

IDAHO STATE UNIVERSITY
 Department of Radiographic Science
 RS 4470, Advanced Radiographic Exposure
 Course Syllabus

Course Credit: 2 Credits
Time and Location: Tuesdays, 8:00 – 9:50 a.m. NURS Rm 120
Instructor: Christopher Wertz, MSRS, RT(R)
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Overview: This course will cover a review of basic radiographic exposure principles, technique charts, exposure indicators (EI), automatic exposure control (AEC), fluoroscopy, image intensification, cinefluoroscopy, computed radiography (CR), PACS, digital radiography (DR), electronic medical records (EMR), other evolving aspects of medical imaging, and non-medical applications of medical imaging technology.

Recommended Text: Principles of Radiographic Imaging, An Art and a Science, 4th Ed., Carlton & Adler, Delmar, 2006.

Method of Presentation: Lecture, discussion, and tour of Portneuf Medical Center DR room.

Course Learning Objectives/Goals: This course is a continuation of Radiographic Exposure and has been designed to broaden and review the theory of exposure technique. A more in depth study of AEC, digital fluoroscopy, image intensification, CR, DR, EMR, and PACS systems will be presented. The goal is for the student to gain a better understanding of systems and to focus on the assortment of variables that combine to produce an acceptable study.

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:

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

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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
Review fundamental principles of radiographic exposure technique	1,2,6
Become familiar with the basic principles of computed radiography (CR), and digital radiography (DR).	1,2,6
Understand the processes used for the creation/application of technique charts and utilizing APR technique charts.	1,2,4,5,6
Interpret exposure indicator (EI) numbers (i.e. IgM, S).	1,2,6
Review the operation of Automatic Exposure Control (AEC) systems.	1,2,4,5,6
Understand the principles of fluoroscopy, image intensification, and cinefluoroscopy.	1,2,6
Identify emerging technology on the horizon in medical imaging.	1,2,6
Explore applications of non-medical uses of medical imaging.	1,2,6

Code of Ethics: RS 4430 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.

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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 4470 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.

Classroom Procedure:

1. **Attendance:** You are expected to attend class regularly. It is your responsibility to maintain a level of attendance which will allow you to derive maximum benefit from the instruction. Excessive absences (>10%) will result in a lower course grade if you are borderline between two grades. Conversely, if you have good attendance and are border line between two grades, I will award the higher grade.

2. **Grading Procedure:**

Assessment Method	Percentage Value
Test #1	25%
Test #2 (w/final project)	25%
Assignments	25%
Attendance	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).

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.

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4. **Make-up:** If you are unable to sit for an examination, you may request a make-up exam. You must inform me that you will not be present for the examination **prior** to the scheduled time. An additional 10% drop in the test grade will result if prior notification is not given and is not accepted by me prior to taking the test. The highest grade you can receive for a make-up exam is 89% unless you provide me with an acceptable excuse. 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.

In addition, it is a requirement to take all tests offered during the semester. An incomplete will be issued for the class if a test is not taken.

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.

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/>