

IDAHO STATE UNIVERSITY
Radiographic Science Program
RS 3375, Pediatric Radiography
Course Syllabus

Course Credit: 1 Credit
Time and Location: Monday, 9:00 a.m. - 9:50 a.m, Building #66 Rm 120
Instructor: Wendy Mickelsen, MHE, RT(R)(M)(BD)
Phone/email: (208) 282-2112 wendymickelsen@isu.edu

Overview: This course will study theory and clinical applications relevant to pediatric radiography. Topic areas will include: Image Gently campaign, age appropriate verbal and non-verbal communication skills, psychological aspects, imaging prep and examination considerations, immobilization techniques, positioning, technical factor/exposure adjustments, radiation protection, and common pediatric pathology.

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).

Reference Texts: Bontrager, K.L. Radiographic Positioning and Related Anatomy, 2021, 10th ed., Mosby Year Book, St. Louis.

Ehrlich, R. Patient Care in Radiography, 2021, 10th ed., Mosby, St. Louis.

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

Course Learning Objectives/Goals: Pediatric Radiography has been designed to give the student a knowledgeable foundation to apply during imaging procedures performed on pediatric patients in a clinical setting. Topic areas will include: psychological aspects, utilizing age appropriate verbal and non-verbal communication skills, imaging prep and examination considerations (pre, during, post), immobilization techniques, positioning, technical factor/exposure adjustments, radiation protection, and common pediatric pathology.

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:

Unit I

Upon completion of this material the student will be able to:	SCANS
Discuss and recognize the different types and ages of pediatric patients to include: neonates, infants, toddlers, preschool children, school aged children, and adolescents.	1,2,6
Identify effective non-verbal and verbal communication techniques to utilize when imaging pediatric patients.	1,2,6
Discuss pediatric patient “preps” and how they may differ from adults.	1,2,6
Discuss environmental modifications imaging departments can make to reduce the anxiety levels of pediatric patients (see Primary Children’s Medical Center Imaging Department for exemplary examples)	1,2,6
Discuss the utilization of a treasure box (stickers, small stuffed toys) to be given at the completion of the examination.	1,2,6

Unit II

Upon completion of this material the student will be able to:	SCANS
Describe common commercial immobilization devices (Pigg-O-Stat, Tam-em board, papoose board) and describe their function.	1,2,6
Describe and demonstrate the use of ancillary immobilization devices (tape, sponges, sandbags, stockinette or ace bandage, mummy wraps.	1,2,4,6
Identify effective methods of reducing patient and guardian doses during pediatric imaging procedures (collimation, low dosage techniques, limit repeat exposures).	1,2,6

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On the x-ray console, appropriately set exposure techniques (manual, AEC, or APR) for the following scenarios: AP chest on a 1 month old baby PA chest on 2 year old in Pigg-O-Stat PA chest on 7 year old at upright bucky PA chest on 16 year old at upright bucky	1,2,4,5,6,7,8
Discuss “cumulative effects of radiation” and why this is of utmost concern for pediatric patients.	1,2,6
Describe how to correctly apply shaped contact shields and lead aprons when imaging pediatric patients.	1,2,6
Discuss and examine the purpose of the Image Gently campaign.	1,2,6
Discuss the use of non-ionizing imaging modalities such as MRI or US when clinically appropriate.	1,2,6

Unit III

Upon completion of this units the student will be able to:	SCANS
Describe the term non-accidental trauma (NAT) and discuss the radiographer’s role in performing a complete skeletal survey.	1,2,4,6,8
Examine normal bone development (ossification) from birth to adulthood.	1,2,6
Examine common respiratory pathology of the pediatric patient to include: aspiration, asthma, croup, cystic fibrosis, hyaline membrane disease, and pneumonia.	1,2,6
Examine common abdominal pathology of the pediatric patient to include: pyloric stenosis, imperforate anus, volvulus, intussusception, Hirschsprung’s disease, polycystic kidney disease, Wilms’ tumor, urinary tract infection, and vesicoureteral reflux.	1,2,6
Examine common skeletal system pathology of the pediatric patient to include: craniostenosis, hydrocephalus, osteogenesis imperfecta, osteopetrosis, osteomalacia, developmental dysplasia of the hip, club foot, and spina bifida.	1,2,6

Code of Ethics: RS 3375 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

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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 3375 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. **If you will be unable to attend in person, please notify me and join in on the Zoom link provided.**

2. Grading Procedure:

Assessment Method	Percentage Value
Test #1 = Unit #1 (Mid-term)	10%
Test #2 = Unit #2 (Final)	20%
Course Assignments	60%
Pediatric Case Study	10%

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).

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3. 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 90% 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. Accessing social media accounts is not acceptable during class time. **In addition, taking pictures in the classroom setting must be approved by the instructor (no random snap chats, clinical cases or radiographic images, etc.)**

Disability Services: Students with disabilities who wish to have accommodations provided by the University must self-identify with Disability Services (208) 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. See their link for more information:
<https://www.isu.edu/disabilityservices/>