

Course Syllabus

COURSE: RADR 1411.200 (4:3:4), Basic Radiographic Procedures
SEMESTER: Fall 2014
CLASS TIMES: MW 11:30 to 12:45
LAB TIMES: MTWR 13:30 to 15:30
INSTRUCTOR: Clinton Bishop
OFFICE: RC512H
OFFICE HOURS: MTWR, 8:00-11:00 & by appointment
OFFICE PHONE: (806)716-4629
E-MAIL: cbishop@southplainscollege.edu
FACEBOOK: The radiologic technology program has a Facebook page at www.facebook.com/spradiologicstechnologyprogram. In addition to the South Plains college websites, this Facebook page will be used to keep students up-to-date on program activities, weather delays, South Plains college announcements and will help with program recruitment. "Liking" the radiologic technology program's Facebook page is not mandatory, nor are personal Facebook accounts in order to access this page.
BlackBoard: Blackboard is an e-education platform designed to enable educational innovations everywhere by connecting people and technology. This education tool will be used in this course throughout the semester.

"South Plains College improves each student's life."

GENERAL COURSE INFORMATION

COURSE DESCRIPTION

This course includes an introduction to radiographic positioning terminology, the proper manipulation of equipment, basic radiation protection, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of basic anatomy and related pathology.

STUDENT LEARNING OUTCOMES

The student will:

1. Acquire the necessary skills to complete basic radiographic procedures of the vertebral column, chest, bony thorax, upper extremities/shoulder girdle, lower extremities/pelvic girdle and abdomen.
2. Evaluate radiographic images for diagnostic quality.
3. Identify radiographic image errors and determine the corrective action necessary to produce a diagnostic image.
4. Resolve radiographic positioning problems by recognizing alternate methods of patient and radiographic positioning and alignment to produce a diagnostic image.
5. Identify pertinent anatomical structures located in the radiographic images.
6. Use appropriate radiation safety practices to reduce unnecessary and/or excessive radiation exposure and dose.
7. Use both conventional and digital methods of image acquisition.

COURSE OBJECTIVES

The student will:

1. Use the appropriate terminology used in diagnostic radiography. (F2,5,6)
2. Use wet processing for film images and digital processing for computed radiography images. (C15,18,19)
3. Use the appropriate methods of reducing radiation exposure to the patient, to include x-ray beam restriction, patient positioning and gonadal shielding in a simulated lab environment. (C15,18,19)
4. Position the patient and anatomical structure of radiographic interest to produce a diagnostic image using the simulated lab environment. (F13,14;C18,19,20)
5. Give pertinent instructions to the patient required by the radiographic procedure. (F6)
6. Evaluate the radiographic image for errors in identification markers, patient/anatomical structure positioning, misalignment of the patient, x-ray tube and image receptor, as well as, visibility of the anatomical structure of interest. (F9,10,12)
7. Correct any identified error to produce a diagnostic image. (C15,16,17,18,19,20)

ACADEMIC INTEGRITY

It is the aim of the faculty of South Plains College to foster a spirit of complete honesty and a high standard of integrity. The attempt of any student to present as his or her own any work which he or she has not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offender liable to serious consequences, possibly suspension.

Cheating - Dishonesty of any kind on examinations or on written assignments, illegal possession of examinations, the use of unauthorized notes during an examination, obtaining information during an examination from the textbook or from the examination paper of another student, assisting others to cheat, alteration of grade records, illegal entry or unauthorized presence in the office are examples of cheating. Complete honesty is required of the student in the presentation of any and all phases of coursework. This applies to quizzes of whatever length, as well as final examinations, to daily reports and to term papers.

Plagiarism - Offering the work of another as one's own, without proper acknowledgment, is plagiarism; therefore, any student who fails to give credit for quotations or essentially identical expression of material taken from books, encyclopedias, magazines and other reference works, or from themes, reports or other writings of a fellow student, is guilty of plagiarism.

FACEBOOK

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BLACKBOARD

Blackboard is an e-Education platform designed to enable educational innovations everywhere by connecting people and technology. This educational tool will be used in this course throughout the semester.

SCANS and FOUNDATION SKILLS

Refer also to Course Objectives. SCANS and Foundation Skills attached.

SPECIFIC COURSE INFORMATION

TEXT AND MATERIALS

Frank, Eugene., Merrill's Atlas of Radiographic Positioning and Procedures. 12th Edition, 2012. St. Louis, Missouri. The C.V. Mosby Co.

Frank, Eugene., Merrill's Pocket Guide to Radiography. 12th Edition 2011. St. Louis, Missouri. The C.V. Mosby Co.

ATTENDANCE POLICY

Class and lab attendance is mandatory. During class, the student will have the opportunity to acquire the knowledge and skills required of a staff radiographer. During lab, the student will have the opportunity to practice those skills learned in class and achieve competency in radiographic imaging. These skills are not only important to the student's success in achieving the objectives of this course, but also insuring the effectiveness of the clinical and practicum courses that will enable the student to complete the clinical competencies required for graduation and ARRT certification board exam eligibility.

It is important that students arrive for class on time. **Tardiness** disrupts the instructor and the other students. Students that chronically arrive late for class will be counseled. Blatant disregard of this policy is an indication of rude, unprofessional behavior and a lack of interest in achieving the objectives of the course. If the student continues to arrive late for class, he or she may be dropped from the class regardless of his or her grade point average.

Policies regarding absences coincide with those established for South Plains College as outlined in the SPC General Catalog.

Perfect attendance to class is awarded **2** points to **final average**.

INSTRUCTIONAL METHODS

The student will receive course information through a series of lectures, PowerPoint presentations, lab assignments and textbook assignments.

ASSIGNMENT POLICY

Reading assignments, as well as lab assignments are the responsibility of the student. Reading assignments are provided in this syllabus. **The student must bring the applicable volume of Merrill's Atlas to every class and lab.**

GRADING RUBRIC

Grades in this course will be determined using the following criteria:

Assessment Tool	Assessment Criteria	Percentage Score	Grade
MAJOR EXAMS; LAB EXAMS 50%	✓ Exceptional unit content knowledge & understanding	91 – 100	A
	✓ Good unit content knowledge & understanding	83 – 90	B
	✓ Average unit content knowledge & understanding	75 – 82	C
	✓ Unacceptable unit content knowledge & understanding	0 – 74	F

FINAL EXAM 50%	✓ Exceptional course content knowledge & understanding	91 – 100	A
	✓ Good course content knowledge & understanding	83 – 90	B
	✓ Average course content knowledge & understanding	75 – 82	C
	✓ Unacceptable unit content knowledge & understanding	0 – 74	F

Course Grade: A	91 – 100
B	83 – 90
C	75 – 82
F	0 – 74

A grade average of C (75) must be maintained in all RAD TECH classes. Failure to do so will result in the student being dropped from the Program.

STUDENT EVALUATION

DIDACTIC CLASS. Students' acquired knowledge will be evaluated by a multiple choice and matching major exam for each class unit.

LAB. Students' acquired radiographic skills will be evaluated by lab assignments, impromptu lab quizzes and simulated radiographic procedures exams using the energized x-ray equipment and the radiographic phantoms.

GRADING POLICY

The course grade for RADR 1411 will consist of:

Major Exams:	50%
Final Exam:	<u>50%</u>
	100%

The following guidelines will be followed regarding **MAJOR EXAMS**:

1. The student will complete the exam at the scheduled time.
2. The student must complete the exam within the allotted class time of **1 hour and 15 minutes**.
3. There will be **NO** make-up exams or lab quizzes. **NO EXCEPTIONS**.
4. If a test must be missed, the weight of the final exam will be increased.
5. A student arriving late for an exam will not be allowed to take the exam if **any** student has completed the exam and left the room. This will also count as a tardy.
6. No cell phones or other electronic assistance, other than calculators, are allowed during exams.
7. According to SPC policy, **student's grade will not be given over the phone or by email to avoid the risk of a breach of confidentiality.**

The following guidelines will be followed regarding **LAB EXAMS**:

1. A lab exam will be given at the conclusion of each instructional unit, coinciding with each written **MAJOR EXAM**.
2. Each student will sign-up for a time to take the lab exam.
3. The lab exam will be conducted using a radiographic phantom and energized x-ray unit.

4. The lab exam will consist of five projections: 2 assigned and 2 drawn at random.
5. The lab exam must be completed within the allotted time of 30 minutes.
6. The student is responsible for all aspects of the lab exam, including setting the given exposure factors.
7. The student will NOT be allowed to use any form of assistance, including, but not limited to, notes and/or textbook.
8. Each radiographic image must be deemed diagnostic by the instructor for grading. **ANY RADIOGRAPHIC IMAGE THAT WOULD REQUIRE REPEATING FOR DIAGNOSTIC PURPOSES WILL BE GIVEN A ZERO (0).**
9. Each lab exam grade will be entered as a major exam grade.
10. According to SPC policy, **the student's grade will not be given over the phone or by email to avoid the risk of a breach of confidentiality.**

The following guidelines will be followed regarding the **FINAL EXAM**:

1. The final exam will be comprehensive.
2. The final exam must be completed within the allotted time.
3. A student arriving late for an exam will not be allowed to take the final exam if any student has completed the exam and left the room.
4. No cell phones or other electronic assistance, other than calculators, are allowed during exams.
5. The final exam will not be corrected for additional points. If a student is unable to take the final exam at the assigned time for any reason, the student may be given an incomplete for the course. After consulting the instructor, the student may be assigned a time to take the final exam and remove the incomplete. The final exam and course must be completed before the start of the spring semester.
6. According to SPC policy, **the student's grade will not be given over the phone or by email to avoid the risk of a breach of confidentiality.**

LAB COMPETENCIES

The student will demonstrate radiographic competence through simulated procedures in the following areas:

- ✓ Abdomen
- ✓ Bony thorax
- ✓ Chest
- ✓ Lower extremities and pelvic girdle
- ✓ Upper extremities and shoulder girdle
- ✓ Vertebral column

Lab competencies are a requirement to progress in the Radiologic Technology Program and enter the clinical/practicum portion of the Program.

RADR 1411 LAB PARTICIPATION & SAFETY

The radiographic lab is used as part of RADR 1411 to allow the student the opportunity to acquire basic radiographic skills prior to beginning the clinical/practicum aspect of the Program. The student is expected to use the full lab time to practice those radiographic skills under simulated conditions using radiographic phantoms and energized x-ray equipment. The student will also be required to practice the same skills using a classmate, without actual radiation exposures being made. It is a violation of state law to expose a living subject in the radiographic lab of SPC.

Basic radiographic procedure assignments will be distributed at the beginning of the student's assigned lab time. All lab assignments should be completed by the conclusion of the lab time.

**For radiation safety reasons, NO HUMANS WILL BE IRRADIATED IN THE LAB SETTING.
NO EXCEPTIONS.**

Students will be working with ionizing radiation emitting equipment. Therefore, students must refrain from mind altering substances, including alcohol and prescribed drugs, prior to lab time for the radiation safety of all concerned. If a student presents with any indication of being impaired, the student will not be allowed to participate in lab and sent home. A second offense may result in disciplinary withdrawal from the course and dismissal from the Program.

If the student is taking prescription drugs, he or she must inform the faculty and schedule a make-up lab session to complete the lab assignments.

Radiographic Lab Attire. Students are required to participate in simulated radiographic procedures regardless of their attire. Students should wear clothing that does not restrict movement, yet is appropriate for the classroom and lab. Students will be involved in lifting and moving phantoms, patients and equipment, therefore, the student should avoid wearing clothing that he or she does not want to be damaged. For safety reasons closed toe shoes are required for lab also. Dosimeter badges are required at all times the student is located in the lab/classroom when the x-ray equipment is energized x-ray lab.

The student is responsible for the appropriate use and storage of the radiation dosimeter. The student is required to wear the radiation dosimeter **at the collar level**. At the end of lab, the student is required to **store the dosimeter in the designated location**. If the student accidentally wears the dosimeter home or work, the student is responsible for the safe storage of the dosimeter.

Do not leave the dosimeter in any location of intense heat or light (i.e. your vehicle). Do not wash the badge with your clothing. If the dosimeter is lost, the student may not be allowed to participate in lab, until the dosimeter is found or replaced. This may impact the student's ability to complete the course objectives, resulting in academic dismissal from the Program. If the student fails to return the dosimeter at the next scheduled lab, the student will be dismissed and sent home.

COMMUNICATION POLICY

Electronic communication between instructor and students in this course will utilize the South Plains College "My SPC" and email systems. Instructor will not initiate communication using private email accounts. Students are encouraged to check SPC email on a regular basis.

STUDENT CONDUCT

Students in this class are expected to abide by the standards of student conduct as defined in the SPC Student Guide and Radiologic Technology Program Student Handbook.

CELL PHONES

Cell phones are to be turned OFF during scheduled class/lab periods, unless prior approval has been given from the instructor. **THIS INCLUDES TEXT MESSAGING.** Cell phones are to be used outside the classroom only.

Students will be dismissed from class/lab and sent home if a phone rings/vibrates or if the student is discovered texting. The student will receive an absence for the class. The phone number to the front desk is (806)716-4622 for emergencies. In the event a student misses class or lab for violation of this Program policy may jeopardize the student's ability to meet the required objectives of the course.

ACCOMMODATIONS

DIVERSITY STATEMENT

In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

DISABILITIES STATEMENT

Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Special Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Coordinator of Special Services. For more information, call or visit the Special Services Office in rooms 809 and 811, Reese Center Building 8, (806) 885-3048 ext. 4654.

COURSE OUTLINE

INSTRUCTIONAL UNIT: **GENERAL ANATOMY AND RADIOGRAPHIC POSITIONING TERMINOLOGY**

The student will:

1. Identify the planes of the human body.
2. Identify the cavities of the human body and their contents.
3. Identify the divisions of the human abdomen: quadrants, regions.
4. Identify the surface landmarks significant to radiographic positioning.
5. Identify the bones of the human axial skeleton and appendicular skeleton.
6. Identify and describe the classifications of bones.
7. Identify and describe examples of the structural classifications of skeletal joints.
8. Identify and describe bone markings and features.
9. Identify and describe anatomical relationship terms.
10. Identify and describe terms used in radiographic positioning and procedures
11. Identify and define terms related to body movement.

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas, Vol. I**, Chapter 3, p. 65

INSTRUCTIONAL UNIT: **RADIOGRAPHIC PROCEDURES OF THE THORAX VISCERA (CHEST)**

The student will:

1. Review and identify the anatomy of the thorax viscera, including the: respiratory system and mediastinum.
2. Identify the variations of thorax viscera due to the differences in body habitus.
3. Identify and describe the procedure for each radiographic projection of the thorax viscera covered in class, including patient position, anatomical structure position, and alignment of the central ray, image receptor and anatomical structure.
4. Identify and describe the structures demonstrated best in each thorax viscera projection covered in class including the use of illustrations and radiographic images.
5. Identify and describe the evaluation criteria for each thorax viscera projection covered in class.
6. Define pathologies and abnormalities affecting the thorax viscera.

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas, Vol. I**, Chapter 10, p. 485

INSTRUCTIONAL UNIT: **RADIOGRAPHIC PROCEDURES OF THE UPPER EXTREMITIES**

The student will:

1. Review and identify the anatomy of the upper extremity including the: hand, forearm, arm and articulations.
2. Identify and describe the appearance of the three fat pads associated with the elbow.
3. Identify and describe the procedure for each radiographic projection of the upper extremity covered in class, including patient position, anatomical structure position, and alignment of the central ray, image receptor and anatomical structure.
4. Identify and describe the structures demonstrated best in each upper extremity projection covered in class including the use of illustrations and radiographic images.
5. Identify and describe the evaluation criteria for each upper extremity projection covered in class.
6. Define pathologies and abnormalities affecting the upper extremities.

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas, Vol. I**, Chapter 4, p. 99

INSTRUCTIONAL UNIT: **RADIOGRAPHIC PROCEDURES OF THE SHOULDER GIRDLE**

The student will:

1. Review and identify the anatomy of the shoulder girdle, including the articulations.
2. Identify and describe the procedure for each radiographic projection of the shoulder girdle covered in class, including patient position, anatomical structure position, and alignment of the central ray, image receptor and anatomical structure.
3. Identify and describe the structures demonstrated best in each shoulder girdle projection covered in class including the use of illustrations and radiographic images.
4. Identify and describe the evaluation criteria for each shoulder girdle projection covered in class.
5. Define pathologies and abnormalities affecting the shoulder girdle.

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas, Vol. I**, Chapter 5, p. 173

INSTRUCTIONAL UNIT: **RADIOGRAPHIC PROCEDURES OF THE LOWER EXTREMITIES**

The student will:

1. Review and identify the anatomy of the lower extremity, including the: foot, leg, femur, patella, knee and articulations.
2. Identify and describe the procedure for each radiographic projection of the lower extremity covered in class, including patient position, anatomical structure position, and alignment of the central ray, image receptor and anatomical structure.
3. Identify and describe the structures demonstrated best in each lower extremity projection covered in class including the use of illustrations and radiographic images.
4. Identify and describe the evaluation criteria for each lower extremity projection covered in class.
5. Define pathologies and abnormalities affecting the lower extremities.

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas, Vol. I**, Chapter 6, p. 225

INSTRUCTIONAL UNIT: **RADIOGRAPHIC PROCEDURES OF THE PELVIC GIRDLE & HIP**

The student will:

1. Review and identify the anatomy of the pelvic girdle and upper femora, including the: hip bone, proximal femur and articulations.

2. Identify and describe the procedure for each radiographic projection of the pelvic girdle and hip covered in class, including patient position, anatomical structure position, and alignment of the central ray, image receptor and anatomical structure.
3. Identify and describe the structures demonstrated best in each pelvic and hip projection covered in class including the use of illustrations and radiographic images.
4. Identify and describe the evaluation criteria for each pelvic and hip projection covered in class.
5. Define pathologies and abnormalities affecting the pelvic girdle and hip.

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas, Vol. I**, Chapter 7, p. 325

INSTRUCTIONAL UNIT: RADIOGRAPHIC PROCEDURES OF THE VERTEBRAL COLUMN

The student will:

1. Review and identify the anatomy of the vertebral column, including the: cervical spine, thoracic spine, lumbar spine, sacrum/coccyx and articulations.
2. Identify and describe the procedure for each radiographic projection of the vertebral column covered in class, including patient position, anatomical structure position, and alignment of the central ray, image receptor and anatomical structure.
3. Identify and describe the structures demonstrated best in each vertebral column projection covered in class including the use of illustrations and radiographic images.
4. Identify and describe the evaluation criteria for each vertebral column projection covered in class.
5. Define pathologies and abnormalities affecting the vertebral column.

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas, Vol. I**, Chapter 8, p. 363

INSTRUCTIONAL UNIT: RADIOGRAPHIC PROCEDURES OF THE BONY THORAX

The student will:

1. Review and identify the anatomy of the bony thorax, including the: sternum, ribs and articulations.
2. Identify and describe the procedure for each radiographic projection of the bony thorax covered in class, including patient position, anatomical structure position, and alignment of the central ray, image receptor and anatomical structure.
3. Identify and describe the structures demonstrated best in each bony thorax projection covered in class including the use of illustrations and radiographic images.
4. Identify and describe the evaluation criteria for each bony thorax projection covered in class.
5. Define pathologies and abnormalities affecting the bony thorax.

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas, Vol. I**, Chapter 9, p. 444

FOUNDATION SKILLS

BASIC SKILLS—Reads, Writes, Performs Arithmetic and Mathematical Operations, Listens and Speaks

F-1 Reading—locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules.

F-2 Writing—communicates thoughts, ideas, information and messages in writing and creates documents such as letters, directions, manuals, reports, graphs, and flow charts.

F-3 Arithmetic—performs basic computations; uses basic numerical concepts such as whole numbers, etc.

F-4 Mathematics—approaches practical problems by choosing appropriately from a variety of mathematical techniques.

F-5 Listening—receives, attends to, interprets, and responds to verbal messages and other cues.

F-6 Speaking—organizes ideas and communicates orally.

THINKING SKILLS—Thinks Creatively, Makes Decisions, Solves Problems, Visualizes and Knows How to Learn and Reason

F-7 Creative Thinking—generates new ideas.

F-8 Decision-Making—specifies goals and constraints, generates alternatives, considers risks, evaluates and chooses best alternative.

F-9 Problem Solving—recognizes problems, devises and implements plan of action.

F-10 Seeing Things in the Mind’s Eye—organizes and processes symbols, pictures, graphs, objects, and other information.

F-11 Knowing How to Learn—uses efficient learning techniques to acquire and apply new knowledge and skills.

F-12 Reasoning—discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem.

PERSONAL QUALITIES—Displays Responsibility, Self-Esteem, Sociability, Self-Management, Integrity and Honesty

F-13 Responsibility—exerts a high level of effort and perseveres towards goal attainment.

F-14 Self-Esteem—believes in own self-worth and maintains a positive view of self.

F-15 Sociability—demonstrates understanding, friendliness, adaptability, empathy and politeness in group settings.

F-16 Self-Management—assesses self accurately, sets personal goals, monitors progress and exhibits self-control.

F-17 Integrity/Honesty—chooses ethical courses of action.

SCANS COMPETENCIES

C-1 **TIME** - Selects goal - relevant activities, ranks them, allocates time, prepares and follows schedules.

C-2 **MONEY** - Uses or prepares budgets, makes forecasts, keeps records and makes adjustments to meet objectives.

C-3 **MATERIALS AND FACILITIES** - Acquires, stores, allocates, and uses materials or space efficiently.

C-4 **HUMAN RESOURCES** - Assesses skills and distributes work accordingly, evaluates performances and provides feedback.

INFORMATION - Acquires and Uses Information

C-5 Acquires and evaluates information.

C-6 Organizes and maintains information.

C-7 Interprets and communicates information.

C-8 Uses computers to process information.

INTERPERSONAL—Works with Others

C-9 Participates as a member of a team and contributes to group effort.

C-10 Teaches others new skills.

C-11 Serves Clients/Customers—works to satisfy customer’s expectations.

C-12 Exercises Leadership—communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies.

C-13 Negotiates—works toward agreements involving exchanges of resources; resolves divergent interests.

C-14 Works With Diversity—works well with men and women from diverse backgrounds.

SYSTEMS—Understands Complex Interrelationships

C-15 Understands Systems—knows how social, organizational, and technological systems work and operates effectively with them.

C-16 Monitors and Corrects Performance—distinguishes trends, predicts impacts on system operations, diagnoses systems performance and corrects malfunctions.

C-17 Improves or Designs Systems—suggests modifications to existing systems and develops new or alternative systems to improve performance.

TECHNOLOGY—Works with a Variety of Technologies

C-18 Selects Technology—chooses procedures, tools, or equipment, including computers and related technologies.

C-19 Applies Technology to Task—understands overall intent and proper procedures for setup and operation of equipment.

C-20 Maintains and Troubleshoots Equipment—prevents, identifies, or solves problems with equipment, including computers and other technologies.

January 2010



I _____ have received a copy of the South Plains College Student Guide. I understand that I must comply with all areas of the Student Guide as a student in the Radiology Program and South Plains College.

Signature

Date