

South Plains College-Reese Campus  
Course Syllabus

COURSE: **RADR 2301.200 (3:2:2), Intermediate Radiographic Procedures**  
SEMESTER: **Spring 2016**  
CLASS TIMES: **MW 11:00 to 12:15**  
LAB TIMES: **M or W 1:30 to 2:30**  
INSTRUCTOR: **Erica Castillo**  
OFFICE: **RC 512H**  
OFFICE HOURS: **MTWR 8:00-11:00; by appointment**  
OFFICE PHONE: **(806)716-4628**  
E-MAIL: [ecastillo@southplainscollege.edu](mailto:ecastillo@southplainscollege.edu)  
FACEBOOK: The radiologic technology program has a Facebook page at [www.facebook.com/spradiologictechnologyprogram](http://www.facebook.com/spradiologictechnologyprogram). 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."*

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**GENERAL COURSE INFORMATION**

**COURSE DESCRIPTION**

This course is a continuation of the study of the proper manipulation of radiographic equipment, positioning and alignment of the anatomical structure and equipment and the evaluation of images for proper demonstration of the anatomy.

**COURSE OBJECTIVE**

The student will participate in the skull, mobile, surgical, trauma, anterior neck, abdomen, digestive system (alimentary canal) and urinary system radiographic procedures of a medical imaging facility. (F2, 5, 6; C15, 16, 17, 18, 19, 20)

**STUDENT LEARNING OUTCOMES**

The student will:

1. Acquire the necessary skills to complete radiographic procedures of the anterior neck, abdomen, digestive system (alimentary canal) and urinary system.
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. Identify the categories and properties of drugs and contrast agents used in radiographic procedures.
7. Identify the radiographer responsibilities and emergency measures in cases of contrast media reactions.
8. Use appropriate radiation safety practices to reduce unnecessary and/or excessive radiation exposure and dose.
9. Identify safe and accurate methods of administering medications in the radiography department.
10. Identify the role of the radiographer in IV therapy related to radiographic imaging procedures.

## **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**

The Radiologic Technology Program Facebook page is <http://www.facebook.com/spradiologictechnologyprogram>. 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, and South Plains College announcements and will help with program recruitment. "Liking" the Radiologic Technology Program Facebook page is not mandatory, nor are personal Facebook accounts in order to access this page.

## **BLACKBOARD**

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## **SCANS and FOUNDATION SKILLS**

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

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## **SPECIFIC COURSE INFORMATION**

### **TEXT AND MATERIALS**

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

## ATTENDANCE POLICY

**SPC** - Students are expected to attend all classes in order to be successful in a course. The student may be administratively withdrawn from the course when absences become excessive as defined in the course syllabus.

When an unavoidable reason for class absence arises, such as illness, an official trip authorized by the college or an official activity, the instructor may permit the student to make up work missed. It is the student's responsibility to complete work missed within a reasonable period of time as determined by the instructor. Students are officially enrolled in all courses for which they pay tuition and fees at the time of registration. Should a student, for any reason, delay in reporting to a class after official enrollment, absences will be attributed to the student from the first class meeting.

Students who enroll in a course but have "Never Attended" by the official census date, as reported by the faculty member, will be administratively dropped by the Office of Admissions and Records. A student who does not meet the attendance requirements of a class as stated in the course syllabus and does not officially withdraw from that course by the official census date of the semester, may be administratively withdrawn from that course and receive a grade of "X" or "F" as determined by the instructor. Instructors are responsible for clearly stating their administrative drop policy in the course syllabus, and it is the student's responsibility to be aware of that policy.

It is the student's responsibility to verify administrative drops for excessive absences through MySPC using his or her student online account. If it is determined that a student is awarded financial aid for a class or classes in which the student never attended or participated, the financial aid award will be adjusted in accordance with the classes in which the student did attend/participate and the student will owe any balance resulting from the adjustment.

**SPC Radiologic Technology** - 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
<b>PATHOLOGY PROJECT</b> 25%	✓ 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
<b>MAJOR EXAMS</b> 30%	✓ 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
<b>FINAL EXAM</b> 45%	✓ 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

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

## GRADING POLICY

The course grade for RADR 2301 will consist of:

Pathology Project	25%
Major Exams:	30%
Final Exam:	<u>45%</u>
	100%

## PATHOLOGY PROJECT

1. Each student will prepare a pathology project that will be presented orally by power point to the class.
2. Examples of the pathology project can be found on Blackboard.
3. Each student will construct a presentation on power point to be given involving the pathology they have chosen. Due dates are posted on the schedule found in Blackboard.

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. Tests will be returned to the student for future studies.
8. 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 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. 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.**

## 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 Catalog 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

### 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 Disability 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 Disability Services Office. For more information, call or visit the Disability Services Office at Levelland Student Health & Wellness Center 806-716-2577, Reese Center (also covers ATC) Building 8: 806-716-4675, Plainview Center Main Office: 806-716-4302 or 806-296-9611, or the Health and Wellness main number at 806-716-2529.

### 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.

## COURSE OUTLINE

### SKULL, FACIAL BONES & SINUSES

The student will:

1. Review and identify the anatomy of the skull, facial bones and sinuses.
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 skull, facial bones and sinuses 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 projection covered in class including the use of illustrations and radiographic images.
5. Identify and describe the evaluation criteria for each projection covered in class.
6. Define pathologies and abnormalities affecting the skull, facial bones and sinuses.

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas, Vol. II**, Chapter 20, 21 & 22

### MOBILE, TRAUMA & SURGICAL RADIOGRAPHY

The student will:

1. Identify and differentiate between the battery-operated mobile x-ray unit and the capacitor-discharge mobile x-ray unit.
2. Identify and explain the technical considerations pertinent to mobile and trauma radiography.
3. Identify and explain factors relative to effective radiation protection in mobile and trauma radiography. (F8,9;C3,15,18,19,20)
4. Identify and explain isolation considerations in mobile and trauma radiography. (F8,9;C3,15,18,19,20)
5. Identify and explain the steps in performing mobile and trauma radiography.
6. Identify and explain the adapted procedures common to mobile and trauma radiography for the following:
  - Spine
  - Chest

- Abdomen
  - Cranium
  - Facial bones
  - Upper and lower extremities
7. Identify the members of the surgical team. (C9)
  8. Identify and explain the function of the members of the sterile team. (C9)
  9. Identify and explain the function of the members of the non-sterile team. (C9)
  10. Identify the components of proper operating room attire and explain their function. (C15,18,19)
  11. Identify the proper procedures for maintaining a sterile field in the operating suite. (C15,18,19)
  12. Identify the proper handling of the image receptor in the sterile field. (C15,18,19)
  13. Identify the principles of aseptic technique in the operating suite. (C15,18,19)
  14. Identify the radiographic equipment utilized in the operating suite and the proper care and cleaning of the equipment. (C15,18,19)

Text Assignment: **Merrill's Atlas**, Vol. II, Ch. 13; Vol. III, Ch. 29 & 30

## G I ANATOMY

The student will:

7. Identify the anatomy of the
  - a. Neck. (F1)
  - b. Thyroid gland. (F1)
  - c. Parathyroid glands. (F1)
  - d. Pharynx. (F1)
  - e. Larynx. (F1)
8. Differentiate between the methods of radiographic examination of the throat structures. (C5,15,18)
9. Identify and describe the procedure for each radiographic projection, to include patient position, anatomical structure position, and alignment of the central ray, image receptor and anatomical structure of the
  - a. Pharynx and larynx. (C5,15,18)
  - b. Soft palate, pharynx and larynx. (C5,15,18)
10. Identify and describe the evaluation criteria for each projection of the
  - a. Pharynx and larynx. (F9,10;C16)
  - b. Soft palate, pharynx and larynx. (F9,10;C16)

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas**, Vol. II, Chapter 15

## ABDOMEN

The student will:

1. Identify the anatomy of the abdominopelvic cavity. (F1)
2. Identify the exposure requirements of abdominal radiographic procedures. (C18)
3. Identify the immobilization requirements of abdominal radiographic procedures. (C18)
4. Identify the projections and positioning protocols for abdominal radiographic procedures. (C18)
5. Explain the importance of correct sequencing of abdominal projections. (C15)
6. Identify the correct sequence of abdominal projections. (C15)
7. Identify and describe the procedure for each radiographic projection of the abdomen covered in class, including patient position, anatomical structure position, and alignment of the central ray, image receptor and anatomical structure. (C5,15,18)

8. Identify and describe the structures demonstrated best in each abdomen projection covered in class including the use of illustrations and radiographic images.
9. Identify and describe the evaluation criteria for each abdomen projection covered in class. (F9,10;C16)

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas, Vol. II**, Chapter 16

## **DIGESTIVE SYSTEMS**

The student will:

1. Review and identify the anatomy of the
  - a. Digestive system. (F1)
  - b. Esophagus. (F1)
  - c. Stomach. (F1)
  - d. Small intestine. (F1)
  - e. Large intestine. (F1)
  - f. Liver and biliary system. (F1)
  - g. Pancreas and spleen. (F1)
2. Identify the exposure considerations for alimentary canal radiography. (C18)
3. Explain the importance of radiation protection in radiography of the alimentary canal. (C15)
4. Identify ways to reduce excessive radiation exposure during alimentary canal radiography. (C15)
5. Identify the purpose of contrast media radiographic procedures of the esophagus. (C15)
6. Describe the barium sulfate mixture for a full-column, single contrast technique used in esophageal radiography.
7. Identify the steps for a full-column, single contrast technique used in esophageal radiography. (C15,18)
8. Identify the procedure for radiographic demonstration of opaque foreign bodies in the pharynx or upper part of the esophagus. (C15,18)
9. Identify and describe the procedure, including patient position, anatomical structure position, and alignment of the central ray, image receptor and anatomical structure, for each radiographic projection of the
  - a. Esophagus. (C15,18)
  - b. Stomach and duodenum. (C15,18)
  - c. Superior stomach and distal esophagus. (C15,18)
  - d. Small intestines. (C15,18)
  - e. Large intestines. (C15,18)
10. Differentiate between single-contrast barium enemas and double-contrast barium enemas used in radiography of the large intestines. (C15,18)
11. Describe the preparation of barium sulfate suspensions for radiographic procedures of the large intestines. (C15,18)
12. Describe the patient preparation for radiographic procedures of the large intestines. (C15,18)
13. Identify the standard barium enema apparatus for large intestine radiography.
14. Describe the process of enema tip insertion for large intestine radiography. (C15,18)
15. Describe percutaneous transhepatic cholangiography. (C15,18)
16. Describe postoperative (T-tube) cholangiography. (C15,18)
17. Describe endoscopic retrograde cholangiopancreatography. (C15,18)
18. Describe the process of radiographically demonstrating an abdominal fistulae or sinus. (C15,18)

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas, Vol. II**, Chapter 17

## **VENIPUNCTURE**

## URINARY SYSTEMS

The student will:

1. Review and identify the anatomy of the
  - a. Urinary system. (F1)
  - b. Suprarenal glands. (F1)
  - c. Kidneys. (F1)
  - d. Ureters. (F1)
  - e. Urinary bladder. (F1)
  - f. Urethra. (F1)
  - g. Prostate. (F1)
2. Explain the importance of radiation protection in radiography of the urinary system. (C15)
3. Identify the purpose of contrast media radiographic procedures of the urinary system. (C15)
4. Differentiate between antegrade filling and retrograde filling when introducing contrast material into the urinary system. (C15)
5. Describe the contrast material used in radiography of the urinary system. (C15)
6. Describe the preparation of the intestinal tract for urinary system radiography. (C15)
7. Describe the preparation of the patient for urinary system radiography. (C15)
8. Identify the equipment requirements for urinary system radiography. (C15)
9. Identify the indications for intravenous urography (IVU). (C5,15)
10. Describe the radiographic procedure for intravenous urography. (C15)
11. Identify and describe the procedure, including patient position, anatomical structure position, and alignment of the central ray, image receptor and anatomical structure, for each radiographic projection of the
  - a. Urinary system. (C15,18)
  - b. Renal parenchyma. (C15,18)
  - c. Pelviciceal system and ureters. (C15,18)
  - d. Urinary bladder. (C15,18)
  - e. Male cystourethrography. (C15,18)
  - f. Female cystourethrography. (C15,18)
12. Identify and describe the structures demonstrated best in each lower extremity projection covered in class including the use of illustrations and radiographic images.
13. Identify and describe the evaluation criteria for each lower extremity projection covered in class. (F9,10;C16)

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

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### 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.

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**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.