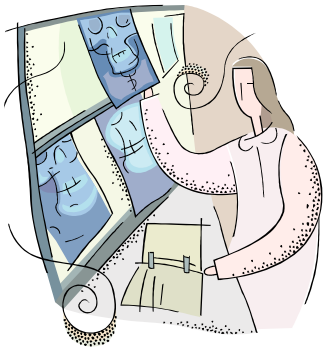

SALT LAKE COMMUNITY COLLEGE

Radiologic Technology Program

Course Syllabus

Course and Credits: RADS 2020, 2 credits

Name of Course: Radiographic Anatomy and Procedures IV

Semester and Term:

Time and Class Location:

Instructor and Phone:

Office Location:

Mailbox Location:

Email Address:

Consultation Hours:

Textbook: Merrill's Atlas of Radiographic Positions and Radiologic Procedures Phillip W. Ballinger/Eugene Frank 14th or 15th Edition with workbook.

Link or Instructions for Accessing Online Course Materials: Information is found in 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.

During this semester each student is required to apply for graduation. Proof of receipt of graduation registration must turned in to the Program Director before the end of the fall semester

Course Description: Procedures of an advanced and specialized nature covered. Includes mobile, trauma and operating room radiography. Circulatory system anatomy and procedures also covered.

SLCC 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
7. Develop computer & information literacy
8. Develop lifelong wellness

Courses Student Learning Outcomes:
1. Explain industry standards for mobile x-ray exams and critique mobile chest x-rays.
2. Demonstrate how to adapt positioning for trauma x-rays.
3. Discuss Surgical X-rays and how to protect the sterile field.
4. Differentiate the different advanced procedures within -x-ray, including mammograms, myelograms and arthrograms
5. Identify and name the vessels in the circulatory system.

Course Unit Objectives: Upon completion of this course, the student will be able to:

1. Mobile Radiography

Reading Assignment: Merrill's 14th edition, **Volume 3**, Ch. 20 pages 2-30
Directed Reading "Mobile Chest Radiography; Improving Image Quality"

Merrill's 15th edition, **Volume 3**, Ch. 20 pages 2-26
Directed Reading "Mobile Chest Radiography; Improving Image Quality"

- Describe the principles of mobile radiography to include its purpose and some common locations for its use.
- Compare mobile x-ray machines to department machines to include mAs, kVp and Kilowatt (kW) capabilities.
- Identify technical considerations when performing mobile radiography with the use of a grid.
- Describe how the anode-heel effect may impact mobile radiography and how to use it to obtain the optimum image.
- List typical source to image distance (SID) used for mobile radiography and how it impacts exposure factors.
- Record techniques and utilize technique charts.
- Discuss radiation safety practices necessary during mobile radiography.
- Describe instances when isolation techniques are required and how to correctly perform mobile radiography in isolation situations.

- List initial procedures that must be followed prior to performing mobile examinations.
- Discuss details that must be considered while performing the mobile examination.
- Describe patient considerations for the following:
    - Assessment of the patient's condition
    - Patient mobility
    - Fractures
    - Interfering devices
    - Positioning and asepsis

Additionally, students will be required to do the following:

1. Complete directed reading assignment (must be typed using 12-point font) on "Mobile Chest Radiography, Improving Image Quality". This is an individual assignment and should not be done in groups.
2. Complete an image critique of chest radiographs provided online using an image analysis assessment tool.
3. Complete workbook pages 14th edition 514-521 or 15th edition 512-518 and post a discussion telling us about a challenging exam or challenges you have had with portable x-rays

2. Trauma Radiography

Reading Assignment:

Merrill's 14th, edition, **Volume 2**, Ch.12, pages **111 to 150** you will also want to revisit the mobile radiography chapter as well
Directed Reading "Traumatic Injuries to the C-Spine"

Merrill's 15th, edition, **Volume 2**, Ch.12, pages **111 to 150** you will also want to revisit the mobile radiography chapter as well
Directed Reading "Traumatic Injuries to the C-Spine"

- Describe common causes of trauma.
- Discuss preliminary considerations of trauma radiography to include specialized equipment, exposure factors, and positioning of the patient.
- Explain the role of the radiographer during trauma procedures.
- Discuss radiation protection practices during trauma radiography.
- Explain issues relating to patient care during trauma radiography.
- List and describe the "Best Practices" during trauma radiography.
- Regarding radiographic procedures in trauma, describe details of the following:
    - Common initial trauma procedures
    - Patient preparation
    - Breathing instructions
    - Immobilizing devices
    - Image Receptor (IR) size
    - Central Ray (CR), part and IR alignment

    - Image evaluation
    - Documentation
- Describe how to perform the following trauma procedures:
    - C-spine
    - T and L-Spine
    - Chest
    - Abdomen
    - Pelvis
    - Cranium
    - Facial bones
    - Upper limb
    - Lower Limb
    - Cystography
    - Intravenous urography (IVU)
- Recall the three causes of damage to the brain.
- List common trauma and types of injuries that may be caused.
- Describe trauma fixation devices.
- Discuss how to reverse or modify a position.
- Describe problems encountered when performing horizontal-beam projections and how to overcome those problems.
- Given a hypothetical trauma situation, describe how to perform the procedures and list all considerations that must be given.

1. Complete directed reading assignment for C-spine injuries

2. Complete workbook 14th edition pages 407-412 or 15th edition pages 405-410 and post a discussion telling us about one or two trauma exams you have had to perform. Then respond to one fellow classmate's post.

3. Surgical Radiography

Reading Assignment: Merrill's, 14th edition, **Volume 3**, Ch. 21 pages **32-68**

Merrill's, 15th edition, **Volume 3**, Ch. 21 pages **28-68**

- Describe sterile team members and their roles in surgical radiography.
- Describe non-sterile team members and their roles in surgical radiography.
- Discuss how to maintain a sterile field.
- Recall what type of communication is necessary in surgery.
- Describe how to properly cover the IR and how to dispose of it after the exam.
- Explain how to properly drape a C-arm.
- List principles of aseptic technique
- Describe typical surgical equipment.
- Recall how to properly clean surgical equipment.
- List types of fluoroscopic procedures.
- List types of mobile radiographic procedures.
- Describe details of performing the following fluoroscopic surgical procedures:
    - Operative Cholangiography

        - Chest/bronchoscopy line placement
        - C-spine Anterior Cervical Disc Fixation
        - L-spine
        - Hip pinning
        - Femur or tibial nail
        - Humerus
        - Trans-sphenoidalhypophyssectony
        - Femoral or tibial arteriogram
- Describe details of performing the following mobile surgical procedures:
        - C-spine
        - T or L spine
        - Extremity
- List the steps required in the surgical radiography procedure.
- Describe considerations that must be given to technical factors used in surgical radiography.

Additionally, students will be required to do the following:

1. In at least 300 words, tell about a surgery case you performed. Then read at least three posts from another student and respond in at least 100 words to one of them. See grading rubric for criteria on your 300 word post.
2. Complete workbook 14th edition pages 522-526 or 15th edition pages 519-523.

4. Advanced Procedures

PROCEDURES AND READING ASSIGNMENTS:

Arthrography	Merrill's 14th edition, **Volume 2, Ch 13, pg 154-162** or Merrill's 15th edition, **Volume 2, Ch 13, pg 154-162**
Mammography	Merrill's, 14th edition, **Volume 2, Ch 18, pg. 357-371, & 414** or Merrill's, 15th edition, **Volume 2, Ch 18, pg. 357-371, & 412**
Myelography	Merrill's, 14th edition, **Volume 2, Ch 14, 164-171** or Merrill's, 15th edition, **Volume 2, Ch 14, 164-172**

- Describe all pertinent anatomy being studied.
- Explain the patient preparation necessary for each advanced study.
- Discuss any special equipment and supplies necessary for each of the studies covered.
- Review the steps of the procedure for each exam.
- List the purpose of each study and what anatomy or function is demonstrated.
- Indicate the contrast media used, the usual dosage and the route of administration.
- Identify the study, structure visualized and function demonstrated on radiographs.

- List the positioning unique to each exam covered.
- Identify the projection and/or position for each exam

Additionally, students will be required to do the following:

1. Research an advanced procedure done at their facility (i.e. arthrogram, angiogram, endoscopy, or interventional exam, do not use UGI, BE or Barium Sallow) and post a video that describes and/or demonstrates the procedure. Then look at 3 other student's post and respond to one of them.
2. After reading and looking at the risk factors on the American Cancer Society's web page, tell us about two factors that stood out to you and why.
3. Workbook: Pages 14th edition pages 413-420, or 15th edition pages 411-418 none for Mammo

5. Circulatory System

Reading assignment: Merrill's, 14th edition, **Volume 3,** Ch. 27**,** pages **276-281,295-307, 310, 316**
or Merrill's, 15th edition, **Volume 3,** Ch. 27**,** pages **294-299,314-335, 328, 335**

- Discuss the following details of the heart circulation and anatomy:
  - Size and position of the heart
  - Coverings of the heart
  - Chambers of the heart
  - Vessels associated with the heart
  - Walls of the heart
  - Valves of the heart
  - Conduction system
- List and identify arteries that flow to the brain
- List and identify major abdominal arteries
- List and identify lower extremity arteries
- List and identify upper extremity arteries
- Describe the difference between arteries and veins
- Discuss the difference between deep veins, superficial veins and venous sinuses
- List and identify veins of the neck and head
- List and identify veins in the upper limbs
- List and identify veins of the thorax
- List and identify veins of the abdomen and pelvis
- Describe and identify the hepatic portal system
- List and identify veins of the lower limbs
- Define the purpose of the lymphatic system
- Describe details of all the following lymphatic anatomy:
  - Vessels
  - Nodes
  - Thoracic duct
  - Cisterna chyle
  - Right lymphatic duct

Additionally, students will be required to do the following:

1. Complete workbook 14th edition pages 577-586, 15th edition pages 575- 584.

Course Requirements:

Exams. **As this is an online class students are required to take tests by designated due dates.**

Attendance. **Class is online and attendance does not apply.**

Student Responsibilities. If the student is having difficulty in the course, it is the student's responsibility to make arrangements to talk with the instructor. Students are expected to be self-directed and motivated in identifying their learning needs associated with the course content. It is highly recommended that the student review the "navigating the course" link under the "start here" tab.

Assignments. All due dates can be found in the modules link, the assignment link and the calendar (there is an agenda link on the calendar page that will give you an overview of due dates). Look at that often to keep up.

Incomplete
Students must complete all requirements and maintain a C grade to remain in the program.

Class Procedure or Format:
This is an online asynchronous course. Student can work at their own pace but must complete assignment by the due dates on the schedule.

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".

Course Evaluation:

Directed Readings:	
Mobile Radiography	27 points
Traumatic Injuries to the C-spine	29 points
Image critique:	10 points
Discussions:	
Mobile	10 points
Trauma	10 points
Surgical	20 points
Advanced procedures internet video	10 points
Breast cancers risk factors	10 points
Tests:	
Mobile Test	31 points
Trauma Test	35 points
Surgical Test	30 points
Advanced Procedures Test	29 points

Circulatory Test	60 points
Total:	311 points

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**
78-79	**C+**		

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.

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.

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

The Disability Resource Center
SLCC values inclusive learning environments and strives to make all aspects of the College accessible to our students. If you have a disability and believe you need accommodations to improve access to learning materials or the learning environment, please contact the Disability Resource Center:

Although pregnancy is not a disability, our DRC advisors are trained to assist with pregnancy related accommodations in addition to disability related accommodations. We strongly recommend any student who is pregnant or becomes pregnant while in the program notify the DRC. This will allow preventative measures to be taken, safety process in place to protect the student and the unborn child and allow for accommodations.

Due to risk of fetal exposure to radiation and chemicals while in the program it is strongly recommended that all pregnant students work closely with the DRC.

Watch the following video to learn more about the DRC: DRC Accessibility