SALT LAKE COMMUNITY COLLEGE
Radiologic Technology Program

Course Syllabus

Course and Credit Hours: RADS 1120 4 hours

Name of Course: Radiographic Anatomy and Procedures II

Semester and Term:

Class Location and Time:

Instructor and phone:

Office Location:

Mailbox Location:

Email Address:

Consultation Hours:

Textbook: Frank, E.D., Long, B.W., & Smith, B.J. **Merrill's Atlas of Radiographic Positioning & Procedures.** (14th ed.). St. Louis, Mi: Elsevier/ Mosby. ISBN: 13 978-0-323-56667-4 with workbook

none

Required Equipment:

Link or Instructions for Accessing Online Course Materials: Powerpoints, reviews, grades and other information can be found on Canvas**.**

Library Link: For a list of resources that support the program go to: http://libguides.slcc.edu/content.php?pid=16754

Prerequisite: Completion of prior semester courses per established curriculum plan.

Diversity Statement: It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups.

Covid 19 statement:

Due to the uncertainties of COVID-19, course delivery (such as moving to online) is subject to change at any point during the semester if recommended or mandated by state/national government officials.

SLCC Syllabus Statement on Face Coverings

Salt Lake Community College is committed to face coverings as a way to protect everyone on campus. Until further notice, SLCC policy requires everyone to wear face coverings in shared public spaces on campus, including the classroom. When we wear face coverings, we're protecting ourselves and others. Reusable cloth masks are available at campus information desks (one per person). Students who forget a face covering will be asked to retrieve it, or they will be provided with a disposable mask. Students refusing to wear a face covering will be dismissed from class. Additionally, a referral will be made to the Dean of Students for a possible violation of the Code of Student Rights and Responsibilities. Students who choose not to wear a face covering are encouraged to take Online or Broadcast/Internet Lecture courses.

Note that some students may qualify for accommodations through the Americans with Disabilities Act (ADA). If you think you meet these criteria and desire an exception to the face covering policy, contact the Disability Resource Center (DRC).

Course Description: This course covers anatomy and procedures of the spine, thorax, skull, sinuses and facial bones. In addition, densitometry and pediatric imaging are taught.

SLCC's Student Learning Outcomes:
SLCC is committed to fostering and assessing the following student learning outcomes in it programs and courses:

1. Acquire substantive knowledge
2. Communicate effectively
3. Develop quantitative literacies
4. Think critically & creatively
5. Become a community engaged learner
6. Work in professional & constructive manner

Program Outcomes:

1. Students will be clinically competent
   - Students will utilize proper radiation protection practices
   - Students will produce diagnostic quality radiographs

2. Students will demonstrate effective communication skills
   - Students will explain procedures to patients
   - Students will communicate with clinical staff

3. Students will exhibit critical thinking
   - Students will analyze radiographic image quality
   - Students will modify exams for unique situations

4. Students will model professionalism
   - Students will exhibit integrity and confidentiality
   - Students will demonstrate lifelong learning

Course Student Learning Outcomes:
Upon completion of this course, the student will be able to complete the following:

1. Preform acceptable Spine, Skull and Boney Thorax Radiographs
2. Analyze Spine, Skull and Boney Thorax Radiographs for acceptability and be able to make corrections.
3. Demonstrate proper communication and positioning when working with all pediatric age ranges.
4. Delineate the Radiographers role in Child Abuse cases
5. Define what a DEXA Scan is and how it works

Course and Chapter Objectives:

I. General Information for Each Projection/Position:

- State the size and orientation of IR and CR for each position/projection.
- Describe the patient preparation for each position/projection.
- Demonstrate appropriate radiation protection for each position/projection.
- Provide the correct SID for each projection/position.
- Place anatomic markers correctly.
- Identify routine and possible additional views for each procedure including recommended modifications or alternative projections.
- Recall contraindications for any projection/position.
- Demonstrate ability to adapt positioning to accommodate patient needs.
- Identify anatomy on radiographs and diagrams.
- Cite structures shown and evaluation criteria for each essential projection.
- Analyze radiographs for correct positioning and technical factors and identify corrections as needed.
- Explain and demonstrate the proper positioning of the patient and part for all essential projections.

II. Spine:

Reading Assignment: Merrill's Volume 1, Chapter 9

A. Cervical Spine

- List and describe the location of the five categories of the vertebral column
- Differentiate the types of normal curves in the vertebral column
- List additional terms for the first, second and seventh vertebrae.
- Identify positions that demonstrate the right/left zygapophyseal joints and intervertebral foramina.
- Explain rationale for use of 72" Source to Image Distance (SID) for obliques and lateral.
- State degree of rotation required for obliques of cervical spine.
- Describe how to adjust occlusal plane to be perpendicular to Image Receptor (IR) for the open-mouth projection for C1-2.
- State alternative methods to demonstrate C1-2.
- Explain 2 methods that can be used to lower the shoulders for better visualization of C7.
- State rationale for performing lateral c-spine first in a trauma exam.
- State reasons for performing lateral flexion and extension positions.
- List several types of fractures related to the cervical spine.
- Describe the following projections:
  - Fuchs and Judd
  - Atlas and axis (open mouth odontoid)
  - AP axial
  - Lateral
  - Trauma Lateral
  - Lateral Cervicothoracic (Swimmers)
  - Flex-extend
  - AP Obliques and PA Obliques

B. Thoracic Spine

- Describe how the anode heel effect can be utilized when performing the AP thoracic spine projection.
- Describe the positioning for the Swimmer's view.
- State the degree angulation of the body with the midcoronal plane for the oblique position of the thoracic spine.
- Identify which position/projection best demonstrates the intervertebral foramen and the zygapophyseal joints.

- Describe what a breathing technique is and how it can be utilized when performing a lateral thoracic spine.
- Describe the following projections:
  AP
  Lateral
  Obliques

C. Lumbar Spine

- Define spondylolisthesis, spina bifida and herniated nucleus pulposus.
- State how the lordotic curvature can be reduced when performing an AP projection of the lumbar spine.
- Identify the parts of the Scotty dog as seen on the oblique position of the lumbar spine. State the degree of obliquity needed to visualize the Scotty dogs for the lumbar vertebrae.
- Identify which position/projection best demonstrates the intervertebral foramen and the zygapophyseal joints.
- Identify joint classification and movement of the zygapophyseal joints.
- Discuss advantages and disadvantages of performing the lumbar spine exam prone.
- Define the term scoliosis.
- Discuss various methods of shielding that can be utilized for a scoliosis series.
- Perform the following projections:

AP and PA	Lateral
L5-S1 lateral spot	AP and PA Obliques
Flexion and extension	Right and Left Bending
Scoliosis series	

D. Sacrum/Coccyx

- State the degree of angulation and direction of the central ray for both the AP axial and PA axial projection of the sacrum and coccyx
- Discuss why an empty urinary bladder and clean colon will enhance the radiographic quality of the AP/PA axial projection of the sacrum/coccyx.
- Describe the following projections:

Sacrum/coccyx	SI Joints
AP/PA axials	AP /PA axials
Laterals	Obliques

III. Skull, Facial Bones, and Sinuses:
Reading Assignment, Volume 2, Chapter 11

A. Skull

- Define and identify skull topographic landmarks.
- Differentiate common positioning errors of rotation and tilt.
- Adapt positioning and technical factors for trauma scenarios.
- Describe the following projections:
  Lateral- upright , recumbent, and cross table
  PA and PA axial (Caldwell)
  AP and AP axial
  AP axial (Towne)
  PA axial (Haas)
  SMV

B. Sinuses

- Recognize anatomy of the paranasal sinuses on diagrams and radiographs.
- Differentiate the differences and similarities of skull and facial bone positioning.
- State the reason sinuses must be done upright or with a horizontal beam.
- Describe the following projections:

Paranasal Sinuses
Lateral
PA axial (Caldwell)
Parietoacanthial (Waters and open mouth Waters)
SMV

C. Facial Bones

- Recognize topographic landmarks and positioning baseline.
- Differentiate the differences and similarities of skull and facial bone positioning
- Describe the following projections:

Facial Bones
Lateral
PA axial (Caldwell)
Parietoacanthial (Waters)
Parietoacanthial Modifications

Orbits
PA axial (Caldwell)
Lateral
Parietoacanthial (Waters)

Nasal Bones
Lateral
Parietoacanthial (Waters)
PA (Caldwell)

Zygomatic Arches
SMV
Tangential
AP axial (Towne)

Mandible
PA for Rami
PA axial for Rami
PA for Body
PA axial for body
Axiolateral
SMV

TMJ
AP axial
Axiolateral
Axiolateral oblique

IV. Bony Thorax:
Reading Assignment: Merrill's Volume 1, Chapter 10

A. Sternum/ SC joints

- Identify and define the three classifications of ribs.
- Specify the importance of proper breathing instructions for radiography of the bony thorax.
- Identify landmarks associated with jugular notch, angle and xiphoid.
- Explain why the RAO\LPO is the preferred oblique for the sternum.
- State typical amount of rotation required for the oblique sternum.
- Identify 3 ways the lateral sternum can be performed on a patient.
- Describe the following projections:

Sternum
PA oblique (RAO position)
Lateral (recumbent or upright)

Sternoclavicular Articulations (SC Joints)
PA
AP and PA Obliques

B. Ribs

- Identify true and false ribs.
- Identify joints associated with ribs.
- State why an upright chest is taken in conjunction with a rib exam.
- Explain how you determine which oblique projection to take of the ribs.
- Identify the oblique as the best projection to demonstrate the axillary portion of the ribs.
- State correct breathing instructions for ribs above and below the diaphragm.
- Describe rational for performing ribs above the diaphragm in the upright position and ribs below the diaphragm recumbent.
- Describe the following projections:
  Ribs
  PA Chest
  PA and AP Upper and Lower Ribs
  Anterior and Posterior Obliques

V. Pediatric Radiography
Reading Assignment: Merrill's Volume 3, Chapter 22

- Demonstrate proper positioning and holding techniques for Pediatric Radiography.
- Demonstrate proper communication techniques for parent.
- Explain communication skills necessary to work with various age groups of pediatric patients.
- Delineate the psychological patient care aspects of pediatric patients including those with special needs.
- Practice radiation protection methods designed for children,
- Define the radiographer's role in suspected cases of child abuse.
- Discuss common pediatric pathologies.
- Explain radiographic procedures unique to pediatric patients.

VI. Bone Densitometry
Reading Assignment: Merrill's Volume 2, Chapter 19

- Describe the uses of bone densitometry and what it measures.
- Explain how dual x-ray absorptiometry (DXA) works.
- Discuss the process of bone remodeling, and how age and osteoporosis affect this process.
- Identify risk factors associated with osteoporosis.
- Differentiate between primary and secondary osteoporosis.
- Discuss what causes most fractures, and the most common fractures.
- Describe how to analyze the data obtained from a bone densitometry study.
- Discuss what T and Z-scores are, and their significance to patients with osteoporosis.
- Recall the World Health Organization classifications of bone densitometry by T- score.
- Discuss radiation protection recommendations.
- Describe information that needs to be obtained during the patient history.
- Describe how to perform lumbar, hip scans.
- State how osteoporosis is treated.

Course Requirements:

Test and Quizzes. As per the Student Handbook, **tests must be taken on the day assigned at the designated time. In the event the student will miss an exam, they must call or e-mail the instructor** PRIOR **to the designated test start time. Phone messages are acceptable.** IF THE STUDENT DOES NOT CALL OR E-MAIL PRIOR TO THE TEST START TIME, the student must take the test with an automatic 50% deduction.

Attendance. **As per the Student Handbook,** attendance in class is **extremely** important. You are forming work habits and a reputation that will follow you into the professional environment. You are expected to be present for all courses and participate in planned activities. The student will inform an instructor by phone or e-mail of their absence. It is the responsibility of the student to obtain notes, handouts or assignments given on any missed day. *Students who have **absences in excess of 20%** of total attendance time in each course will be **terminated** from the program*

Student Responsibilities. Students are expected to complete reading assignments prior to scheduled class/lab times. Students should have completed workbooks, etc. and be prepared to discuss the material knowledgeably. If the student is having difficult in the course, it is the student's responsibility to make arrangements to take with the Instructor. Students are expected to be self-directed and motivated in identifying their learning needs associated with the course content.

Assignments.
See above for reading assignments. Specific due dates for test and assignments are in the course schedule.

Assignment descriptions are found on Canvas.

8 exams will be given, 7-unit exams and 1 final comprehensive exam.

Image critique assignment- each student will turn in 2 images (these can be hard copy or digital), one image must be textbook perfect, and one must be unacceptable. They do not have to be the same of the same body part and the student doesn't have to be the person taking the image.

Students must include a typed report for each image including the following:

Textbook image:
- Describe what anatomy must be included on the image
- Describe the correct positioning for this image
- Describe how the image meets the evaluation criteria
- Describe any radiation protection measures evident on the image
- Describe how you can tell the IR exposure and contrast are appropriate for this image
- Discuss the correct marker and market placement on this image

Unacceptable image:
- Describe why this image is unacceptable
- Thoroughly describe what corrective measures must be taken to make this an acceptable image

This assignment is worth 30 points and the grading rubric can be found on Canvas.

Reflection Paper Assignment- Each student will write a 2-page reflection paper about his/her experiences this semester. Papers should be double-spaced and use a 12-point font. The reflection portion of this paper should cover the entire 2 pages and not include your name, the title of the paper, or any graphics. Topics that could be included are how this semester is different than last semester, what is your favorite exam or least favorite exam, a patient that really changed the way you look at healthcare and being a rad tech, a funny situation or patient, a poignant situation or patient, concerns about moving to a new site, challenges and triumphs, how a tech or CI has influenced you. This is not an all-inclusive list just some ideas to get you thinking.

This assignment is worth 25 points and the grading rubric can be found on Canvas.

Workbook assignments- will be due the class before the exam. See the course schedule for specific pages that must be completed.

Incomplete. Students must complete all requirements and receive a C grade or higher in each course to remain in the program. If a student receives less than 75% on any unit test, they cannot perform clinical competencies on those exams until they have passed the test with a 75% or higher. The initial grade will be recorded in the grade book.

Class Procedure or Format:
Due to covid this course will be taught virtually. Teaching strategies include but are not limited to reading/workbook assignments, examinations, lecture, and class participation activities i.e. role-play, small group work, and written assignments.

Evaluations:

Spine Test	10%
Skull Anatomy Test	10%
Skull Procedures Test	10%
Facial Bones Test	10%
Bony Thorax Test	10%
Pediatric Test	10%
Densitometry Test	10%
Workbook assignments	5%
Image critique	5%
Reflection paper	5%
Comprehensive final	15%

Grading:

95-100	**A**	75-77	**C**
90-94	**A-**	71-74	**C-**
87-89	**B+**	67-70	**D+**
83-86	**B**	64-66	**D**
80-82	**B-**	Below 64	**E**

Only parts of this section apply due to Covid.

Wireless Devices in the Classroom:
The advent of technology use in the classroom as an instructional tool has caused both opportunities and distractions. Wireless devices cause individual inattentiveness and can make it difficult for others to stay focused. The following policies are in effect during class:

1. Cell phones, iPods/Pads, pagers, High-Resolution DVR Spy pens with webcam, microphones, recorders or any other wireless devices (excluding ADA authorized devices) that may distract from the class are to be silenced and/or set to vibrate mode before entering the classroom and may not be on the desk during class. This allows students to receive SLCC emergency notifications through email or text messaging alerts.

2. Wireless devices can be checked during class breaks outside the classroom.

3. You are expected to engage in discussion for the class. If you are discovered engaging in reading/texting messages, surfing the web and engaging in other computer activities not directly related to class, you will be asked to leave the class and will be counted as absent for that class session.

4. You may not record or publish information from the class without written authorization from the instructor. If used without written authorization, you will have violated "Privacy/Intellectual Property Rights".

Student Handbook:
Students must adhere to all policies and procedures of the Radiologic Technology Program as documented in the Student Handbook. It is the student's responsibility to be aware of, and follow, all requirements as listed in the Handbook.

Emergency Evacuation Procedures
In case of an emergency situation, elevators should not be used as emergency exits. All class members should exit through the nearest doors on the west side of the building, then proceed toward the round-about on the northeast side of the building. We will then verify that all students are accounted for and unharmed. Please inform your instructor if you require assistance or accommodation during an evacuation. The instructor will identify several students in the class that are willing to provide assistance. If you have a disability, please notify your instructor and fill out an Evacuation Information Form

The SLCC Department of Public Safety is using an app called the Crisis Manager to inform students and staff about Emergency Procedures. The app allows SLCC to instantly update these procedures. To download this app go to the App Store or Google Play Store, type **SchoolDude CrisisManager** in the search box and click "Get" or "Install. For questions regarding the Emergency Procedures or downloading the app to your device, please contact [redacted]

Academic Grievance Policy

In accordance with the Salt Lake Community College Student Code of Conduct, http://www.slcc.edu/policies/docs/Student_Code_of_Conduct.pdf, the grievance policy for students with reference to academics can be found in Section III. Students are encouraged to seek resolution with the instructor(s) whenever possible.

It is the goal of the School of Health Sciences to be forthright and consistent with specific academic policies throughout divisions and programs. This policy singularly addresses academic issues and the general principles for disciplinary actions as noted in the Student Code of Conduct Section III. It should be noted it is up to the faculty's discretion to provide warning (verbal or written), suspension, or dismissal based upon program policy and severity of the issue at hand. It is realized in some health sciences programs a failing grade, as stated in the syllabus and/or policy manual, may result in program dismissal.

STEP ONE: A student has the right, as per college policy, to grieve a grade, warning (verbal or written), suspension, or dismissal received within a program of study. A student, as per policy, must make an appointment to meet with the instructor of the class. A meeting, for anything other than a final grade, should be made within ten (10) days of the incident. Final grade disputes require a meeting within 30 days of the student receiving the grade. Every effort should be made to find resolution and provide evidence from both parties with respect to the grade issued.

STEP TWO: If a resolution cannot be made, the student must request in writing five (5) business days from the date of meeting with the faculty, a committee review of the grievance to the Associate Dean of the specific division. The grievance will be reviewed by a committee consisting of three (3) to five (5) faculty outside the program in which the student is enrolled. This will include the following members, the Associate Dean and two to four faculty members outside the discipline. The Associate Dean will serve as committee chair. One faculty and the program coordinator of the program involved in the grievance can attend the procedure, as can the student with one representative. Each of these parties will only be allowed to present evidence to the committee and not vote on the issue in question. Legal representation is allowed by either party. The proceedings will be recorded for accuracy. Upon completion of the proceedings, the committee ONLY will vote

on the issue(s) noted in the student's grievance. A formal letter will be provided by the committee chair within ten (10) business days of the end of the proceeding with the committee's decision regarding the issue.

STEP THREE: If the student is not satisfied with the outcome, they may appeal to the Academic Dean of the School of Health Sciences. This must be done in writing within five (5) days of receiving the formal letter from the grievance committee chair. The Dean will review the appeal, all evidence, and render a decision to the student within ten (10) days of receiving the formal letter from the student. The decision of the Dean of the School of Health Sciences is final and cannot be appealed.

SLCC Institutional Resources:
For information on SLCC Institutional Resources, please refer to the link on Canvas under Institutional Syllabus