RADT A270: RADIOGRAPHIC POSITIONING AND CRITIQUE 3

Item	Value
Curriculum Committee Approval Date	12/02/2020
Top Code	122500 - Radiologic Technology
Units	2.5 Total Units
Hours	72 Total Hours (Lecture Hours 36; Lab Hours 36)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	Yes
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)

Course Description

Radiographic positioning, film critique of advanced skull to include sinuses, TMJs, mastoid, mandible, facial bones, bony thorax and pelvic girdle. Introduction to ancillary imaging modalities including sectional anatomy. PREREQUISITE: RADT A175. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Develop positioning skills applicable to specialized cranial exams, bony thorax, pelvic girdle, and shoulder studies.
2. Apply principles of image analysis to the examination in the course.
3. Demonstrate appropriate patient care skills and adherence to radiation protection practices.

Course Objectives

- 1. Identify sectional anatomical structures in relation to the skull/ cranium, pelvic girdle, bony thorax, and shoulder girdle.
- 2. Perform radiographic procedures of the advanced skull, cranium, pelvic girdle, and bony thorax, and shoulder girdle.
- 3. Identify other ancillary radiographic modalities, including nuclear medicine, radiation oncology, and sonography.
- 4. Demonstrate advanced radiographic positioning techniques.
- 5. Select optimum exposure factors and radiographic accessories.
- 6. Apply skill to appropriately use: low dose radiography, beam limiting devices, gonadal shielding, and beam alignment.
- 7. Analyze and evaluate quality of radiographic images.

Lecture Content

Introduction to course objectives and laboratory procedures and equipment. Review of basic skull Anatomy Routine positions Positioning terminology Radiographic baselines/planes Laboratory introduction Sectional plates Computer review programs X-ray room usage and protocol Film/jacket labeling Advanced skull anatomy and positioning Sella turcica Sphenoid anatomy Temporal anatomy Petrous pyramids Internal ear anatomy/ physiology Positions Routine views Posterior-anterior Lateral Anterior-posterior axial Submento-vertex Sectional plates Film critique Cranial bones; anatomy and positioning continued. Frontal bone Occipital bone Ethmoid bone Parietal bone Sectional plates Film critique Pathology Review Facial bones; anatomy and positioning Zygomatic arches Waters SMV Nasal bones Modified waters Lateral Sectional plates Film critique Orbits; anatomy and positioning Bones comprising orbits Optic Foramen Rhese Caldwell Cross section of orbit Eye physiology Film critique Mandible; anatomy and positioning Anatomy of mandible and TMJ Positions Posterior-anterior Obliques Lateral axial Schullers Open and closed TMJs Cross section/tomograms Film critique Pathology review Sinuses and temporal bone; anatomy and positioning Special considerations Anatomy Frontal sinus Ethmoidal sinus Maxillary sinus Sphenoidal sinus Positions Waters Lateral Caldwell Pirie SMV Cross sectional anatomy Film critique Pathology review Anatomy and positioning of the pelvic girdle Anatomy Ilium bone Ischium bone Pubic bone Positions AP (and angled views) Lateral (frogs) Acetabulum and SI joints Danielus-Miller Clayton-Johnson Cross sectional pelvis plates Film critique Pathology review Boney thorax; anatomy and positioning Anatomy Sternum Ribs Clavicle Scapula Positions Sternum - rao/lat Ribs ap and obliques Cross sectional thorax plates Film critique Bony thorax; anatomy and positioning cont. Positions Clavicle ap and ap axial Scapula ap and Y view Cross sectional thorax plates Film critique Computer review Shoulder girdle; anatomy and positioning Anatomy Acromial Clavicular joint Glenoid fossa Humerus Positions Shoulder - internal, external, ap axial and bicipital groove Humerus- transthoracic AC joint - ap and axial Pathology review Introduction to Nuclear Medicine Basic physics of nuclear medicine Practical medical applications Types of Isotopes Lab Complete film assignments Film critique Computer review Introduction to Radiation Therapy Basic physics of radiation therapy Medical applications Lab Complete film assignments Film critique Computer review Introduction to Medical Sonography Basic physics of Diagnostic Medical Sonography Current medical applications Lab Complete film assignments Film critique Computer review Final comprehensive examination written format Lab examinations: Anatomy identification (dry skull) Positioning skills (2 films to be taken) Cross sectional anatomy identification on plates

Lab Content

Introduction to course objectives and laboratory procedures and equipment. Review of basic skull Anatomy Routine positions Positioning terminology Radiographic baselines/planes Advanced skull anatomy and positioning Sella turcica Sphenoid anatomy Routine views Posterior-anterior Lateral Anterior-posterior axial Submento-vertex Sectional plates Film critique Cranial bones; anatomy and positioning continued. Frontal bone Occipital bone Ethmoid bone Parietal bone Film critique Pathology Review Facial bones; anatomy and positioning Zygomatic arches Waters SMV Nasal bones Modified waters Lateral Film critique Orbits; anatomy and positioning Bones comprising orbits Optic Foramen Caldwell Cross section of orbit Eye physiology Film critique Mandible; anatomy and positioning Anatomy of mandible and TMJ Positions Posterior-anterior Obliques Lateral axial Schullers Open and closed TMJs Cross section Film critique Pathology review Sinuses and temporal bone; anatomy and positioning Special considerations Anatomy Frontal sinus Ethmoidal sinus Maxillary sinus Sphenoidal sinus Positions Waters Lateral Caldwell Pirie SMV Cross sectional anatomy Film critique Pathology review Anatomy and positioning of the pelvic girdle Anatomy Ilium bone Ischium bone Pubic bone Positions AP (and angled views) Lateral (frogs) Acetabulum and SI joints Danielus-Miller Clayton-Johnson Cross sectional Film critique

Pathology review Boney thorax; anatomy and positioning Anatomy Sternum Ribs Clavicle Scapula Positions Sternum - rao/lat Ribs ap and obliques Cross sectional thorax plates Film critique Bony thorax; anatomy and positioning cont. Positions Clavicle ap and ap axial Scapula ap and Y view Cross sectional thorax plates Film critique Computer review Shoulder girdle; anatomy and positioning Anatomy Acromial Clavicular joint Glenoid fossa Humerus Positions Shoulder - internal, external, ap axial and bicipital groove Humerus- transthoracic AC joint - ap and axial Pathology review Introduction to Nuclear Medicine Basic physics of nuclear medicine Practical medical applications Types of Isotopes Lab Complete film assignments Film critique Computer review Introduction to Radiation Therapy Basic physics of radiation therapy Medical applications Lab Complete film assignments Film critique Computer review Introduction to Medical Sonography Basic physics of Diagnostic Medical Sonography Current medical applications Lab Complete film assignments Film critique Computer review Final comprehensive examination written format Lab examinations: Anatomy identification (dry skull) Positioning skills (2 films to be taken) Cross sectional anatomy identification on plates

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- Lab (04)
- DE Live Online Lab (04S)

Instructional Techniques

Lecture - demonstration Laboratory returns skill demonstration Film critique Computer review program Cross-sectional anatomy plates Video/slides Articulated/disarticulated cranial bones and skeleton

Reading Assignments

Students will spend approximately 1-2 hours on reading assigned text and materials.

Writing Assignments

Students will spend approximately 1-2 hours a week on writing assignments, including the following: 1. Students are assigned a research topic/short paper 2. Some examinations and quizzes contain essay format questions. 3. Weekly lab asisgnments have a short written response required for certain questions.

Out-of-class Assignments

1. Students are expected to do a minimum of 1 hour of research per week in preparation for their senior research paper/poster presentation. 2. A minimum of 1 hour per week should be dedicated to reading and review of the textbook and the adaptive quizing available through the textbook publ;isher. 3. There will also be occasional homework assignments addressing the weekly discussion topics.

Demonstration of Critical Thinking

Attendance and punctuality. Adherence to laboratory guidelines Lab and class participation Completion of lab projects Research topic - short paper Film critique Examinations and quizzes

Required Writing, Problem Solving, Skills Demonstration

1. Students are assigned a research topic/short paper 2. Some examinations and quizzes contain essay format questions.

Eligible Disciplines

Radiological technology: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Frank, Eugene.. Merrills Atlas of Radiographic Position and Procedures., ed. Elsevier/Mosby, 2013 2. Required Applegate, Edit.. Sectional Anatomy, , ed. Elsevier/Mosby,, 0 Rationale: - 3. Required Hayes, Steven. Radiographic Anatomy, Positioning, and Procedures Workbook., ed. Mosby, 2013 4. Required McQuillen-Martensen, Kathy.. Radiographic Critique., ed. W.B. Saunders, 2015 Rationale: -

Other Resources

1. Pathology Files, OCC Lab Image Critique Files, OCC Lab Computer Instructional programs