

## Course Syllabus

COURSE:	<b>RADR 2301.200 (3:2:2), Intermediate Radiographic Procedures</b>
SEMESTER:	Spring 2014
CLASS TIMES:	MW 11:00 to 12:15
LAB TIMES:	W 1:00 – 4:00
INSTRUCTOR:	Denny Barnes
OFFICE:	RC 512H
OFFICE HOURS:	MTWR 1 - 3; By appointment
OFFICE PHONE:	(806)716-4629
E-MAIL:	<a href="mailto:dbarnes@southplainscollege.edu">dbarnes@southplainscollege.edu</a>
FACEBOOK:	<a href="http://www.facebook.com/spradiologicstechnologyprogram">http://www.facebook.com/spradiologicstechnologyprogram</a>

*"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 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 <insert program name here Radiologic Technology Program 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 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.

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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

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.

### INSTRUCTIONAL METHODS

The student will receive course information through a series of lectures, PowerPoint presentations 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>MAJOR EXAMS 50%</b>	✓ 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>FINAL EXAM 50%</b>	✓ 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:

Major Exams: 50%  
Final Exam: 50%  
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. Tests will be returned to the student for remediation. The student will use their textbook and lecture notes to correct missed questions. If the remediation response is correct, the student will receive one-fourth credit of the question's value (i.e. 0.25 for a question with an original value of 1) added to their test score. The student cannot consult with another student for corrections.
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. 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.**

## 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.

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## 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.

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## COURSE OUTLINE

### INSTRUCTIONAL UNIT: **BASIC RADIOGRAPHY REVIEW**

The student will review skills and requirements of selected projections of the (F1,10,11;C5,6,7,8,15,18):

1. Chest.
2. Upper extremity and shoulder girdle.
3. Lower extremity and pelvic girdle.
4. Vertebral column.
5. Bony thorax.

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas, Vol. I**

**INSTRUCTIONAL UNIT: PHARMACOLOGY AND CONTRAST MEDIA**

The student will:

1. Identify the patient history factors that are pertinent to administration of a drug and/or contrast media for a radiographic procedure. (F1,5,8,9,12;C5,7,11)
2. Identify the complications and/or reactions associated with drugs and contrast media used for radiographic procedures. (F9;C5,7)
3. Differentiate between the various types of contrast media used in radiographic procedures and identify their properties. (C5,7)
4. Identify the pertinent instructions given when informing the patient of the necessary administration of a drug and/or contrast material for a radiographic procedure. (F6,C7,11,14,15)
5. Identify the various routes available for administering a drug and/or contrast material for a radiographic procedure. (C15,18,19)
6. Identify and describe the procedural technique of venipuncture. (C15,18,19)

TEXTBOOK READING ASSIGNMENT: **Merrill's Atlas, Vol. II, Ch. 18, pp. 227 - 237**

**INSTRUCTIONAL UNIT: RADIOGRAPHIC PROCEDURES OF THE ANTERIOR PART OF NECK**

The student will:

1. Identify the anatomy of the
  - a. Neck. (F1)
  - b. Thyroid gland. (F1)
  - c. Parathyroid glands. (F1)
  - d. Pharynx. (F1)
  - e. Larynx. (F1)
2. Differentiate between the methods of radiographic examination of the throat structures. (C5,15,18)
3. 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)
4. 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**

**INSTRUCTIONAL UNIT: RADIOGRAPHIC PROCEDURES OF THE 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

**INSTRUCTIONAL UNIT: RADIOGRAPHIC PROCEDURES OF THE DIGESTIVE SYSTEM: ALIMENTARY CANAL**

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

**INSTRUCTIONAL UNIT: RADIOGRAPHIC PROCEDURES OF THE URINARY SYSTEM AND VENIPUNCTURE**

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. Pelvicaliceal 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.

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