

**IDAHO STATE UNIVERSITY**  
Department of Radiographic Science  
R.S. 3310, Radiographic Methods I  
Course Syllabus

**Course Credit:** 2 Credits  
**Time and Location:** Monday and Wednesday, 8:00 a.m. - 08:50 a.m., NURS  
Rm 120  
**Instructor:** Trevor Ward, MSRS, RT(R)(CT)(MR)  
**Phone:** 282-4112 or 282-4042 (Secretary, Erin)  
**Email:** wardtrev@isu.edu

**Required Text:**

Bontrager, Kenneth L. & Lampignano, John P. (2018) Textbook of Radiographic Positioning and Related Anatomy (9<sup>th</sup> ed.) ISBN 978-0-323-39966-1

**Recommended Text:**

Bontrager, K.L. Workbook and Laboratory Manual Radiographic Positioning and Related Anatomy, Vol. I & II, Mosby Year Book, St. Louis.

**Course Description:** The first portion of Radiographic Methods will provide the student with and understanding of basic radiographic terminology, and will introduce first year students to the basic theory and principles for radiographic examinations of the Chest, Abdomen, Upper Limb, Humerus and Shoulder Girdle. Radiographic Methods I is a co-requisite with R.S. 3340, Lab Practicum I. The intent is to apply theory and principles during lab practicum sessions prior to actual clinical contact.

In this course students will be instructed in the utilization of imaging equipment, accessories, optimal exposure factors, and proper patient positioning to minimize radiation exposure to the patients, themselves, and others. These practices assure radiation exposures are kept as low as reasonably achievable (ALARA).

**Method of Presentation:** Lecture, PowerPoint, Radiographs, Handouts

**Code of Ethics:** RS 3310 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.

**Course Learning Objectives/Goals:** This course has been designed to give the student the opportunity to identify radiographic positioning terms and to become familiar with the anatomy of the thorax, abdomen and upper extremities. Basic theory, terminology, specific body positions, topical landmarks, and certain disease processes will be introduced. Additionally, the student will gain an appreciation for the technical aspects of radiology and will gain a better understanding of the process involved in critiquing radiographs from the vantage point of

**IDAHO STATE UNIVERSITY**  
 Department of Radiographic Science  
 R.S. 3310, Radiographic Methods I  
 Course Syllabus

technical accuracy. This course will ultimately prepare the student for the corresponding laboratory experience.

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 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:**

<b>A Three Part Foundation</b>	
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
<b>The Five Competencies</b>	
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

<b>Upon completion of this chapter the student will be able to:</b>	<b>SCANS</b>
Identify the two divisions of the skeletal system and list the total number of bones in the average adult human.	<b>1,2,3,4,,6,8</b>
Describe the three bone classifications and list examples of each classification.	<b>1,2,4</b>
Describe the ossification process and the primary and secondary bone	<b>1,2,6</b>

**IDAHO STATE UNIVERSITY**  
 Department of Radiographic Science  
 R.S. 3310, Radiographic Methods I  
 Course Syllabus

formation centers.	
Classify joints by their functional and structural characteristics, describe the three classes and subclasses of joints, and give examples of the six movement types of synovial joints.	<b>1,2,4,6,7</b>
Define and use basic positioning terminology to include general terminology, body planes, body surfaces, specific body position, relationship terms, and terminology related to movement.	<b>1,2,4,5,6,7,8</b>
Explain the similarities and differences for these terms: positions, projections, and views.	<b>2,6</b>
Describe the process of evaluating a radiograph for positioning accuracy and image quality.	<b>1,2,4,5,6,7,8</b>
Explain the importance of anatomical side markers and proper radiograph identification.	<b>1,2,3,4,6,7,8</b>
List the specific annual dose limiting recommendations of whole body effective dose for the general population and for occupationally exposed workers.	<b>1,2,6,7</b>
Explain the ALARA principle.	<b>1,2,6</b>
Explain the two general rules of determining positioning routines and apply these principles to specific structures of the body.	<b>1,2,4,5,6,7,8</b>
Demonstrate the proper way of displaying radiographs for viewing on a computer monitor or a viewbox.	<b>1,2,4,5,6,7,8</b>

**Chapter 3 Chest**

<b>Upon completion of this chapter the student will be able to:</b>	<b>SCANS</b>
Identify basic radiographic anatomy for the bony thorax, respiratory system, larynx, trachea, right and left bronchi, lungs, and mediastinum.	<b>1,2,4,6</b>
Describe the position considerations when performing chest radiography.	<b>1,2,3,6,7</b>
Determine the breathing instructions required for performing chest radiography.	<b>1,2,3,4,5,6,7</b>
List reasons why chest radiograph should be performed erect.	<b>1,2,4,5,6</b>
Given several chest radiographs determine if they are adequate to turn in by a technologist for radiologist interpretation.	<b>1,2,3,4,6,7,8</b>
Identify the central ray location for chest radiography.	<b>1,2,4,6</b>
Choose the appropriate technical factors for chest radiography.	<b>1,2,4,5,6,7,8</b>
List several pathologic indications for chest radiography.	<b>1,2,4,6,7</b>
Learn the basic and special projections of the chest including: PA and Lateral, Supine and Erect, Decubitus, Lordotic, and Obliques.	<b>1,2,4,6</b>

**Chapter 4 Abdomen**

<b>Upon completion of this chapter the student will be able to:</b>	<b>SCANS</b>
Identify basic radiographic anatomy of the abdomen including the: a. abdominal muscles, b. the organ systems, c. digestive system, d. accessory	<b>1,2,4,5,6,7,8</b>

**IDAHO STATE UNIVERSITY**  
 Department of Radiographic Science  
 R.S. 3310, Radiographic Methods I  
 Course Syllabus

digestive organs, e. urinary system, f. abdominal cavities, g. quadrants and regions, and h. topographic landmarks.	
Describe position considerations when performing abdominal radiography.	<b>1,2,6,7</b>
Determine proper breathing instructions when performing abdominal radiography.	<b>1,2,3,4,5,6,7</b>
List several positioning considerations the technologist should consider prior to performing abdominal radiography.	<b>1,2,3,4,6</b>
Identify the central location for abdominal radiography.	<b>1,2,4,6</b>
List several pathologic indications for abdominal radiography.	<b>1,2,4,6,7</b>
Choose the appropriate technical factors for abdominal radiography.	<b>1,2,4,5,6,7,8</b>
Learn the basic and special projections of the abdomen including: PA prone, Lateral decubitus, Erect AP, Dorsal decubitus (lateral), Lateral, and the Acute abdominal series.	<b>1,2,4,6</b>

**Chapter 5 Upper Limb**

<b>Upon completion of this chapter the student will be able to:</b>	<b>SCANS</b>
Identify, both on electronic media provided by the instructor and on radiographs, specific anatomy of the upper limb. This anatomy includes: Hand and wrist, Joints of the hand, Carpals, Forearm, Distal humerus, Classification of joints, and Fat pad signs.	<b>1,2,3,4,5,6,7,8</b>
List and describe the location, size and shape of each carpal bone of the wrist.	<b>1,2,4,6,7,8</b>
Identify, by name, classification and movement type, specific joints of the upper limb.	<b>1,2,4,6,7</b>
For all basic and special projections, list the technical factors and the central ray locations for the thumb, fingers, hand, wrist, forearm, elbow and humerus.	<b>1,2,4,6</b>
Describe which structures are best seen with basic and special projections of the upper limb.	<b>1,2,4,6</b>
Choose the appropriate technical factors for upper limb radiography.	<b>1,2,4,5,6,7,8</b>
List the names and location of the radiographically significant fat pads and stripes of the wrist and elbow and describe how these are used by the radiologist in interpreting radiographs.	<b>1,2,4,6,7</b>
Describe the criteria or means of evaluating the radiograph for an accurate and true lateral elbow position.	<b>1,2,4,6,7</b>

**Chapter 6 Humerus and Shoulder Girdle**

<b>Upon completion of this chapter the student will be able to:</b>	<b>SCANS</b>
With electronic media created by the instructor and on radiographs, identify specific anatomy of the proximal humerus and shoulder girdle as described in the textbook. This includes the: Proximal humerus, Shoulder girdle, Clavicle, Scapula, and Classification of Joints.	<b>1,2,3,4,5,6,7,8</b>

**IDAHO STATE UNIVERSITY**  
 Department of Radiographic Science  
 R.S. 3310, Radiographic Methods I  
 Course Syllabus

Describe anatomical relationships of prominent structures of the proximal humerus and the shoulder girdle as described in the textbook.	<b>1,2,4,5,6,7,8</b>
Choose the appropriate technical factors for upper humerus and shoulder radiography.	<b>1,2,4,5,6,7,8</b>
List and describe basic and special projections of the proximal humerus and shoulder to include: the type and size of film holder, the central ray location with correct angles, and the structures best demonstrated.	<b>1,2,4,6,7</b>

**All Chapters (See Lab Syllabi)**

<b>Concurrently with this course the student will:</b>	<b>SCANS</b>
Participate in radiographic procedures in a lab setting consistent with R.S. 3310.	<b>1,2,3,4,5,6,7,8</b>

**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 3310 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.

***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.

**IDAHO STATE UNIVERSITY**  
 Department of Radiographic Science  
 R.S. 3310, Radiographic Methods I  
 Course Syllabus

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

**Kahoot Test Review:**

I do not allow taking pictures of the Kahoot Review. If I catch you taking a picture, you will be dismissed from the review.

**Classroom Procedure:**

1. **Attendance:** You are expected to attend class regularly. It is your responsibility to maintain a level of attendance to derive maximum benefit from the instruction. Each day missed without an acceptable excuse (doctor's note) will have a penalty of an overall 1% deduction per day on your final grade. For example, if your final grade is a 91% at the end of the semester and you missed two class periods without an acceptable excuse (doctor's note) you will receive a final grade of 89%.

2. **Grading Procedure:**

Assessment Method	Percentage Value
Test #1 = Chapter 1	12%
Test #2 = Chapter 2	12%
Test #3 = Chapter 3	12%
Test #4 = Chapter 4	12%
Test #5 = Chapter 5	12%
Online and in-class Quizzes	15%
Final Comprehensive Exam	25%

**This grading Scale will be used:**

+/- 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.*

The minimum requirements to earn a passing grade are successful completion of all tests (70% minimum). Tests and Quizzes will be a combination of either written or computer based. Tests will be scheduled to be taken in a computer lab on campus. The lab in the nursing building on the ground floor is the lab I try to schedule for tests; however, at times tests may need to be

**IDAHO STATE UNIVERSITY**  
Department of Radiographic Science  
R.S. 3310, Radiographic Methods I  
Course Syllabus

scheduled in the Rendezvous, if the nursing lab is not available. It is the student's responsibility to know when and where tests are scheduled. Dates are posted in the Web Course Calendar and reminders will be given in class. Students may use their own wireless laptops if they have one if tests are given in class; otherwise, students are required to use a lab computer when testing.

3. **Computer Account:** All students are required to have an ISU student computer account. There is a fee required for this account. Obtain the account at the Computer Center, which is located in the basement of the College of Business Building or in the Rendezvous Lab.

4. **Make-up:** If you are unable to sit for an examination, you may request a make-up exam. There will be no makeup tests unless you have **PREARRANGED** this with me **PRIOR** to the test deadline. The only way you can make-up a test is if you provide me with an acceptable excuse at my discretion. An acceptable excuse is defined **as very** sick; a death in the immediate family; some unforeseen circumstance that would prohibit you from taking the exam. The key is to communicate with me directly via email, phone, or in person. Do not speak to another faculty member or the department secretary. I'm very easy to catch with email, but make sure your email is received by me prior to the test deadline.

***For Your Information:** Material from tests you have taken during the semester will be presented again on future tests. This means when you are taking test 2 you may find material from test 1 on the exam, etc. The material builds on itself and needs to be remembered.*

**Cell phone/ laptop policy:** Cell phones should not be used in class. They should be placed in silent or vibrating mode or turned off. Failure to follow this policy will result in a deduction of grade up to 10% 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. Laptops may be used for subject related purposes such as taking notes. If you are caught doing anything that is not course related on your laptop, you will be dismissed from class.

**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/>