

**IDAHO STATE UNIVERSITY**  
Radiographic Science Program  
RS 4430, Radiographic Pathology  
Course Syllabus

**Course Credit:** 2 Credits  
**Time and Location:** Thursday, 1:00 p.m. - 2:50 p.m, NURS Rm 120  
**Instructor:** Wendy Mickelsen, MHE, RT(R)(M)  
**Phone:** 282-2112 or 282-4042 (Secretary)

**Overview:** This course will explore multiple areas of radiographic pathology by body systems including: respiratory system, skeletal system, GI system, urinary system, cardiovascular system, nervous system, hematopoietic system, endocrine system, and reproductive system.

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).

**Required Text:** Eisenberg, *Comprehensive Radiographic Pathology*, 5<sup>th</sup> ed., Mosby, St. Louis.

**Method of Presentation:** Lecture, PowerPoint, Radiographic Images, Handouts

**Course Learning Objectives/Goals:** This course has been designed to give the student a knowledgeable foundation and understanding of terms and basic radiographic manifestations of pathological conditions and their relevance to imaging procedures. Body systems covered include: respiratory system, skeletal system, GI system, urinary system, cardiovascular system, nervous system, hematopoietic system, endocrine system, and reproductive system.

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:**

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| <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:**

**Unit I – Chapter 1 & 2**

| <b>Upon completion of this material the student will be able to:</b>  | <b>SCANS</b>  |
|---|---------------|
| Define basic pathology related terms.   | 1,2,6         |
| Identify diseases caused by or contributed to by genetic factors.   | 1,2,6         |
| Identify diseases caused by or contributed to by environmental factors.   | 1,2,6         |
| Describe the healing process.   | 1,2,6         |
| Discuss examples of additive and destructive diseases and exposure technique alterations required by the radiographer.                              | 1,2,6         |
| Examine and discuss NOVA's <i>Cancer Warrior</i> and describe the term angiogenesis.  | 1,2,6         |
| Describe common characteristics of benign and malignant neoplasms.  | 1,2,6         |
| Under instructor supervision, perform a core needle biopsy on an apple and examine the specimens obtained.  | 1,2,4,5,6,7,8 |
| Describe multiple specialized imaging procedures used in diagnosing disease processes (US, CT, MRI, NM, PET, angiography, cardiology, mammography). | 1,2,6         |

**Unit II – Chapter 3,4,5,6**

| <b>Upon completion of this material the student will be able to:</b>   | <b>SCANS</b> |
|--|--------------|
| Identify anatomic structures on diagrams and radiographs of the chest, skeletal system, GI system, and urinary system. | 1,2,6        |
| Describe the physiology and function of the respiratory system, skeletal system, GI system, and urinary system.        | 1,2,6        |

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|   |       |
|---|-------|
| Differentiate common pathologic disorders and identify radiographic manifestations presented in chapters 3-6. | 1,2,6 |
| Discuss the use of non-ionizing imaging modalities such as MRI or US when clinically appropriate.             | 1,2,6 |

**Unit III – Chapter 7,8,9,10,11**

| <b>Upon completion of this units the student will be able to:</b>   | <b>SCANS</b> |
|---|--------------|
| Identify anatomic structures on diagrams and radiographs of the cardiovascular system, nervous system, hematopoietic system, endocrine system, and reproductive system. | 1,2,6        |
| Describe the physiology and function of the cardiovascular system, nervous system, hematopoietic system, endocrine system, and reproductive system.                     | 1,2,6        |
| Differentiate common pathologic disorders and identify radiographic manifestations presented in chapters 7-11.  | 1,2,6        |
| Discuss the purpose and process of placing stents in cardiology.  | 1,2,6        |
| Discuss cardiac CT for calcium scoring  | 1,2,6        |
| Discuss the use of non-ionizing imaging modalities such as MRI or US when clinically appropriate.   | 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.

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 4430 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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**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                   | 25%              |
| Assignments/Article       | 25%              |
| Poster Board – Case Study | 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 Radiographic Science Program.*

The minimum requirements to earn a passing grade are successful completion of all tests (70% minimum).

3. **Poster Board Case Study:** Each student will pick one interesting pathological case study and prepare a poster board display. In class March 4<sup>th</sup> & 11<sup>th</sup>, 2014, students will perform a 7-10 minute presentation of their chosen (and instructor approved) topic. If a student's presentation is less than seven minutes, a full letter grade will be deducted from the final score. This project will be submitted for the exhibit display at the Idaho Society of Radiologic Technologists (ISRT) annual conference in April.

4. **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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5. **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/>