



El Camino College
COURSE OUTLINE OF RECORD – Official

Course Acronym:	RTEC
Course Number:	233
Descriptive Title:	Radiographic Positioning 2
Division:	Health Sciences and Athletics
Department:	Radiologic Technology
Course Disciplines:	Radiologic Technology
Catalog Description:	In this course students will learn additional principles of radiographic positioning. Emphasis is placed on those procedures involving the cranium. Topics will include radiographic technique, anatomy, specialized equipment, patient safety, and radiation protection. Special imaging modalities and techniques will be discussed. The most common cranium pathologies will be demonstrated and identified on radiographic images.
Prerequisite:	Radiologic Technology 109 AND Radiologic Technology 124 with a minimum grade of C in prerequisite
Co-requisite:	Radiologic Technology 217 AND Radiologic Technology 244
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	2
Hours Laboratory (per week):	3
Outside Study Hours:	4
Total Course Hours:	90
Course Units:	3
Grading Method:	Letter Grade only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	3/15/1999
Transfer UC:	
Effective Date:	
General Education: ECC	
Term:	
Other:	
CSU GE:	
Term:	
Other:	
IGETC:	
Term:	

Other:	
Student Learning Outcomes:	<p>SLO #1 Radiographic Skull Positioning</p> <p>Students will demonstrate positioning a patient in the various positions needed to produce diagnostic quality radiographs in skull imaging.</p> <p>SLO #2 Radiographic Skull Image Evaluation</p> <p>Students will analyze radiographic images of the skull, recognize and identify any errors and accurately correct for the positioning errors.</p> <p>SLO #3 Radiographic Skull Anatomy and Positioning</p> <p>Students will analyze cranial anatomy and how it relates to proper positioning of the skull during radiographic exams.</p>
Course Objectives:	<ol style="list-style-type: none"> 1. Describe the standard radiographic positions required in the performance of radiographic exams of the cranium. 2. Identify anatomical structures of the cranium on a radiographic image. 3. Use base lines and topographical anatomy in the performance of radiographic positions of the cranium. 4. Demonstrate positioning skills for each unit of instruction. 5. Using the energized laboratory and phantoms, perform radiographic procedures appropriate for the cranium. 6. Evaluate and analyze radiographs of the cranium. 7. Demonstrate the use of accessories, protective devices, and technical factors to meet acceptable patient care standards. 8. Differentiate between the types of contrast media used for specialized radiographic procedures of the cranium and central nervous systems. 9. Compare and contrast the indications, contraindications, and associated complications with the use of each type of contrast media. 10. Describe the advantages of specialized imaging modalities which include Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Nuclear Medicine Scans, and Sonography for imaging of the cranium and central nervous system. 11. Identify and describe specific pathology that are common to the cranium and central nervous system.
Major Topics:	<p>I. Each of the instructional units listed shall include standard radiographic position, anatomical structures, positioning skills, radiographic image analysis and evaluation, and safe equipment and accessory utilization. (10 hours, lecture)</p> <ol style="list-style-type: none"> A. Skull B. Cranium C. Optic foramen <p>II. Each of the instructional units listed shall include standard radiographic position, anatomical structures, positioning skills, radiographic image analysis and evaluation, and safe equipment and accessory utilization. (8 hours, lecture)</p> <ol style="list-style-type: none"> A. Facial bones B. Mandible C. Maxilliae D. T.M.J.'s E. Zygomatic arches F. Nasal bones G. Orbits

	<p>III. Each of the instructional units listed shall include standard radiographic position, anatomical structures, positioning skills, radiographic image analysis and evaluation, and safe equipment and accessory utilization. (9 hours, lecture)</p> <p>A. Paranasal sinuses B. Maxillary C. Sphenoid D. Ethmoid E. Frontal</p> <p>IV. Other imaging modalities used for imaging of the cranium (4 hours, lecture)</p> <p>A. Computed tomography (CT) B. Magnetic resonance imaging (MRI) C. Nuclear medicine scans D. Sonography</p> <p>V. Pathology (5 hours, lecture)</p> <p>A. Cranium B. Central nervous system</p> <p>VI. Each of the instructional units listed shall include standard radiographic position, anatomical structures, positioning skills, radiographic image analysis and evaluation, and safe equipment and accessory utilization. (20 hours, lab)</p> <p>A. Skull B. Cranium</p> <p>VII. Each of the instructional units listed shall include standard radiographic position, anatomical structures, positioning skills, radiographic image analysis and evaluation, and safe equipment and accessory utilization. (20 hours, lab)</p> <p>A. Facial bones B. Mandible C. Maxillae D. T.M.J.'s E. Zygomatic arches F. Nasal bones G. Orbits</p> <p>VIII. Each of the instructional units listed shall include standard radiographic position, anatomical structures, positioning skills, radiographic image analysis and evaluation, and safe equipment and accessory utilization. (14 hours, lab)</p> <p>A. Paranasal sinuses B. Maxillary C. Sphenoid D. Ethmoid</p>
Total Lecture Hours:	36
Total Laboratory Hours:	54
Total Hours:	90
Primary Method of Evaluation:	3) Skills demonstration
Typical Assignment Using Primary Method of Evaluation:	Demonstrate (using the pixie phantom) a complete skull series examination. Demonstration must include positioning skills, technique selection, equipment manipulation, use of accessories and radiation protective measures.
Critical Thinking Assignment 1:	In a one-page written image critique, students will distinguish anatomical parts, correct positioning, and positioning errors of the four view skull series.
Critical Thinking Assignment 2:	Present, in an oral and written format, an evaluation and critique of images of a complete skull series for technical and diagnostic quality.

Other Evaluation Methods:	
Instructional Methods:	
If other:	Demonstration Discussion Group Activities Laboratory Lecture Multimedia presentations Role Play Simulation
Work Outside of Class:	0
If Other:	Study Skill practice Required reading Problem solving activities Written work Observation of or participation in an activity related to course content
Up-To-Date Representative Texts:	<u>Merrill's Radiographic Positioning & Procedures</u> (VOL 1& 2) Long et al, 15 th Ed. Elsevier 2022 Workbook: <u>Radiographic Anatomy, Positioning & Procedures Workbook</u> Long et al, 15 th Ed. Elsevier 2022
Alternative Texts:	
Required Supplementary Readings:	
Other Required Materials:	
Requisite:	Prerequisite
Category:	sequential
Requisite course(s): List both prerequisites and corequisites in this box.	Prerequisite: Radiologic Technology-109 AND Radiologic Technology-124 Corequisite: Radiologic Technology-217 AND Radiologic Technology-244
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	Ability to perform radiographic examinations and obtain optimum radiographic images of the cranium. RTEC 217 - Identify anatomical structures of the skull and facial bones on diagrams and radiographs. RTEC 109 - Critique radiographic images for appropriate clinical information, patient positioning and image quality. Apply corrective action when applicable to produce a diagnostic quality radiographic image. RTEC 217 - Critique images for appropriate clinical information, patient positioning and recorded detail. Apply appropriate corrective action when applicable to produce a diagnostic quality image. Ability to properly manipulate basic radiographic equipment and adapt equipment and exam to patients needs in the performance of skull radiography. RTEC 217 - Differentiate between emergency and non-emergency procedures and assist as necessary. RTEC 109 - Set up the exam room and demonstrate the appropriate clinical skills

required to successfully complete the minimum number of performance evaluations (competencies), as outlined in the student handbook and course syllabus.

RTEC 217 - Adapt procedures to meet age-specific, disease-specific, and cultural needs of the patient.

RTEC 217 - Assist and perform radiographic examinations of all areas, excluding special procedures, under the appropriate level of supervision in all aspects.

Knowledge of radiation safety and patient safety.

RTEC 244 - Compare how the practice of safe radiation protection measures to both patients and personnel can reduce the levels of radiation exposure during the use of radiographic and fluoroscopic equipment.

RTEC 217 - Demonstrate competency in the principles of radiation protections standards.

RTEC 244 - Identify the radiation protection and shielding requirements for radiographic, mobile and fluoroscopic procedures.

RTEC 217 - Select technical factors to produce quality diagnostic images with the lowest radiation exposure possible.

RTEC 244 - Formulate the correct technical factor changes needed when using different grids, changes in tube distance, intensifying screens speeds, and patient pathology. Compare the differences in technique with film/screen and digital image receptor response.

RTEC 244 - Evaluate and critique radiographic images and formulate methods for improving image quality, while reducing patient dose.

Basic knowledge and use of radiographic equipment.

RTEC 109 - Demonstrate proper radiation protection for the patient, doctor, and technologist during fluoroscopy examinations.

Utilize appropriate communication and positioning for infants, children, adults, and geriatric patients during radiographic examinations.

RTEC 124 - Identify standard radiographic positions and anatomical structures on a radiographic image.

RTEC 124 - Use topographical anatomy in the performance of radiographic positions.

RTEC 124 - Demonstrate the use of accessories, protective devices, and technical competence to perform diagnostic imaging procedures and meet acceptable patient care standards.

RTEC 124 - Demonstrate the proper use of fixed and mobile radiographic equipment.

RTEC 124 - Formulate special technical considerations and demonstrate positioning skills necessary when performing radiographic procedures on an infant, elderly, or surgical patient.

RTEC 124 - Explain the types of immobilization devices and positioning considerations required for patients with fractures, wounds, head injuries and other types of trauma.

RTEC 124 - Identify specific types of tubes, lines and catheters and describe the special problems faced in performing procedures on the acutely ill patient with these devices in place.

RTEC 124 - Explain the appropriate radiation protection required when performing mobile and surgical radiography.

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).	
Requisite Skill:	
Requisite Skill and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s). If applicable	
Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	D. Visintainer
Date:	04/01/1971
Original Board Approval Date:	
Last Reviewed and/or Revised by:	Dawn Charman
Date:	02/14/2024
Last Board Approval Date:	05/20/2024
Effective Term:	FALL 2025