Board Approval Date:	05/20/2024
Effective Term:	FALL 2025