

IDAHO STATE UNIVERSITY
Radiographic Science Program
RS 4460 Introduction to Radiographic Quality Assurance
Course Syllabus

Course Credit: 2 Credits
Time and Location: Tuesday 9:00 a.m. to 10:50 a.m., NURS Rm 120
Instructor: Christopher Wertz, MSRS, RT(R)
Email/Phone: wertchr2@isu.edu 282-2871, 282-4042 (Secretary, Erin)

Overview: This course is intended to provide the student with the knowledge necessary to conduct a quality assurance program in a radiology department. The student will learn to use a variety of test equipment, analyze the results and make recommendations for corrective action based upon those results. Students will also design and carry out a research experiment and present the results in a poster format.

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).

Textbooks: Papp, J. Quality Management in the Imaging Sciences. Mosby. 4th ed. 2011

Method of Presentation: Lecture, PowerPoint, Handouts, Moodle Supplement, Lab experiments

Code of Ethics: RS 4460 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: The goals of this course are to teach the necessary skills that radiographers need to become knowledgeable in quality management, quality assurance, and quality control. Government and accreditation agencies mandate that such procedures be documented and that equipment is functioning within accepted standards and is operating properly. Because many of these responsibilities have been delegated to technologists, it is imperative that students become educated in this realm of the profession and are familiar with quality management issues.

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>

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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:

Upon completion of this course the student will be able to:	SCANS
Understand the need for QA/QC	1,2,6
Understand the difference between QA, QC, QM.	1,2,6
Become familiar with the basic administrative responsibilities of a QM program.	1,2,6
Understand imaging equipment function and its importance in creating quality images as well as performing QC testing.	1,2,6,7
Learn and apply the performance tests for radiographic equipment.	1,2,6,7
Understand digital imaging characteristics and specific QC issues related to digital imaging.	1,2,6,7
Understand the importance of repeat analysis studies in QM.	1,2,6
Learn to identify poor quality images and what corrective action needs to be taken for the repeat.	1,2,6
Be able to perform and analyze results of QA/QC testing and recommend corrective action for the following: Timer, Focal spot, kVp, HVL, Collimator/beam alignment, and X-ray generator	1,2,4,5,6,7,8
Design and carry out an experimental research project as part of a small group effort	1,2,3,4,5,6,7,8
Present the results of the research project in a poster presentation format	1,2,3,4,5,6,8

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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 4460 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.

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

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2. Grading Procedure:

Assessment Method	Percentage Value
Chapter 1 Quiz	4%
Chapter 2 Quiz	8%
Chapter 7 Quiz	12%
Chapter 8 Quiz	12%
Chapter 9 Quiz	12%
Chapter 10 Quiz	12%
Labs/Assignments	15%
Experimental Poster	25%
Total	100%

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, the Turner Lab is close to our classroom, and is the one I will try to schedule if the nursing building 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.

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. Class Room Procedures:

1. Attendance is encouraged and is necessary for satisfactory completion of lab exercises

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2. Make-up: If you are unable to sit for a scheduled exam, you must contact the instructor **PRIOR** to the scheduled exam. Examinations completed late are subject to a 20% grade reduction.
3. Expect a quiz at any time at the instructor's discretion. These will be designed to emphasize important points that the student should be familiar with for the class exams as well as the ARRT registry.
4. **No make-up's are allowed for missed quizzes or extra credit quizzes.**
5. Lab reports are due on the assigned due date (see course schedule). If a lab exercise is missed, the student is responsible to complete the exercise on his or her own without the use of the groups data.
6. Lab reports must be neatly written or typed. **Late lab reports or illegible reports will not be accepted.**

In addition, it is a requirement to take all tests and complete all labs offered during the semester. An incomplete or failure will be issued for the class if a test or lab is not taken. The decision to issue an incomplete or failure will be given at the course instructor's discretion.

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 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% 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.

Electronic Devices: Electronic devices such as laptops and tablets may be used in class for note-taking and academic purposes. If a student is caught using such devices for any other purpose (i.e. social networking, gaming, etc.) the student will be dismissed from the class for that week. **No electronic devices are to be used during guest lectures/presentations.**

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/>