

IDAHO STATE UNIVERSITY
Department of Radiographic Science
R.S. 3340 Laboratory Practicum I
Course Syllabus

Instructor: Trevor Ward, MSRS, RT (R)(CT)(MR)
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Phone: 282-4112 or 282-4042
Course Credit: 1 Credit
When/Where/Times: Wednesday or Friday, Beckley Nursing Rm. 120

Wednesday 11:30 a.m. – 1:20 p.m. (Section 1)
Wednesday 1:30 p.m. – 3:20 p.m. (Section 2)
Friday 8:00 a.m. – 9:50 a.m. (Section 3)
Friday 10:00 a.m. – 11:50 a.m. (Section 4)

Required Text:

Bontrager, Kenneth L. & Lampignano, John P. (2014) Textbook of Radiographic Positioning and Related Anatomy (8th ed.) ISBN 978-0-323-08388-1

Recommended Text:

Bontrager, Kenneth L. & Lampignano, John P. (2014) Handbook of Radiographic Positioning and Related Anatomy (8th ed.) ISBN 978-0-323-08389-8

Course Description:

This course is structured to provide you with the practical application of theory and principles covered in R.S. 3310. Students will learn hands on skills of how to practice as a Radiologic Technologist. Students will simulate real world scenarios performing x-ray exams on phantoms. Students will be able to define radiographic positioning terms, manipulate equipment properly, position and align anatomical structure and equipment, and evaluate images for proper demonstration of anatomy and pathology.

Course Learning Objectives/Goals: This semester students will practice routine positions utilized for the Chest, Abdomen, Upper Extremities, Humerus, and Shoulder Girdle. In lecture at the beginning of each week, you will be introduced to pertinent anatomy and the radiographic positions to be covered that week in lab. Students will be given the opportunity during laboratory time to position fellow students, but there will be no radiation exposure to each other. Image critique and laboratory participation will be passed off by the instructor prior to the end of each lab. Upon completion of the course the student will be ready to perform the exams in a clinical setting.

Course Schedule:

Lab content each class period will reflect lecture content given that week.

The **Secretary's Commission on Achieving Necessary Skills (SCANS)**: This commission was appointed by the Secretary of Labor to determine the skills people need to succeed in the work place. The Commission's fundamental purpose is to encourage a high-performance economy characterized by high-skill, high-wage employment. The Commission's research found that effective job performance is what business calls *workplace know-how*. This know-how has two

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elements: competencies and a foundation. The SCANS report identifies five competencies and a three-part foundation of skills and personal qualities that lie at the heart of job performance. While the Commission's work ended with the report, its recommendations must be implemented; as the report stated, "...defining competencies and a foundation is not enough. Schools must teach them. Students must learn them."

<http://www.academicinnovations.com/report.html>

Description of SCANS competencies are as follows:

A Three Part Foundation	
1. Basic Skills	reads, writes, performs arithmetic and mathematical operations, listens and speaks
2. Thinking Skills	thinks creatively, makes decisions, solves problems, visualizes, knows how to learn, and reasons
3. Personal Qualities	displays responsibility, self-esteem, sociability, self-management, and integrity and honesty
The Five Competencies	
4. Resources	identifies, organizes, plans and allocates resources
5. Interpersonal	works with others
6. Information	acquires and uses information
7. Systems	understands complex interrelationships
8. Technology	works with a variety of technologies

Each of these foundations and competencies are listed after the objective that meet the competency or skill set described above.

Course Learning Outcomes:

Chapter 1 General Anatomy, Terminology, and Positioning Principles

Upon completion of this chapter the student will be able to:	SCANS
Show the course instructor the proper warm up procedures for radiographic rooms 1 and 2 in the lab.	1,2,4,5,6,7,8
Demonstrate the ability to use the darkroom properly, which includes turning the processor on and off, safelight operation, film bin usage, and developing an exposed film.	1,2,4,6,7,8
Memorize all of the imaging receptors by size and film type/speed.	1,2
Demonstrate to the course instructor the proper procedure used to imprint patient demographic information when using "film screen" radiology.	1,2,6
Manipulate the x-ray tubes, tables, bucky devices, detents, and stretchers in both exam rooms.	1,2,4,6,7,8
Demonstrate the following positions or angles on phantoms, peers, and/or the instructor: PA, AP, AP oblique with medial rotation, PA oblique with lateral rotation, mediolateral projection of the ankle, lateromedial projection of the	1,2,3,4,5,6,7,8

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wrist, spine, prone, Trendelenburg, Fowlers, Modified Sims, erect and recumbent RAO, LAO, LPO, RPO, right and left lateral decubitus, dorsal decubitus, ventral decubitus, tangential, lordotic, inferosuperior axial, dorsoplantar, parietoacanthial, cephalic and caudad tube tilts.	
Manipulate the x-ray phantoms and peers into appropriate positions for basic radiographic positions described in the corresponding chapter.	1,2,3,4,,6,8

Chapter 3 Chest

Upon completion of this chapter the student will be able to:	SCANS
Manipulate the x-ray phantoms and peers into appropriate positions for radiographic examination of the chest.	1,2,3,4,5,6,7,8
Determine the appropriate exposure values for chest radiography performed in the department against the upright bucky with AEC, and performed without a bucky in a wheelchair or stretcher utilizing manual techniques.	1,2,8
Expose phantoms for a chest exam in the following positions: AP supine, AP semi-erect on a stretcher, lordotic supine with the tube tilt method, left and right lateral decubitus, and obliques.	1,2,4,5,6,7,8
Determine the correct cassette size, patient ID window placement, and marker placement.	1,2,6
Position a lab partner and IR properly according to body habitus.	1,2,3,5
Manipulate the radiographic tube and table so that vertical, longitudinal, or horizontal detents are attained.	1,2,6
Determine the correct exposure factors of (kV, time, mA) according to accepted methods.	1,2,6
Demonstrate the use and value the importance of radiation protection by use of gonadal shields, lead aprons, and appropriate questions to patients.	1,2,3,5,6
Label radiographs for anatomy presented in this chapter.	1,2,4
Analyze radiographs for accuracy of positioning and/or technique.	1,2,3,6
Critique radiographs based on evaluation criteria provided in the textbook.	1,2,3,5,6

Chapter 4 Abdomen

Upon completion of this chapter the student will be able to:	SCANS
Manipulate the x-ray phantoms and peers into appropriate positions for radiographic examination of the Abdomen.	1,2,3,4,,6,8
Determine the appropriate exposure values for abdominal radiography performed in the department in a bucky utilizing AEC and manual techniques.	1,2,8
Expose phantoms for abdominal exams in the following positions: AP supine, AP erect, left lateral decubitus, dorsal decubitus, and obliques.	1,2,6,8
Position a lab partner and IR properly according to body habitus.	1,2,3,5
Determine the correct cassette size, patient ID window placement, and marker placement.	1,2,6
Manipulate the radiographic tube and table so that vertical, longitudinal, or horizontal detents are attained.	1,2,6

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Determine the correct exposure factors of (kV, time, mA) according to accepted methods.	1,2,6
Demonstrate the use and value the importance of radiation protection by use of gonadal shields, lead aprons, and appropriate questions to patients.	1,2,3,5,6
Label radiographs for anatomy presented in this chapter.	1,2,4
Analyze radiographs for accuracy of positioning and/or technique.	1,2,3,6
Critique radiographs based on evaluation criteria provided in the textbook and provided by the instructor.	1,2,3,5,6

Chapter 5 Upper Limb

Upon completion of this chapter the student will be able to:	SCANS
Manipulate the x-ray phantoms and peers into appropriate positions for routine and non-routine, radiographic examination of the fingers, hand, wrist, forearm, and elbow.	1,2,3,4,,6,8
Determine the appropriate exposure values for upper limb radiography using manual techniques.	1,2,6
Expose phantoms for upper limb radiography and obtain acceptable radiographs approved by the course instructor.	1,2,6,8
Position a lab partner and IR properly according to body habitus.	1,2,3,5
Determine the correct cassette size, patient ID window placement, and marker placement for CR and analog systems.	1,2,6
Manipulate the radiographic tube for routine and non-routine positions including cross table positioning.	1,2,6
Demonstrate the use and value the importance of radiation protection by use of gonadal shields, lead aprons, and appropriate questions to patients.	1,2,3,5,6
Label radiographs for anatomy presented in this chapter.	1,2,4
Analyze radiographs for accuracy of positioning and/or technique.	1,2,3,6
Critique radiographs based on evaluation criteria provided in the textbook and provided by the instructor.	1,2,3,5,6

Chapter 6 Humerus and Shoulder Girdle

Upon completion of this chapter the student will be able to:	SCANS
Manipulate the x-ray phantoms and peers into appropriate positions for routine and non-routine, radiographic examination of the humerus and shoulder girdle.	1,2,3,4,,6,8
Determine the appropriate exposure values for the humerus and shoulder girdle using manual techniques.	1,2,6
Expose phantoms for the exams presented in this chapter and obtain acceptable radiographs approved by the course instructor.	1,2,6,8
Position a lab partner and the IR properly according to body habitus.	1,2,3,5
Demonstrate how to perform a “breathing technique” for a transthoracic of the humerus by using a lab partner.	1,2,3,4,5,6,7
Determine the correct cassette size, patient ID window placement, and marker placement for CR and analog systems.	1,2,6

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Manipulate the radiographic tube for routine and non-routine positions including cross table and axial positioning.	1,2,6
Demonstrate the use and value the importance of radiation protection by use of gonadal shields, lead aprons, and appropriate questions to patients.	1,2,3,5,6
Label radiographs for anatomy presented in this chapter.	1,2,4
Analyze radiographs for accuracy of positioning and/or technique.	1,2,3,6
Critique radiographs based on evaluation criteria provided in the textbook and provided by the instructor.	1,2,3,5,6

Dress Requirements:

During the lab we will be simulating positions of the Chest, Abdomen, and Upper Extremities on each other. Students will be required to wear scrubs. Do not wear belts, jewelry, or any objects that may inhibit the learning opportunity. If scrubs are not worn a deduction of 100 points for the lab may be given. Lockers are available for students to use and will be assigned by the secretary if you request.

Method of Presentation: Informal lecture, Practical Positioning, and Lab Testing.

Code of Ethics: RS 3340 adheres to the ISU Code of Conduct. In particular, academic dishonesty, however small, creates a breach in academic integrity. A student's participation in this course comes with the expectation that his or her work will be completed in full observance of the ISU Code of Student Conduct.

Academic Dishonesty Policy:

Academic dishonesty (cheating, plagiarism, etc.) will not be tolerated in this class and may result in suspension or dismissal from this course and from the program. Cases will also be referred to the Dean of Students for possible dismissal from the university.

Cheating includes, but is not limited to, (1) use of any unauthorized assistance in taking quizzes, tests, or examinations; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or completing other assignments; or (3) the acquisition of tests or other academic materials belonging to the university faculty or staff without permission.

Plagiarism includes, but is not limited to, the use of, by paraphrase or direct quotation without correct recognition, the published or unpublished works of another person. The use of materials generated by agencies engaged in "selling" term papers is also plagiarism.

Many components RS 3340 are designed to be highly interactive. Students are encouraged to take full advantage of the many resources available including Internet sites, handouts and workbooks, other textbooks and journals, faculty, and peers. This interactive collegial learning environment is conducive for life-long learning.

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What does this mean: I have allowed ‘printed material’ from the Web site to be available to the student. This can present problems if not used properly. Material from quizzes and tests should be used for your OWN study endeavors. Because the quizzes are open book, you should not obtain the answers from other students prior to taking the quizzes. This defeats the intended learning methodology. Also, **DO NOT** obtain material (quizzes and tests) from previous students who have taken this course. I will consider this cheating and could result in an automatic ‘F’ for the quiz and the course. You may print the quizzes at your discretion, but I do not allow printing of tests. Additionally tests cannot be reviewed after they have been taken except in my presence. Failure to follow these instructions will result in a failure of the course.

When students submit their efforts for grading, they are attesting that they have abided by these rules.

Classroom Procedure

1. **Attendance:** You are expected to attend lab 100% of the time during your scheduled section. If something urgent arises you may trade lab sections with another student. **There are no make-up sessions for missed labs, if you miss it you will receive a 0.**

2. Grading Procedure

Grades will be weighted as follows:

Students will be graded on participation for each lab (100 points per lab) by completing the activities outlined for each lab. There will be five lab tests given throughout the semester, including the final. These tests will allow students to demonstrate to the instructor their competence in performing x-ray examinations.

Each lab test students will perform 4 exams from anatomy chosen out of 4 different boxes. Students will be timed and graded on a scale of how well they perform in each category for a total of 19 points. The categories students will be graded on are as follows: Patient safety, Communication, IR size/type, Tube/part/IR alignment, Patient position, SID, Collimation, Marker, Professionalism, Control panel (technique selection), Radiation protection, and Cassette exchange.

3. Grading:

ASSESSMENT METHOD	PERCENTAGE VALUE
Lab Participation	25%
Lab Test #1	15%
Lab Test #2	15%
Lab Test #3	15%
Lab Test #4	15%
Lab Test #5	15%

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4. **Final Grade:** Letter grades will be awarded as follows:

+/- System			
93-100%	A	73-76%	C
90-92%	A-	70-72%	C-
87-89%	B+	67-69%	D+
83-86%	B	63-66%	D
80-82%	B-	60-62%	D-
77-79%	C+	59% Below	F

Note: A grade of C or better is required in this course in order to receive a degree from the Department of Radiographic Science.

5. **Radiation Monitoring:** You are to wear your TLD during each lab session. Failure to wear your TLD will result in you being required to remain OUTSIDE of the lab during each radiographic exposure.

6. **Cell phone policy:** Cell phones should not be used in class. They should be placed in silent or vibrating mode or turned off. Additionally receiving and retrieving text messages should not occur during class or in labs. Failure to follow this policy will result in a deduction of grade up to 10% per lab at the discretion of the instructor. If you need to communicate to someone outside of the class in an emergency situation please inform the instructor so accommodations to this policy may be made.

Disability Services: Students with disabilities who wish to have accommodations provided by the University must self-identify with Disability Services (236-3599) in order to have accommodations provided. Information and applications are available in the Center and may be picked up in person or requested by telephone. The URL is <http://www.isu.edu/ada4isu/>