Outcomes Mapping

__Technology and Health_ DIVISION							
Program:	Radiologic Technology	# Courses: (if applicable)		Updated:	June 2015	Submitted by:	Monique Neel

Institutional Level Outcomes (ILOs): ***As a result of an educational experience with any aspect of the college, students will develop the following knowledge, skills, abilities, and attitudes:***

1. Communication	2. Critical Thinking	3. Information and Technology Literacy	4: Personal, Social, Civic, & Environmental Responsibility

Connect PLOs with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated following the completion of the program or educational experience.		PLO to ILO Alignment			
PLO Name	*PLO Defined: Upon successful completion of this program, students will be able to:*	1	2	3	4
1. Clinical Competency	**Demonstrate clinical competency**			**M**	
2. Communication Skills	**Demonstrate communication skills**	**M**			
3. Critical Thinking	**Develop critical thinking skills**		**M**		
4. Professionalism	**Model professionalism**				**P**
5. Employment Demands	**Meet the employment demands of the medical community**				**M**
6.					
7.					
8.					
9.					
10.					

See the Outcomes Assessment website for definitions and examples of Mt. SAC's ILOs: http://www.mtsac.edu/instruction/outcomes/ilos.html

Key for Level of Learning
(Use for Mapping SLOs/MOs to PLOs to ILOs)
I = Knowledge/Skill Introduced
P = Knowledge/Skill Practiced/Applied
M = Knowledge/Skill Mastered

Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 50	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Identify health science professions that participate in the patient's total health care. (MO)	I			I							I		I	I
Identify various settings involved in the delivery of healthcare. (MO)	I			I							I			I
Identify legal and professional standards and relate each to practice in health professions. (MO)	I			I							I	I	I	I
Identify specific situations and conditions that give rise to ethical dilemmas in healthcare. (MO)	I			I							I	I	I	I
Identify the benefits of continuing education as related to improved patient care and professional enhancement. (MO)	I			I							I	I	I	I
Define tort and explain the differences between intentional and unintentional torts. (MO)	I			I							I	I	I	I
Define credentialing, certification, registration, licensure and regulations. (MO)	I			I							I		I	I
Explain legal terms, principles, doctrines and laws specific to the radiologic sciences and explain select concepts embodied in the principles of patients' rights, the doctrine of informed consent and other issues related to patients' rights. (MO)	I	I		I							I	I	I	I
Describe relationships and interdependencies of departments within a healthcare institution. (MO)	I	I		I							I		I	I
Describe the need and importance of personnel monitoring for radiation workers. (MO)	I	I		I							I	I	I	I
Describe how shielding, appropriate exposure factors, the cardinal principles, and the as low as reasonably achievable (ALARA) concepts minimize patient and/or personnel exposure. (MO)	I	I	I	I							I	I	I	I

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Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 50 (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Describe the components and implications of informed consent and how the forms are used relative to specific radiographic procedures. (MO)	I	I		I							I	I	I	I
Describe the importance of accurate, complete and correct methods of documentation as a legal and ethical imperative. (MO)	I	I		I							I	I	I	I
Discuss the reimbursement and payment options for healthcare services. (MO)	I			I							I			I
Discuss the role and value of a mission statement to the operation of an institution. (MO)	I			I							I	I	I	I
Discuss the responsibilities and relationships of all personnel in the radiology department. (MO)	I			I							I		I	I
Discuss career opportunities and advancement for the radiographer. (MO)	I			I							I			I
Discuss the origins of medical ethics and explain the role of ethical behavior in healthcare delivery. (MO)	I			I							I		I	I
Differentiate between quality improvement or management, quality assurance, and quality control. (MO)	I			I							I	I		I
Differentiate among accreditation types. (MO)	I			I							I	I		I
The student will describe the principles of radiation protection. (SLO)	I			I							I			
The student will describe and understand the principles of professional ethics set forth by the American Registry of Radiologic Technologists. (SLO)	I			I							I	I	I	I

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Course: RAD 50 (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
The student will describe and understand legal considerations relative to the patient/peer/physician relationship. (SLO)	I			I							I	I	I	I

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Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD91	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
The student will accurately acquire and record vital signs. (SLO)	P										**P**			
Identify the responsibilities of the healthcare facility and members of the healthcare team. (MO)	I													
Identify methods for determining the correct patient for a given procedure. (MO)	I													
Identify symptoms related to specific emergency situations. (MO)	I		I									**I**		
Identify specific types of tubes, lines, catheters, collection devices and describe the special problems faced in performing procedures on a patient with those devices.(MO)	I	I									**I**			
Identify and describe the routes of drug administration. (MO)	I	I									**I**			
Define terms related to infection control. (MO)	I	I									**I**			
Recognize life-threatening electrocardiogram (ECG) tracing. (MO)	I		I									**I**		
Distinguish among the chemical, generic and trade names for drugs in general. (MO)	I													
Explain how a person's cultural beliefs toward illness and health affect his or her health status. (MO)	I	I									**I**			**I**
Explain perceptions of death and dying from the viewpoint of both patient and radiographer. (MO)	I	I									**I**			
Explain the purpose, legal considerations and procedures for incident reporting. (MO)	I	I									**I**			
Explain the age-specific considerations necessary when performing radiographic procedures. (MO)	I	I									**I**			

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Course: RAD91 (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Explain the role of the radiographer in patient education. (MO)	I	I									I			
Explain the uses and impact of drug categories on the patient. (MO)	I	I									I			
Describe appropriate procedures for management of various types of trauma situations. (MO)	I	I									I			
Describe the practice standards for the radiographer as defined by the ASRT and state licensure. (MO)	I	I		I							I			
Describe the characteristics of each stage of grief. (MO)	I	I									I			I
Describe select immobilization techniques for various types of procedures and patient conditions. (MO)	I	I									I			
Describe specific patient safety measures and concerns. (MO)	I	I									I			
Describe methods to evaluate patient physical status. (MO)	I	I									I			
Describe vital signs and lab values used to assess patient condition, including sites for assessment and normal values. (MO)	I	I									I			
Describe the importance of standard precautions and isolation procedures, including sources and modes of transmission of infection and disease and institutional control procedures. (MO)	I	I									I			
Describe the different modes of communication and how challenges in communication can affect patient care. (MO)	I	I									I			

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SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Describe pharmacokinetic and pharmacodynamic principles of drugs. (MO)	I	I									I			
Demonstrate correct principles of body mechanics applicable to patient care and techniques for specific types of patient transfer. (MO)	P		P									P		
Demonstrate proper use of suction and oxygen equipment. (MO)	P		P									P		

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Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 61A	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Identify general components and functions of tube and filament circuits.(MO)	I		I								I	I		
Identify components of diagnostic x-ray tubes. (MO)	I		I								I	I		
Define radiation and radioactivity units of measure.(MO)	I		I								I	I		
Define potential difference, current, and resistance. (MO)	I		I								I	I		
Explain protocols used to extend x-ray tube life. (MO)	I	I	I								I	I		
Explain the use of standardized radiographic technique charts. (MO)	I	I	I								I	I		
Explain the relationship of energy, wavelength, and frequency. (MO)	I	I	I								I	I		
Explain functions of components of AEC devices. (MO)	I	I	I								I	I		
Explain permanent installation of radiographic equipment. (MO)	I	I	I								I	I		
Describe the processes of ionization and excitation.(MO)	I	I	I								I	I		
Describe fundamental atomic structure. (MO)	I	I	I								I	I		
Describe an electrons path of travel and transformations through the entire x-ray circuitry. (MO)	I	I	I								I	I		
Describe the purpose, components, types, and application of mobile units. (MO)	I	I	I								I	I		
Analyze filtration in terms of the effect on patient dosage. (MO)	I		I								I	I		

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Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 61A (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Apply and explain exposure factor considerations involved in selecting techniques. (MO)	I		I								I		I	
Apply conversion factors for changes in the following areas: distance, reciprocity law, 15% rule, and inverse square law. (MO)	I		I								I	I	I	
Apply radiation protection appropriate for a given radiographic procedure. (MO)	I		I									I	I	
Analyze relationships of factors that control and affect image exposure. (MO)	I		I									I		
Compare fixed kVp and variable kVp technique charts. (MO)	I		I									I		
Compare generators in terms of radiation produced and efficiency. (MO)	I		I									I		
Differentiate between ionizing and nonionizing radiation. (MO)	I		I								I	I		
The student will identify all parts of the X-ray Circuitry. (SLO)	I	I	I								I	I		
The student will identify the structure and function of the x-ray circuit. (SLO)	I	I	I								I	I		
The student will identify related radiology terminology concerning electricity, magnetism, and electromagnetism. (SLO)	I	I	I								I	I		

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Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD61B	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
The student will identify appropriate radiographic positioning methods for the upper extremity. (SLO)	I		I									I		
The student will accurately identify anatomy as it relates to radiographic positioning for the upper extremity. (SLO)	I		I									I		
The student will analyze images to determine the appropriate use of beam restriction. (SLO)	I		I									I		
Identify methods and barriers of communication and describe how each may be used or overcome effectively during patient education. (MO)		I									I			
Identify the structures demonstrated on routine radiographic images to include bones, bony processes and bony depressions. (MO)	I		I									I		
Explain radiographic procedures to patients and/or family members. (MO)		I									I			
Explain routine positions and projections for radiographic procedures of the upper extremity, shoulder, lower extremity, pelvic girdle, chest and abdomen. (MO)	I	I									I			
Describe standard positioning terms. (MO)	I	I									I			
Describe the general purpose of radiographic studies. (MO)	I	I									I			
Discuss equipment and supplies necessary to complete radiographic procedures. (MO)	I	I									I			
Discuss general procedural considerations and patient considerations for radiographic exams.	I	I									I			

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Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 61B (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Discuss the impact of patient preparation on the resulting radiographic image. (MO)	I	I	I								I	I		
Summarize the importance of proper positioning. (MO)	I	I									I			
Apply general radiation safety and protection practices associated with radiographic examinations. (MO)	I		I									I		
Develop an awareness of cultural factors that necessitate adapting standard exam protocols. (MO)	I		I									I		I
Demonstrate proper use of positioning aids. (MO)	P													
Analyze images to determine the appropriate use of beam restriction. (MO)	I		I									I		
Adapt radiographic procedures for special considerations and specific clinical situations. (MO)	I		I									I		
Simulate radiographic procedures on a person or phantom in a laboratory setting. (MO)	I													
Modify directions to patient with various communication problems. (MO)		I	I								I			
Evaluate images for positioning, centering, appropriate anatomy and overall image quality. (MO)	I		I									I		

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Course:RAD61C	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
The student will perform the appropriate processing functions required to produce a diagnostic image. (SLO)	P		P									P		
The student will select image receptor and/or grid combinations appropriate for the part being examined. (SLO)	P		P									P		
The student will identify an optimal diagnostic image of the foot. (SLO)	P		P									P		
Identify the structures demonstrated on routine radiographic images to include bones, bony processes and bony depressions. (MO)	I		I									I		
Apply general radiation safety and protection practices associated with radiographic examinations. (MO)	P		P									P		
Determine corrective measures to improve inadequate images. (MO)	P		P									P		
Use lead markers on the image receptor to indicate body position and/or time. (MO)	P													
Use personnel and radiation protection measures warranted by each exam. (MO)	P		P									P		
Operate the beam restrictor to limit radiation exposure and improve image quality. (MO)	P		P									P		
Demonstrate all positioning methods and produce diagnostic images of the upper and lower limbs, chest and abdomen. (MO)	P		P									P		
Operate radiographic equipment and proper use of positioning aids. (MO)	P		P									P		

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Course: RAD61C (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Practice darkroom procedures resulting in radiographs of suitable quality. (MO)	P													
Position the phantom and image receptor to achieve accurate demonstrations of the affected body part. (MO)	P		P									P		
Select image receptor and/or grid combinations appropriate for the part being examined and technical factors to produce quality diagnostic images with the lowest radiation exposure possible. (MO)	P		P									P		
Assess patient considerations to determine specific needs of the patient, instructions, and/or possible adaptation to standard radiographic procedures. (MO)	P	P	P								P	P		P
Critique images for appropriate anatomy, accuracy of positioning, centering, marker placement, beam restriction, patient identification and overall image quality. (MO)	P		P									P		

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Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 1A	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Explain how a person's cultural beliefs toward illness and health affect his or her health status. (MO)	I	I	I	I							I	I	I	I
Recognize life-threatening electrocardiogram (ECG) tracing. (MO)	I	I	I	I							I	I		I
Adhere to team practice concepts that focus on organizational theories, roles of team members, conflict resolution and principles of interpersonal relationships. (MO)	I	I	I	I							I	I		I
Adhere to national, institutional and departmental standards, policies and procedures regarding care of patients, providing radiologic procedures and reducing medical errors. (MO)	I	I	I	I							I	I	I	I
Execute medical imaging procedures under the appropriate level of supervision. (MO)	I	I	I	I							I	I		I
Provide psychosocial support and patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture. (MO)	I	I	I	I							I	I	I	I
Integrate the use of appropriate and effective written, oral and nonverbal communication with patient, the public and members of the healthcare team in the clinical setting while maintaining patient confidentiality standards and meeting HIPAA requirements. (MO)	I	I	I	I							I	I	I	I
Integrate appropriate personal and professional values with patient care by adhering to the Radiographers Practice Standards and Standards of Ethics. (MO)	I	I	I	I							I	I	I	I

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Course: RAD 1A (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Respond appropriately to medical emergencies and describe the role of healthcare team members in responding to a local or national emergency. (MO)	I	I	I	I							I	I		I
Comply with departmental and institutional policies, regarding response to emergencies, disasters and accidents. (MO)	I	I	I	I							I	I	I	I
Apply standard and transmission-based precautions, appropriate medical asepsis, and sterile technique. (MO)	I	I	I	I							I	I	I	I
Apply the principles of total quality management to include assessment, analysis, education, performance, evaluation, implementation, outcomes measurement, and documentation of quality performance standards. (MO)	I	I	I	I							I	I		I
Demonstrate competency in the principles of radiation protection standards and use personnel and radiation protection measures each exam warrants. (MO)	I	I	I	I							I	I	I	I
Demonstrate competency in operating radiographic equipment and report equipment malfunctions. (MO)	I	I	I	I							I	I	I	I
Demonstrate safe, ethical, and legal practices. (MO)	I	I	I	I							I	I	I	I
Demonstrate the principles of assisting, transporting, transferring, positioning and immobilizing patients with standard patient care and management procedures. (MO)	I	I	I	I							I	I		I
Demonstrate professional work habits. (MO)	I	I	I	I							I	I	I	I

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Course: RAD 1A (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Demonstrate competency in at least 4 of the following mandatory radiographic examinations: thumb, finger, wrist, forearm, elbow, humerus, trauma upper extremity, shoulder, trauma shoulder, foot, ankle, tibia, fibula, knee, femur, trauma lower extremity, pelvis, hip, portable orthopedic, cross-table lateral hip, routine chest, decubitus chest, portable chest, wheelchair or stretcher AP chest, pediatric chest, supine abdomen, upright abdomen, decubitus abdomen, or portable abdomen. (MO)	I	I	I	I							P	P	P	P
Demonstrate competency in the use of picture archival and communications system (PACS) and recognize common problems associated with retrieving or viewing images within PACS. (MO)	I	I	I	I							I	I		I
Integrate the radiographer's practice standards into clinical practice setting. (MO)	I	I	I	I							I	I	I	I
Practice darkroom procedures resulting in radiographs of suitable quality. (MO)	I	I	I	I							I	I		I
Position the patient and image receptor to achieve accurate demonstration of the affected body part. (MO)	I	I	I	I							I	I	I	I
Operate the beam restrictor to limit radiation exposure and improve image quality. (MO)	I	I	I	I							I	I	I	I
Use lead markers on the image receptor to indicate body position and/or time. (MO)	I	I	I	I							I	I		I

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SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Use patient and family education strategies appropriate to the comprehension level of the patient or family. (MO)	I	I	I	I							I	I	I	I
Determine corrective measures to improve inadequate images. (MO)	I	I	I	I							I	I		I
Recognize abnormal lab values relative to the imaging study ordered. (MO)	I	I	I	I							I	I	I	I
Assess the patient, record clinical history, and demonstrate competent assessment skills through effective management of the patient's physical and mental status (MO)	I	I	I	I							I	I	I	I
Adapt procedures to meet age-specific, disease-specific and cultural needs of patients. (MO)	I	I	I	I							I	I	I	I
Select image receptor and/or grid combinations appropriate for the part being examined and technical factors to produce quality diagnostic images with the lowest radiation exposure possible. (MO)	I	I	I	I							I	I	I	I
Critique images for appropriate anatomy, accuracy of positioning, image quality and patient identification. (MO)	I	I	I	I							I	I	I	I
The student will demonstrate proper use of lead markers. (SLO)	I	I	I	I							I	I	I	I
The student will demonstrate effective oral communication skills in the clinical setting. (SLO)	I	I	I	I							I	I	I	I
The student will properly position the affected body part and image receptor. (SLO)	I	I	I	I							I	I	I	I
The student will operate the beam restrictor (collimator) to limit patient exposure. (SLO)	I	I	I	I							I	I	I	I

Key for Level of Learning
(Use for Mapping SLOs/MOs to PLOs to ILOs)
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M = Knowledge/Skill Mastered

Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD1B	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
The student will demonstrate proper patient care techniques. (SLO)	P			P							P	P		P
The student will observe and assess patient's condition. (SLO)	P		P									P		
The student will accurately position the body part for optimal imaging. (SLO)	P		P									P		
Explain how a person's cultural beliefs toward illness and health affect his or her health status. (MO)	I	I									I			I
Recognize life-threatening electrocardiogram (ECG) tracing. (MO)	P		P									P		
Adhere to team practice concepts that focus on organizational theories, roles of team members, conflict resolution and principles of interpersonal relationships. (MO)	P			P										P
Adhere to national, institutional and departmental standards, policies and procedures regarding care of patients, providing radiologic procedures and reducing medical errors. (MO)	P			P										P
Execute medical imaging procedures under the appropriate level of supervision. (MO)	P			P										
Provide psychosocial support and patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture. (MO)	P			P										P

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD1B (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Integrate the use of appropriate and effective written, oral and nonverbal communication with patient, the public and members of the healthcare team in the clinical setting while maintaining patient confidentiality standards and meeting HIPAA requirements. (MO)	P	P		P							P			P
Integrate appropriate personal and professional values with patient care by adhering to the Radiographers Practice Standards and Standards of Ethics. (MO)	P			P										P
Respond appropriately to medical emergencies and describe the role of healthcare team members in responding to a local or national emergency. (MO)	P	P	P	P							P	P		
Comply with departmental and institutional policies, regarding response to emergencies, disasters and accidents. (MO)	P		P	P								P		
Apply standard and transmission-based precautions, appropriate medical asepsis, and sterile technique. (MO)	P		P	P								P		
Apply the principles of total quality management to include assessment, analysis, education, performance, evaluation, implementation, outcomes measurement, and documentation of quality performance standards. (MO)	P	P	P	P							P	P		
Demonstrate competency in the principles of radiation protection standards and use personnel and radiation protection measures each exam warrants. (MO)	P		P	P								P		

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD1B (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Demonstrate competency in operating radiographic equipment and report equipment malfunctions. (MO)	P		P									P		
Demonstrate safe, ethical, and legal practices. (MO)	P			P										P
Demonstrate the principles of assisting, transporting, transferring, positioning and immobilizing patients with standard patient care and management procedures. (MO)	P			P								P		
Demonstrate professional work habits. (MO)	P			P										P
Demonstrate competency in at least 2 of the following mandatory radiographic examinations not previously completed: thumb, finger, wrist, forearm, elbow, humerus, trauma upper extremity, shoulder, trauma shoulder, foot, ankle, tibia, fibula, knee, femur, trauma lower extremity, pelvis, hip, portable orthopedic, cross-table lateral hip, routine chest, decubitus chest, portable chest, wheelchair or stretcher AP chest, pediatric chest, supine abdomen, upright abdomen, decubitus abdomen, or portable abdomen. (MO)	P		P									P		
Demonstrate competency in the use of picture archival and communications system (PACS) and recognize common problems associated with retrieving or viewing images within PACS. (MO)	P		P										P	
Integrate the radiographer's practice standards into clinical practice setting. (MO)	P			P										P
Practice darkroom procedures resulting in radiographs of suitable quality. (MO)	P		**P**									P		

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD1B (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Position the patient and image receptor to achieve accurate demonstration of the affected body part. (MO)	P		P									P		
Operate the beam restrictor to limit radiation exposure and improve image quality. (MO)	P		P									P		
Use lead markers on the image receptor to indicate body position and/or time. (MO)	P													
Use patient and family education strategies appropriate to the comprehension level of the patient or family. (MO)	P	P									P			
Determine corrective measures to improve inadequate images. (MO)	P		P									P		
Recognize abnormal lab values relative to the imaging study ordered. (MO)	P		P									P		
Examine demographic factors that influence patient compliance with medical care. (MO)	P													P
Examine procedure orders for accuracy and make corrective actions when applicable. (MO)	P		P									P		
Differentiate between emergency and non-emergency procedures. (MO)	P		P									P		
Assess the patient, record clinical history, and demonstrate competent assessment skills through effective management of the patient's physical and mental status. (MO)	P		P									P		
Adapt procedures to meet age-specific, disease-specific and cultural needs of patients. (MO)	P		P									P		P

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD1B (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Select image receptor and/or grid combinations appropriate for the part being examined and technical factors to produce quality diagnostic images with the lowest radiation exposure possible. (MO)	P		P									P		
Critique images for appropriate anatomy, accuracy of positioning, image quality and patient identification. (MO)	P		P									P		

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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 62A	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Identify factors that affect the x-ray emission spectra. (MO)	I		I								I	I		
Explain the relationship of beam-limiting devices to patient radiation protection. (MO)	I	I	I								I	I	I	
Discuss various photon interactions with matter by describing the interaction, relation to atomic number, photon energy, and part density, and their applications in diagnostic radiology. (MO)	I		I								I	I		
Discuss the various types of imaging equipment. (MO)	I		I								I	I		
Discuss the radiographic imaging process. (MO)	I		I								I	I		
Describe how beam filtration affects x-ray beam intensity, beam quality, and patient exposure. (MO)	I	I	I								I	I	I	
Describe the change in the half value layer (HVL) when filtration is added or removed in the beam. (MO)	I	I	I								I	I	I	
Describe the x-ray emission spectra. (MO)	I	I	I								I	I		
Differentiate between size and shape distortion. (MO)	I		I								I	I		
Summarize the relationship of factors affecting exposure latitude. (MO)	I		I								I	I		
Summarize the relationship of factors affecting scattered and secondary radiation. (MO)	I		I								I	I	I	
Summarize the relationship of factors that control and affect distortion. (MO)	I		I								I	I		
Summarize the factors that influence grid cutoff. (MO)	I		I								I	I		
Apply the process for evaluating images for adequate density, brightness, contrast, recorded detail, spatial resolution, and distortion. (MO)	I		I								I	I		

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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 62 A (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Apply problem solving techniques to the functions of components of automatic exposure control (AEC) devices. (MO)	I		I								I	I	I	
Apply the appropriate method of shielding for a given radiographic procedure. (MO)	I		I								I	I	I	
Interpret grid efficiency in terms of grid ratio and frequency. (MO)	I		I								I	I		
Demonstrate proper use of AEC device. (MO)	I		I								I	I	I	
Analyze the relationship of factors that control and affect radiographic contrast. (MO)	I	I	I								I	I		
Analyze the relationship of factors that control and affect recorded detail. (MO)	I	I	I								I	I		
Compare grid types. (MO)	I		I								I	I		
Compare the x-ray production of bremsstrahlung and characteristic radiations. (MO)	I		I								I	I		
Evaluate grid artifacts. (MO)	I		I								I	I		
The student will describe methods of how x-rays interact with matter. (SLO)	I		I								I	I		
The student will identify the path of travel in the processor and describe the chemicals and their functions. (SLO)	I	I	I								I	I		
The student will be able to identify how beam filtration affects x-ray beam intensity, beam quality, and patient exposure. (SLO)	I		I								I	I		
The student will identify magnification, general distortion, spatial distortion, and subject or technique factors on radiographic images. (SLO)	I		I								I	I		

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD62B	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
The student will describe accurate positioning methods for the vertebral column. (SLO)	I	I	I								I	I		
The student will describe accurate positioning methods for general skull projections. (SLO)	I	I	I								I	I		
Identify anatomy as it relates to radiographic positioning for the skull. (SLO)	I		I									I		
Identify anatomy as it relates to radiographic positioning of the thorax. (SLO)	I		I									I		
Identify methods and barriers of communication and describe how each may be used or overcome effectively during patient education. (MO)		I									I			
Identify the structures demonstrated on routine radiographic images to include bones, bony processes and bony depressions. (MO)	I		I									I		
Explain radiographic procedures to patients and/or family members. (MO)		I									I			
Explain routine positions and projections for radiographic procedures of the vertebral column, bony thorax, cranium, gastrointestinal (GI) system and genitourinary (GU) system. (MO)	I	I									I			
Describe standard positioning terms. (MO)	I	I									I			
Describe the general purpose of radiographic studies. (MO)	I	I									I			
Discuss equipment and supplies necessary to complete basic radiographic procedures. (MO)	I	I									I			
Discuss general procedural considerations and patient considerations for radiographic exams. (MO)	I	I									I			

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD62B (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Discuss the impact of patient preparation on the resulting radiographic image. (MO)	I	I	I								I	I		
Summarize the importance of proper positioning. (MO)	I	I									I			
Apply general radiation safety and protection practices associated with radiographic examinations. (MO)	I											I		
Develop an awareness of cultural factors that necessitate adapting standard exam protocols. (MO)	I		I									I		I
Properly use of positioning aids. (MO)	P													
Analyze images to determine the appropriate use of beam restriction. (MO)	I		I									I		
Adapt radiographic procedures for special consideration and specific clinical situations. (MO)	I		I									I		
Simulate radiographic procedures on a person or phantom in a laboratory setting. (MO)	P													
Modify directions to patient with various communication problems. (MO)		P	P								I			
Evaluate images for positioning, centering, appropriate anatomy and overall image quality. (MO)	I		I									I		

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD62C	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
The student will produce a diagnostic image of unilateral ribs in AP position. (SLO)	P		P									P		
The student will identify anatomy on radiographs of the vertebral column. (SLO)	P		P									P		
The student will identify an optimal diagnostic image of a PA skull. (SLO)	P		P									P		
Identify the structures demonstrated on routine radiographic images to include organs, bones, bony processes and bony depressions. (MO)	I		I									I		
Apply general radiation safety and protection practices associated with radiographic examinations. (MO)	P		P									P		
Implement corrective measures to improve inadequate images. (MO)	P		P									P		
Use lead markers on the image receptor to indicate body position and/or time. (MO)	P													
Use personnel and radiation protection measures each exam warrants. (MO)	P		P									P		
Operate the beam restrictor to limit radiation exposure and improve image quality. (MO)	P		P									P		
Demonstrate all positioning methods and produce diagnostic images of the vertebral column, bony thorax, cranium, gastrointestinal (GI) system, and genitourinary (GU) system. (MO)	P		P									P		
Demonstrate competency in operating radiographic equipment and proper use of positioning aids. (MO)	P		P									P		
Practice darkroom procedures resulting in radiographs of suitable quality. (MO)	P													

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD62C (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Position the phantom and image receptor to achieve accurate demonstrations of the affected body part. (MO)	P		P									P		
Select image receptor and/or grid combinations appropriate for the part being examined and technical factors to produce quality diagnostic images with the lowest radiation exposure possible. (MO)	P		P									P		
Assess patient considerations to determine specific needs of the patient, instructions, and/or possible adaptation to standard radiographic procedures. (MO)	P	P	P								P	P		P
Critique images for appropriate anatomy, accuracy of positioning, centering, marker placement, patient identification and overall image quality. (MO)	P		P									P		

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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 2A	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Explain how a person's cultural beliefs toward illness and health affect his or her health status. (MO)	P	P	P	P							P	P	P	P
Recognize life-threatening electrocardiogram (ECG) tracing. (MO)	P	P	P	P							P	P		P
Adhere to team practice concepts that focus on organizational theories, roles of team members, conflict resolution and principles of interpersonal relationships. (MO)	P	P	P	P							P	P		P
Adhere to national, institutional and departmental standards, policies and procedures regarding care of patients, providing radiologic procedures and reducing medical errors. (MO)	P	P	P	P							P	P	P	P
Execute medical imaging procedures under the appropriate level of supervision. (MO)	P	P	P	P							P	P		P
Provide psychosocial support and patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture. (MO)	P	P	P	P							P	P	P	P
Integrate the use of appropriate and effective written, oral and nonverbal communication with patient, the public and members of the healthcare team in the clinical setting while maintaining patient confidentiality standards and meeting HIPAA requirements. (MO)	P	P	P	P							P	P	P	P
Integrate appropriate personal and professional values on patient care by adhering to the Radiographers Practice Standards and Standards of Ethics. (MO)	P	P	P	P							P	P	P	P

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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 2A	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Respond appropriately to medical emergencies and describe the role of healthcare team members in responding to a local or national emergency. (MO)	P	P	P	P							P	P		P
Comply with departmental and institutional response to emergencies, disasters and accidents. (MO)	P	P	P	P							P	P	P	P
Apply standard and transmission-based precautions, appropriate medical asepsis, and sterile technique. (MO)	P	P	P	P							P	P	P	P
Apply the principles of total quality management to include assessment, analysis, education, performance, evaluation, implementation, outcomes measurement, and documentation of quality performance standards. (MO)	P	P	P	P							P	P		P
Demonstrate competency in the principles of radiation protection standards and use personnel and radiation protection measures each exam warrants. (MO)	P	P	P	P							P	P	P	P
Demonstrate competency in operating radiographic equipment and report equipment malfunctions. (MO)	P	P	P	P							P	P	P	P
Demonstrate safe, ethical, and legal practices. (MO)	P	P	P	P							P	P	P	P
Demonstrate the principles of assisting, transporting, transferring, positioning and immobilizing patients with standard patient care and management procedures. (MO)	P	P	P	P							P	P		P
Demonstrate safe, ethical, and legal practices. (MO)	P	P	P	P							P	P	P	P

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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 2A (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Demonstrate the principles of assisting, transporting, transferring, positioning and immobilizing patients with standard patient care and management procedures. (MO)	P	P	P	P							P	P		P
Demonstrate professional work habits. (MO)	P	P	P	P							P	P	P	P
Demonstrate competency in at least 4 of the following mandatory radiographic examinations: cervical spine, cross-table trauma cervical spine, thoracic spine, lumbar spine, ribs, paranasal sinuses, esophagus, upper gastrointestinal, small bowel or barium enema. (MO)	I	I	I	I							I	I	I	I
Demonstrate competency in the use of picture archival and communications system (PACS) and recognize common problems associated with retrieving or viewing images within PACS. (MO)	P	P	P	P							P	P		P
Integrate the radiographer's practice standards into clinical practice setting. (MO)	P	P	P	P							P	P	P	P
Practice darkroom procedures resulting in radiographs of suitable quality. (MO)	P	P	P	P							P	P		P
Position the patient and image receptor to achieve accurate demonstration of the affected body part. (MO)	P	P	P	P							P	P	P	P
Operate the beam restrictor to limit radiation exposure and improve image quality. (MO)	P	P	P	P							P	P	P	P
Use lead markers on the image receptor to indicate body position and/or time. (MO)	P	P	P	P							P	P		P

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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 2A (continued)	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Use patient and family education strategies appropriate to the comprehension level of the patient or family. (MO)	P	P	P	P							P	P	P	P
Inquire if a patient has a medical condition or allergy that would contraindicate the use of contrast media before the introduction of contrast and assist the physician in administration of contrast as required by each radiographic procedure. (MO)	I	I	I	I							I	I		I
Recognize abnormal lab values relative to the imaging study ordered. (MO)	P	P	P	P							P	P	P	P
Determine corrective measures to improve inadequate images. (MO)	P	P	P	P							P	P		P
Examine demographic factors that influence patient compliance with medical care. (MO)	P	P	P	P							P	P	P	P
Examine procedure orders for accuracy and make corrective actions when applicable. (MO)	P	P	P	P							P	P	P	P
Differentiate between emergency and non-emergency procedures. (MO)	P	P	P	P							P	P		P
Assess the patient, record clinical history, and demonstrate competent assessment skills through effective management of the patient's physical and mental status. (MO)	P	P	P	P							P	P	P	P
Adapt procedures to meet age-specific, disease-specific and cultural needs of patients. (MO)	P	P	P	P							P	P	P	P

Key for Level of Learning
(Use for Mapping SLOs/MOs to PLOs to ILOs)
I = Knowledge/Skill Introduced
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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 2A (continued)	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Respond appropriately to medical emergencies and describe the role of healthcare team members in responding to a local or national emergency. (MO)	P	P	P	P							P	P		P
Comply with departmental and institutional response to emergencies, disasters and accidents. (MO)	P	P	P	P							P	P	P	P
Apply standard and transmission-based precautions, appropriate medical asepsis, and sterile technique.	P	P	P	P							P	P	P	P
Apply the principles of total quality management to include assessment, analysis, education, performance, evaluation, implementation, outcomes measurement, and documentation of quality performance standards. (MO)	P	P	P	P							P	P		P
Select image receptor and/or grid combinations appropriate for the part being examined and technical factors to produce quality diagnostic images with the lowest radiation exposure possible. (MO)	P	P	P	P							P	P	P	P
Critique images for appropriate anatomy, accuracy of positioning, image quality and patient identification. (MO)	P	P	P	P							P	P	P	P
The student will demonstrate advanced-level competency on radiographic examinations. (SLO)	P	P	P	P							P	P	P	P
The student will be able to explain radiographic procedures to patients completely and clearly. (SLO)	P	P	P	P							P	P	P	P
The student will select technical factors appropriate for the part examined to produce a diagnostic image. (SLO)	P	P	P	P							P	P	P	P

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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 2B	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Explain how a person's cultural beliefs toward illness and health affect his or her health status. (MO)	P	P	P	P							P	P	P	P
Recognize life-threatening electrocardiogram (ECG) tracing. (MO)	P	P	P	P							P	P		P
Adhere to team practice concepts that focus on organizational theories, roles of team members, conflict resolution and principles of interpersonal relationships. (MO)	P	P	P	P							P	P		P
Adhere to national, institutional and departmental standards, policies and procedures regarding care of patients, providing radiologic procedures and reducing medical errors. (MO)	P	P	P	P							P	P	P	P
Execute medical imaging procedures under the appropriate level of supervision. (MO)	P	P	P	P							P	P		P
Provide psychosocial support and patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture. (MO)	P	P	P	P							P	P	P	P
Integrate the use of appropriate and effective written, oral and nonverbal communication with patient, the public and members of the healthcare team in the clinical setting while maintaining patient confidentiality standards and meeting HIPAA requirements. (MO)	P	P	P	P							P	P	P	P
Integrate appropriate personal and professional values on patient care by adhering to the Radiographers Practice Standards and Standards of Ethics. (MO)	P	P	P	P							P	P	P	P

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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 2B	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Respond appropriately to medical emergencies and describe the role of healthcare team members in responding to a local or national emergency. (MO)	P	P	P	P							P	P		P
Comply with departmental and institutional response to emergencies, disasters and accidents. (MO)	P	P	P	P							P	P	P	P
Recognize life-threatening electrocardiogram (ECG) tracing. (MO)	P	P	P	P							P	P		P
Apply standard and transmission-based precautions, appropriate medical asepsis, and sterile technique. (MO)	P	P	P	P							P	P	P	P
Apply the principles of total quality management to include assessment, analysis, education, performance, evaluation, implementation, outcomes measurement, and documentation of quality performance standards. (MO)	P	P	P	P							P	P		P
Demonstrate competency in the principles of radiation protection standards and use personnel and radiation protection measures each exam warrants. (MO)	P	P	P	P							P	P	P	P
Demonstrate competency in operating radiographic equipment and report equipment malfunctions. (MO)	P	P	P	P							P	P	P	P

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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 2B (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Demonstrate safe, ethical, and legal practices. (MO)	P	P	P	P							P	P	P	P
Demonstrate the principles of assisting, transporting, transferring, positioning and immobilizing patients with standard patient care and management procedures. (MO)	P	P	P	P							P	P		P
Demonstrate professional work habits. (MO)	P	P	P	P							P	P	P	P
Demonstrate competency in at least 2 of the following mandatory radiographic examinations not previously completed: cervical spine, cross-table trauma cervical spine, thoracic spine, lumbar spine, ribs, paranasal sinuses, esophagus, upper gastrointestinal, small bowel or barium enema. (MO)	P	P	P	P							P	P	P	P
Demonstrate competency in the use of picture archival and communications system (PACS) and recognize common problems associated with retrieving or viewing images within PACS. (MO)	P	P	P	P							P	P		P
Integrate the radiographer's practice standards into clinical practice setting. (MO)	P	P	P	P							P	P	P	P
Practice darkroom procedures resulting in radiographs of suitable quality (MO)	P	P	P	P							P	P		P
Position the patient and image receptor to achieve accurate demonstration of the affected body part. (MO)	P	P	P	P							P	P	P	P
Operate the beam restrictor to limit radiation exposure and improve image quality. (MO)	P	P	P	P							P	P	P	P
Use lead markers on the image receptor to indicate body position and/or time. (MO)	P	P	P	P							P	P		P

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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 2B (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Use patient and family education strategies appropriate to the comprehension level of the patient or family. (MO)	P	P	P	P							P	P	P	P
Inquire if a patient has a medical condition or allergy that would contraindicate the use of contrast media before the introduction of contrast and assist the physician in administration of contrast as required by each radiographic procedure. (MO)	P	P	P	P							P	P		P
Recognize abnormal lab values relative to the imaging study ordered. (MO)	P	P	P	P							P	P	P	P
Determine corrective measures to improve inadequate images. (MO)	P	P	P	P							P	P		P
Examine demographic factors that influence patient compliance with medical care. (MO)	P	P	P	P							P	P	P	P
Examine procedure orders for accuracy and make corrective actions when applicable. (MO)	P	P	P	P							P	P	P	P
Differentiate between emergency and non-emergency procedures. (MO)	P	P	P	P							P	P		P
Assess the patient, record clinical history, and demonstrate competent assessment skills through effective management of the patient's physical and mental status. (MO)	P	P	P	P							P	P	P	P
Adapt procedures to meet age-specific, disease-specific and cultural needs of patients. (MO)	P	P	P	P							P	P	P	P

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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 2B (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Select image receptor and/or grid combinations appropriate for the part being examined and technical factors to produce quality diagnostic images with the lowest radiation exposure possible. (MO)	P	P	P	P							P	P	P	P
Critique images for appropriate anatomy, accuracy of positioning, image quality and patient identification. (MO)	P	P	P	P							P	P	P	P
The student will demonstrate proper aseptic and sterile technique. (SLO)	P	P	P	P							P	P	P	P
The student will accurately assess patient condition for every radiographic procedure. (SLO)	P	P	P	P							P	P	P	P
The student will be able to select technical factors appropriate for the body part being radiographed. (SLO)	P	P	P	P							P	P	P	P

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 30	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
The student will correctly identify anatomy shown on a chest x-ray image. (SLO)	P				P								P	
The student will identify various fractures. (SLO)	P				P								P	
The student will identify pathology presented on radiographic images. (SLO)	P				P								P	
Identify imaging procedures and interventional techniques appropriate for diseases common to each body system. (MO)	P		P										P	
Identify diseases caused by or contributed to by genetic factors. (MO)	I												I	
Identify complications connected with the repair and replacement of tissue. (MO)	I												I	
List the causes of tissue disruption. (MO)	I												I	
Define basic terms related to pathology. (MO)	I												I	
Describe the basic manifestations of pathological conditions and their relevance to radiologic procedures. (MO)		P	P									P		
Describe imaging procedures used in diagnosing disease. (MO)		P	P		P							P		
Describe the healing process. (MO)	P												P	
Describe the various systemic classifications of disease in terms of etiology, types, common sites, complications and prognosis. (MO)	I				P						I			
Describe the radiographic appearance of diseases. (MO)	P		P		P							P	P	
Discuss the classifications of trauma. (MO)		P									P			
Develop technique charts presenting factor adjustments for various pathologies. (MO)			P		M							P		M

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)													
Course: RAD 63	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.												
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3
The students will be able outline basic emergency care for patients with a contrast media reaction. (SLO)	P		P		P							P	P
List common contrast medias, their indicated use and contraindications to their use. (MO)	I										P		P
Outline basic emergency care given to the patient with a contrast media reaction. (MO)	I		P									P	
Explain how equipment and protective devices are used to reduce exposure to personnel and patients during ionizing exposures. (MO)	P		P								P	P	
Identify specific structures visualized on various radiographic images. (MO)	P												P
Identify drugs used to counteract reactions to contrast medias. (MO)	I	M										M	P
Discuss special radiographic procedures in terms of general description, patient preparation, contrast media usage and imaging equipment. (MO)	I		P								P		P
Design a sample radiation protection program for a radiology department. (MO)		P			M						P		
Summarize education and training requirements for the additional modalities of computed tomography, radiation therapy, magnetic resonance imaging, nuclear medicine, ultrasonography, mammography, bone densitometry, and interventional radiography. (MO)				I							P		P
Evaluate film automatic processor quality control tests and assess film contrast, speed, and base + fog density. (MO)	P		P									P	P

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 3A	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
The student will clearly and thoroughly explain radiology examinations to patients and knowledgeably answer questions. (SLO)		P	P								P	P		
Explain how a person's cultural beliefs toward illness and health affect his or her health status. (MO)		P	P									P		P
Recognize life-threatening electrocardiogram (ECG) tracing. (MO)	P		P									P	P	
Adhere to team practice concepts that focus on organizational theories, roles of team members, conflict resolution and principles of interpersonal relationships. (MO)					P								P	
Adhere to national, institutional and departmental standards, policies and procedures regarding care of patients, providing radiologic procedures and reducing medical errors. (MO)					P								P	
Execute medical imaging procedures under the appropriate level of supervision. (MO)	P		P		P							P	P	
Provide psychosocial support and patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture. (MO)		P	P								P	P		
Integrate the use of appropriate and effective written, oral and nonverbal communication with patient, the public and members of the healthcare team in the clinical setting while maintaining patient confidentiality standards and meeting HIPAA requirements. (MO)		P	P								P	P		

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 3A (cont.)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Integrate appropriate personal and professional values on patient care by adhering to the Radiographers Practice Standards and Standards of Ethics. (MO)					P								P	
Respond appropriately to medical emergencies and describe the role of healthcare team members in responding to a local or national emergency. (MO)			P		P							P	P	P
Comply with departmental and institutional response to emergencies, disasters and accidents. (MO)			P		P							P	P	P
Apply standard and transmission-based precautions, appropriate medical asepsis, and sterile technique. (MO)					P								P	
Apply the principles of total quality management to include assessment, analysis, education, performance, evaluation, implementation, outcomes measurement, and documentation of quality performance standards. (MO)			P		P							P	P	
Demonstrate competency in the principles of radiation protection standards and use personnel and radiation protection measures each exam warrants. (MO)	P		P		P							P	P	
Demonstrate competency in operating radiographic equipment and report equipment malfunctions. (MO)	P		P		P							P	P	
Demonstrate safe, ethical, and legal practices. (MO)			P	P	P							P	P	P
Demonstrate the principles of assisting, transporting, transferring, positioning and immobilizing patients with standard patient care and management procedures. (MO)	P		P		P							P	P	

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 3A (cont.)	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Demonstrate professional work habits. (MO)				P										P
Demonstrate competency in at least 4 of the following mandatory radiographic examinations not previously completed: thumb, finger, wrist, forearm, elbow, humerus, trauma upper extremity, shoulder, trauma shoulder, foot, ankle, tibia, fibula, knee, femur, trauma lower extremity, pelvis, hip, portable orthopedic, cross-table lateral hip, routine chest, decubitus chest, portable chest, wheelchair or stretcher AP chest, pediatric chest, supine abdomen, upright abdomen, decubitus abdomen, portable abdomen, cervical spine, cross-table trauma cervical spine, thoracic spine, lumbar spine, ribs, paranasal sinuses, esophagus, upper gastrointestinal, small bowel, barium enema, operative cholangiogram, or orthopedic c-arm. (MO)	P		P		P							P	P	
Demonstrate competency in the use of picture archival and communications system (PACS) and recognize common problems associated with retrieving or viewing images within PACS. (MO)	P		P		P							P	P	
Integrate the radiographer's practice standards into clinical practice setting. (MO)	P				P								P	
Practice darkroom procedures resulting in radiographs of suitable quality. (MO)					P								P	
Position the patient and image receptor to achieve accurate demonstration of affected body part. (MO)	P		P		P							P	P	
Operate the beam restrictor to limit radiation exposure and improve image quality. (MO)	P				P								P	

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 3A (cont.)	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Use lead markers on the image receptor to indicate body position and/or time. (MO)	P				P								P	
Use patient and family education strategies appropriate to the comprehension level of the patient or family. (MO)		P	P		P						P	P		
Inquire if a patient has a medical condition or allergy that would contraindicate the use of contrast media before the introduction of contrast and assist the physician in administration of contrast as required by each radiographic procedure. (MO)		P	P		P						P	P		
Recognize abnormal lab values relative to the imaging study ordered. (MO)			P		P							P		
Determine corrective measures to improve inadequate images. (MO)	P		P		P							P	P	
Examine demographic factors that influence patient compliance with medical care. (MO)					P							P		
Examine procedure orders for accuracy and make corrective actions when applicable. (MO)			P		P							P		
Differentiate between emergency and non-emergency procedures. (MO)			P		P							P		
Assess the patient, record clinical history, and demonstrate competent assessment skills through effective management of the patient's physical and mental status. (MO)			P		P							P		
Adapt procedures to meet age-specific, disease-specific and cultural needs of patients. (MO)	P		P		P							P	P	

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 3A (cont.)	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Select image receptor and/or grid combinations appropriate for the part being examined and technical factors to produce quality diagnostic images with the lowest radiation exposure possible. (MO)	P		P		P							P	P	
Critique images for appropriate anatomy, accuracy of positioning, image quality and patient identification. (MO)	P		P		P							P		

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 32	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Relate the exposure indicator values to technical factors and patient exposure. (SLO)	P		P		P							P	P	
Describe the characteristics of digital images, specifically image matrix and dynamic range. (MO)	I												I	
Explain the functions and use of the various components found in digital imaging systems. (MO)	P										P		P	
Explain the process of image acquisition and image processing. (MO)	P										P		P	
Describe the parts of a digital fluoroscopic system and their functions. (MO)	I												I	
Describe the functions of picture archiving and teleradiology systems used in diagnostic imaging departments. (MO)	P												P	
Compare and contrast the use of digital modalities versus conventional modalities in imaging departments. (MO)	I		P									P	I	
Compare and contrast digital imaging technical factors with conventional film/screen techniques. (MO)	I		P									P	I	
Critique suboptimal digital images and perform reject analysis. (MO)			P		M							P		M

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD3B	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
The student will select proper technical factors (kVp & mAs). (SLO)	P		P									P		
Students will demonstrate effective oral communication skills in the clinical setting. (SLO)	P	P									P			
Explain how a person's cultural beliefs toward illness and health affect his or her health status. (MO)	P	P									P			P
Recognize life-threatening electrocardiogram (ECG) tracing. (MO)	P											P		
Adhere to team practice concepts that focus on organizational theories, roles of team members, conflict resolution and principles of interpersonal relationships. (MO)	P			P										P
Adhere to national, institutional and departmental standards, policies and procedures regarding care of patients, providing radiologic procedures and reducing medical errors. (MO)	P			P										P
Execute medical imaging procedures under the appropriate level of supervision. (MO)	P			P										
Provide psychosocial support and patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture. (MO)	P			P										P

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD3B (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Integrate the use of appropriate and effective written, oral and nonverbal communication with patient, the public and members of the healthcare team in the clinical setting while maintaining patient confidentiality standards and meeting HIPAA requirements. (MO)	P	P		P							P			P
Integrate appropriate personal and professional values with patient care by adhering to the Radiographers Practice Standards and Standards of Ethics. (MO)	P			P										P
Respond appropriately to medical emergencies and describe the role of healthcare team members in responding to a local or national emergency. (MO)	P	P		P							P	P		
Comply with departmental and institutional policies, regarding response to emergencies, disasters and accidents. (MO)	P		P	P								P		
Apply standard and transmission-based precautions, appropriate medical asepsis, and sterile technique. (MO)	P		P	P								P		
Apply the principles of total quality management to include assessment, analysis, education, performance, evaluation, implementation, outcomes measurement, and documentation of quality performance standards. (MO)	P	P	P	P							P	P		
Demonstrate competency in the principles of radiation protection standards and use personnel and radiation protection measures each exam warrants. (MO)	P		P	P								P		

Key for Level of Learning
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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD3B (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Demonstrate competency in operating radiographic equipment and report equipment malfunctions. (MO)	P		P									P		
Demonstrate safe, ethical, and legal practices. (MO)	P			P										P
Demonstrate the principles of assisting, transporting, transferring, positioning and immobilizing patients with standard patient care and management procedures. (MO)	P			P								P		
Demonstrate professional work habits. (MO)	P			P										P
Demonstrate competency in at least 2 of the following mandatory radiographic examinations not previously completed: thumb, finger, wrist, forearm, elbow, humerus, trauma upper extremity, shoulder, trauma shoulder, foot, ankle, tibia, fibula, knee, femur, trauma lower extremity, pelvis, hip, portable orthopedic, cross-table lateral hip, routine chest, decubitus chest, portable chest, wheelchair or stretcher AP chest, pediatric chest, supine abdomen, upright abdomen, decubitus abdomen, portable abdomen, cervical spine, cross-table trauma cervical spine, thoracic spine, lumbar spine, ribs, paranasal sinuses, esophagus, upper gastrointestinal, small bowel, barium enema, operative cholangiogram, or orthopedic c-arm**.** (MO)	P		P									P		
Demonstrate competency in the use of picture archival and communications system (PACS) and recognize common problems associated with retrieving or viewing images within PACS. (MO)	P		P										P	

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD3B (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Integrate the radiographer's practice standards into clinical practice setting. (MO)	P			P										P
Practice darkroom procedures resulting in radiographs of suitable quality. (MO)	P		P									P		
Position the patient and image receptor to achieve accurate demonstration of the affected body part. (MO)	P		P									P		
Operate the beam restrictor to limit radiation exposure and improve image quality. (MO)	P											P		
Use lead markers on the image receptor to indicate body position and/or time. (MO)	P													
Use patient and family education strategies appropriate to the comprehension level of the patient or family. (MO)	P	P									P			
Inquire if a patient has a medical condition or allergy that would contraindicate the use of contrast media before the introduction of contrast and assist the physician in administration of contrast as required by each radiographic procedure. (MO)	P	P	P									P		
Determine corrective measures to improve inadequate images. (MO)	P		P									P		
Recognize abnormal lab values relative to the imaging study ordered. (MO)	P		P									P		
Examine demographic factors that influence patient compliance with medical care. (MO)	P													P
Examine procedure orders for accuracy and make corrective actions when applicable. (MO)	P		P									P		

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD3B (continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Differentiate between emergency and non-emergency procedures. (MO)	P		P									P		
Assess the patient, record clinical history, and demonstrate competent assessment skills through effective management of the patient's physical and mental status. (MO)	P		P									P		
Adapt procedures to meet age-specific, disease-specific and cultural needs of patients. (MO)	P		P									P		P
Select image receptor and/or grid combinations appropriate for the part being examined and technical factors to produce quality diagnostic images with the lowest radiation exposure possible. (MO)	P		P									P		
Critique images for appropriate anatomy, accuracy of positioning, image quality and patient identification. (MO)	P		P									P		

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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 31	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Identify types and sources of ionizing radiation exposure to include electromagnetic radiation, particulate radiation, natural sources, and man-made sources. (MO)	I		I								I	I		
Identify methods to measure radiation response and use a dose response curve to study the relationship between radiation dose levels and the degree of biologic response. (MO)	I	I	I								I	I		
Relate short term and long term effects as a consequence of high and low radiation doses and examine the effects of limited versus total body exposure recognizing the clinical significance of lethal dose. (MO)	I		I								I	I		
Recognize and report fluoroscopic equipment malfunctions to maintain quality control. (MO)	I		I									I		
Explain the relationship of exposure factors to patient dose and describe the importance of the as low as reasonably achievable (ALARA) concept. (MO)	I	I	I								I	I	I	
Describe the principles of cellular biology and identify specific cells from most radiosensitive to least radiosensitive. (MO)	I	I	I								I	I		
Describe radiation induced chemical reactions, potential biologic damage, and factors influencing radiation response and radiosensitivity of cells and tissues such as physical, chemical, and biologic factors. (MO)	I	I	I								I	I		
Describe the components of the fluoroscopic unit to include image intensifier construction, intensification	I	I	I								I	I	I	

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principles and characteristics, viewing systems, recording systems, image display factors such as digital imaging and communications in medicine (DICOM). (MO)														
Describe principles to minimize personnel radiation exposure including sources of radiation exposure, methods of radiation protection, protective devices, NCRP regulations and recommendations, units of measurement, and dosimeter use. (MO)	I	I	I								I	I	I	
Describe the function of federal, state, and local regulations governing radiation protection practices and describe the requirements for and responsibilities of a radiation safety officer. (MO)	I	I	I								I	I	I	
Describe personnel monitoring devices, including applications, advantages, limitations for each device, importance of personnel monitoring and interpretation of personnel monitoring reports. (MO)	I	I	I								P	P	P	
Describe the theory and operation of radiation detection devices and identify applications and limitations for each radiation detection device. (MO)	I	I	I								I	I		
Discuss physics of radiation related to photon interactions with matter, x-ray production, and the x-ray beam. (MO)	I		I								P	P		
Apply and explain the rationale for radiation safety and protection practices including technical factor selection, shielding, beam restriction, filtration, equipment features, pediatric dose reduction, and patient positioning to minimize patient radiation exposure. (MO)	I	I	I								P	P	P	

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Outcomes Mapping

Student Learning Outcomes (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 31 (Continued)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5						ILO 1	ILO 2	ILO 3	ILO 4
Apply principles of patient care and education, and describe the function of picture archival and communication systems (PACS) to improve patient care. (MO)	I	I	I								P	P		
Differentiate between ionic and covalent molecular bonds. (MO)	I		I								P	P		
Differentiate between somatic, genetic, embryo and fetal effects of radiation exposure, discuss specific diseases associated with them, and discuss the risk estimates for radiation induced malignancies. (M0)	I		I								I	I		
Discriminate between direct and indirect effects of ionizing radiation. (MO)	I		I								I	I		
Evaluate factors influencing radiobiologic and biophysical events at the cellular and subcellular level. (MO)	I		I								I	I		
Evaluate characteristics, image criteria, and technical factors of fluoroscopic images to determine a high quality diagnostic image and apply problem solving skills to correct inadequate images. (MO)	I		I								P	P		
The student will identify the structure and function of the image intensifier.(SLO)	I	I	I								P	P		
The student will identify the components of the fluoroscopy unit, including the image intensifier and viewing/recording system. (SLO)	I	I	I								I	I		
The student will identify radiation induced chemical reactions, potential biologic damage, & factors influencing radiation response/radiosensitivity of cells. (SLO)	I	I	I								I	I		

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 3C	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
The student will demonstrate effective team management while working with difficult patients. (SLO)		P	P	P	P						P	P		
The student has adequate knowledge of radiographic procedures and competently applies technical skills in clinical applications. (SLO)	P		P		P							P	P	
The student will practice sterile and/or aseptic technique as required by the type of radiographic procedure. (SLO)	P		P		P							P	P	
Explain how a person's cultural beliefs toward illness and health affect his or her health status. (MO)		P	P									P		P
Recognize life-threatening electrocardiogram (ECG) tracing. (MO)	P		P									P	P	
Adhere to team practice concepts that focus on organizational theories, roles of team members, conflict resolution and principles of interpersonal relationships. (MO)					P								P	
Adhere to national, institutional and departmental standards, policies and procedures regarding care of patients, providing radiologic procedures and reducing medical errors. (MO)					P								P	
Execute medical imaging procedures under the appropriate level of supervision. (MO)	P		P		P							P	P	
Provide psychosocial support and patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture. (MO)		P	P								P	P		

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 3C (cont.)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Integrate the use of appropriate and effective written, oral and nonverbal communication with patient, the public and members of the healthcare team in the clinical setting while maintaining patient confidentiality standards and meeting HIPAA requirements. (MO)		P	P								P	P		
Integrate appropriate personal and professional values on patient care by adhering to the Radiographers Practice Standards and Standards of Ethics. (MO)					P								P	
Respond appropriately to medical emergencies and describe the role of healthcare team members in responding to a local or national emergency. (MO)			P		P							P	P	P
Comply with departmental and institutional response to emergencies, disasters and accidents. (MO)			P		P							P	P	P
Apply standard and transmission-based precautions, appropriate medical asepsis, and sterile technique. (MO)					P								P	
Apply the principles of total quality management to include assessment, analysis, education, performance, evaluation, implementation, outcomes measurement, and documentation of quality performance standards. (MO)			P		P							P	P	
Demonstrate competency in the principles of radiation protection standards and use personnel and radiation protection measures each exam warrants. (MO)	P		P		P							P	P	
Demonstrate competency in operating radiographic equipment and report equipment malfunctions. (MO)	P		P		P							P	P	
Demonstrate safe, ethical, and legal practices. (MO)			P	P	P							P	P	P

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 3C (cont.)	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Demonstrate the principles of assisting, transporting, transferring, positioning and immobilizing patients with standard patient care and management procedures. (MO)	P		P		P							P	P	
Demonstrate professional work habits. (MO)				P										P
Demonstrate competency in at least 4 of the following mandatory radiographic examinations not previously completed: thumb, finger, wrist, forearm, elbow, humerus, trauma upper extremity, shoulder, trauma shoulder, foot, ankle, tibia, fibula, knee, femur, trauma lower extremity, pelvis, hip, portable orthopedic, cross-table lateral hip, routine chest, decubitus chest, portable chest, wheelchair or stretcher AP chest, pediatric chest, supine abdomen, upright abdomen, decubitus abdomen, portable abdomen, cervical spine, cross-table trauma cervical spine, thoracic spine, lumbar spine, ribs, paranasal sinuses, esophagus, upper gastrointestinal, small bowel, barium enema, operative cholangiogram, or orthopedic c-arm. (MO)	P		P		P							P	P	

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 3C (cont.)	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Demonstrate competency in at least 7 of the following elective radiographic examinations: pediatric upper extremity, clavicle, scapula, acromioclavicular joints, toes, os calcis, patella, pediatric lower extremity, pediatric abdomen, pediatric portable, sacroiliac joints, sacrum, coccyx, scoliosis, sternum, sternoclavicular joints, skull, facial bones, nasal bones, zygomatic arches, mandible, orbits, temporomandibular joints, soft tissue neck, intravenous urography, retrograde urogram, cystogram, cystourethrogram, endoscopic retrograde cholangiopancreatography (ERCP), myelogram, arthrogram, or non-orthopedic c-arm. (MO)	P		P		P							P	P	
Demonstrate competency in the use of picture archival and communications system (PACS) and recognize common problems associated with retrieving or viewing images within PACS. (MO)	P		P		P							P	P	
Integrate the radiographer's practice standards into clinical practice setting. (MO)	P				P								P	
Practice darkroom procedures resulting in radiographs of suitable quality. (MO)					P								P	
Position the patient and image receptor to achieve accurate demonstration of the affected body part. (MO)	P		P		P							P	P	
Operate the beam restrictor to limit radiation exposure and improve image quality. (MO)	P				P								P	

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 3C (cont.)	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Use lead markers on the image receptor to indicate body position and/or time. (MO)	P				P								P	
Use patient and family education strategies appropriate to the comprehension level of the patient or family. (MO)		P	P		P						P	P		
Inquire if a patient has a medical condition or allergy that would contraindicate the use of contrast media before the introduction of contrast and assist the physician in administration of contrast as required by each radiographic procedure. (MO)		P	P		P						P	P		
Recognize abnormal lab values relative to the imaging study ordered. (MO)			P		P							P		
Determine corrective measures to improve inadequate images. (MO)	P		P		P							P	P	
Examine demographic factors that influence patient compliance with medical care. (MO)					P							P		
Examine procedure orders for accuracy and make corrective actions when applicable. (MO)			P		P							P		
Differentiate between emergency and non-emergency procedures. (MO)			P		P							P		
Assess the patient, record clinical history, and demonstrate competent assessment skills through effective management of the patient's physical and mental status. (MO)			P		P							P		
Adapt procedures to meet age-specific, disease-specific and cultural needs of patients. (MO)	P		P		P							P	P	

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 3C (cont.)	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Select image receptor and/or grid combinations appropriate for the part being examined and technical factors to produce quality diagnostic images with the lowest radiation exposure possible. (MO)	P		P		P							P	P	
Critique images for appropriate anatomy, accuracy of positioning, image quality and patient identification. (MO)	P		P		P							P		

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 64	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
The student will identify and discuss the various ethical codes that apply to radiographers. (SLO)		M	M	M	M						M	M	M	M
The student will complete practice registry examinations. (SLO)	M		M		M							M	M	
Deduce the legal parameters for operation of radiographic facilities. (MO)			P		P							P		
Evaluate image quality and testing of a fluoroscopic system. (MO)	P				P								P	
List components of the radiography system and describe their function. (MO)	M												M	
Describe emergency procedures following a contrast reaction. (MO)	M		P		P							P	M	
Illustrate and describe the interactions of x-rays with matter. (MO)	M												M	
Demonstrate appropriate patient communication skills. (MO)		M									M			
Evaluate radiographic functions. (MO)	M		P									P	M	
Calculate a grid ratio. (MO)	P												P	
Assess situations involving legal issues in radiology. (MO)			P		P							P		
Summarize the geometric factors that affect radiographic quality. (MO)	M		P									P	M	
Relate source to image distance, filtration and focal spot to their observable effects on radiographic quality. (MO)	M		M									M	M	
Relate between density, contrast, and resulting image latitude. (MO)	P		P									P	P	

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 4	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
The student will demonstrate technical competency. (SLO)	M		M		M							M	M	
Explain how a person's cultural beliefs toward illness and health affect his or her health status. (MO)		M	M									M		M
Recognize life-threatening electrocardiogram (ECG) tracing. (MO)	M		M									M	M	
Adhere to team practice concepts that focus on organizational theories, roles of team members, conflict resolution and principles of interpersonal relationships. (MO)					M								M	
Adhere to national, institutional and departmental standards, policies and procedures regarding care of patients, providing radiologic procedures and reducing medical errors. (MO)					M								M	
Execute medical imaging procedures under the appropriate level of supervision. (MO)	M		M		M							M	M	
Provide psychosocial support and patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture. (MO)		M	M								M	M		
Integrate the use of appropriate and effective written, oral and nonverbal communication with patient, the public and members of the healthcare team in the clinical setting while maintaining patient confidentiality standards and meeting HIPAA requirements. (MO)		M	M								M	M		

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Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 4 (cont.)	Connect Outcomes with an I, P, or M (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Integrate appropriate personal and professional values on patient care by adhering to the Radiographers Practice Standards and Standards of Ethics. (MO)					M								M	
Respond appropriately to medical emergencies and describe the role of healthcare team members in responding to a local or national emergency. (MO)			M		M							M	M	M
Comply with departmental and institutional response to emergencies, disasters and accidents. (MO)			M		M							M	M	M
Apply standard and transmission-based precautions, appropriate medical asepsis, and sterile technique. (MO)					M								M	
Apply the principles of total quality management to include assessment, analysis, education, performance, evaluation, implementation, outcomes measurement, and documentation of quality performance standards. (MO)			M		M							M	M	
Demonstrate competency in the principles of radiation protection standards and use personnel and radiation protection measures each exam warrants. (MO)	M		M		M							M	M	
Demonstrate competency in operating radiographic equipment and report equipment malfunctions. (MO)	M		M		M							M	M	
Demonstrate safe, ethical, and legal practices. (MO)			M	M	M							M	M	M
Demonstrate the principles of assisting, transporting, transferring, positioning and immobilizing patients with standard patient care and management procedures. (MO)	M		M		M							M	M	

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Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 4 (cont.)	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Demonstrate professional work habits. (MO)				M										M
Demonstrate competency in the use of picture archival and communications system (PACS) and recognize common problems associated with retrieving or viewing images within PACS. (MO)	M		M		M							M	M	
Integrate the radiographer's practice standards into clinical practice setting. (MO)	M				M								M	
Practice darkroom procedures resulting in radiographs of suitable quality. (MO)					M								M	
Position the patient and image receptor to achieve accurate demonstration of the affected body part. (MO)	M		M		M							M	M	
Operate the beam restrictor to limit radiation exposure and improve image quality. (MO)	M				M								M	
Use lead markers on the image receptor to indicate body position and/or time. (MO)	M				M								M	
Use patient and family education strategies appropriate to the comprehension level of the patient or family. (MO)		M	M		M						M	M		
Inquire if a patient has a medical condition or allergy that would contraindicate the use of contrast media before the introduction of contrast and assist the physician in administration of contrast as required by each radiographic procedure. (MO)		M	M		M						M	M		
Recognize abnormal lab values relative to the imaging study ordered. (MO)			M		M							M		
Determine corrective measures to improve inadequate images. (MO)	M		M		M							M	M	

Key for Level of Learning
(Use for Mapping SLOs/MOs to PLOs to ILOs)
I = Knowledge/Skill Introduced
P = Knowledge/Skill Practiced/Applied
M = Knowledge/Skill Mastered

Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 4 (cont.)	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Examine demographic factors that influence patient compliance with medical care. (MO)					M							M		
Examine procedure orders for accuracy and make corrective actions when applicable. (MO)			M		M							M		
Differentiate between emergency and non-emergency procedures. (MO)			M		M							M		
Assess the patient, record clinical history, and demonstrate competent assessment skills through effective management of the patient's physical and mental status. (MO)			M		M							M		
Adapt procedures to meet age-specific, disease-specific and cultural needs of patients. (MO)	M		M		M							M	M	
Select image receptor and/or grid combinations appropriate for the part being examined and technical factors to produce quality diagnostic images with the lowest radiation exposure possible. (MO)	M		M		M							M	M	
Critique images for appropriate anatomy, accuracy of positioning, image quality and patient identification. (MO)	M		M		M							M		
Verify competency in all mandatory radiographic examinations and a minimum of 9 elective radiographic examinations listed as program terminal competencies. (MO)	M		M		M							M	M	

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Outcomes Mapping

Student Learning Objectives (SLOs), Measureable Objectives (MOs), Administrative Unit Objectives (AUOs)														
Course: RAD 4 (cont.)	Connect Outcomes with an **I, P, or M** (see Key in Footer) identifying the level to which knowledge or a skill can be demonstrated in that portion of the course or service.													
SLOs, MOs, AUOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	ILO 1	ILO 2	ILO 3	ILO 4
Document 40 hours of observation time in the following developing imaging and/or therapeutic technologies: Surgery, Sonography, Mammography, Angiography, Nuclear Medicine, Computed Tomography, Magnetic Resonance Imaging, Radiation Therapy, Cardiac-Interventional, or Vascular Interventional. (MO)	M		M		M							M	M	

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