Advanced Medical Imaging Technology

MRI Addendum
2024-2025

Clinical Competencies

Magnetic Resonance Imaging Didactic and Clinical Competency Requirements

MRI Practice Standards

The practice of magnetic resonance is performed by a segment of health care professionals responsible for the use of radiofrequencies (RFs) within a magnetic field on humans and animals for diagnostic, therapeutic or research purposes. A magnetic resonance technologist performs magnetic resonance procedures at the request of and for interpretation by a licensed independent practitioner.

The complex nature of disease processes involves multiple imaging modalities. Although an interdisciplinary team of clinicians, magnetic resonance technologists and support staff plays a critical role in the delivery of health services, it is the magnetic resonance technologist who performs the magnetic resonance examination that creates the images needed for diagnosis.

Magnetic resonance integrates scientific knowledge, technical competence and patient interaction skills to provide safe and accurate procedures with compassion. A magnetic resonance technologist recognizes patient conditions essential for the successful completion of the procedure.

Magnetic resonance technologists must demonstrate an understanding of human anatomy, human physiology, pathology, pharmacology and medical terminology. They must maintain a high degree of accuracy in positioning and magnetic resonance technique. Magnetic resonance technologists must possess, use and maintain knowledge about magnetic protection and safety. Magnetic resonance technologists independently perform or assist the licensed independent practitioner in the completion of diagnostic, therapeutic, interventional and fusion magnetic resonance procedures. Magnetic resonance technologists prepare, administer and document activities related to medications in accordance with state and federal regulations or lawful institutional policy.

The magnetic resonance technologist is the primary liaison between patients, licensed independent practitioners, and other members of the support team. Magnetic resonance technologists must remain sensitive to the needs of the patient through good communication, patient assessment, patient monitoring and patient care skills. As members of the health care team, magnetic resonance technologists participate in quality improvement processes and continually assess their professional performance.

Magnetic resonance technologists think critically and use independent, professional and ethical judgments in all aspects of their work. They engage in continuing education to include their area of practice to enhance patient care, public education, knowledge and technical competence.

In the AMIT MRI program, all students will employ proper (non-ionizing) radiation and MR safety practices by comprehension of and adhering to the following Food and Drug Administration (FDA) specific absorption rate (SAR) limits when performing MR procedures on patients:

Whole body = 4 watts/kg for 15 minutes exposure average

Head = 3 watts/kg for 10 minutes exposure average

Head & Torso = 8 watts/kg for 5 minutes exposure average

Extremity = 12 watts/kg for 5 minutes exposure average

* The ASRT MRI Practice Standards complete document can be found:

https://www.asrt.org/main/standards-regulations/practice-standards/practice-standards

MRI Program Outcomes and Goals

Outcome	Goal
The student will demonstrate critical thinking skills.	Goal – To increase critical thinking skills in relation to the following: - Improving patient care through self-evaluation and critique. - MR techniques, parameters and trade-offs in order to ensure high diagnostic images
The student will communicate effectively in a variety of professional settings.	Goal – To improve and gain experience in students professional communication skills.
The student will demonstrate high standards of clinical competence.	Goal – To develop the student's proficiency in imaging procedures and patient care skills by strictly following all ARRT MRI scan requirements.
The student will demonstrate high standards of social responsibility by engaging in ethical professional practice.	Goal – To foster a high degree of professionalism, responsibility, and ethical behavior within the student.
The student will synthesize professional knowledge and evaluate varying viewpoints.	Goal – To develop/nurture the necessary tools to allow synthesis of information, introspection and self-reflection to achieve the best patient outcomes.

MRI Program Effectiveness Outcomes

- The program will enroll and graduate students who will benefit from the program of study.
- Student will enroll into the MRI program. Students will complete the program.
- Graduates will pass their ARRT on their first attempt.
- Graduates will obtain employment within 12 months of graduation.
- Graduates will be satisfied with their program of study.
- Graduates are prepared for entry-level work in MRI.

Advanced Medical Imaging Technology (AMIT) Magnetic Resonance Imaging (MRI)
Screening Questionnaire

This form is required to be completed by all AMIT MRI students.

The MR system is a very strong magnetic field that may be hazardous to individuals entering the MR environment or MR system room if they have certain metallic, electronic, magnetic, or mechanical implants, devices or objects. Therefore, all individuals are required to fill out this form BEFORE entering the MR environment or MR system room. Be advised, the MR system magnet is ALWAYS on.

Last Name: _____ First Name: _____

Email Address: _____ Phone: _____

Have you had prior surgery or an operation of any kind?

❏ Yes
❏ No

If yes, then please indicate date and type of surgery:

_____
_____
_____

Have you had an injury to the eye involving a metallic object (e.g. metallic slivers, foreign body)?

❏ Yes
❏ No

If yes, then please describe:

_____
_____
_____

Have you ever been injured by a metallic object or foreign body?

❑ Yes
❑ No

If yes, then please describe:

_____

_____

_____

WARNING:

Certain implants, devices or objects may be hazardous to you in the MR environment or MR system room. Do not enter the MR environment or MR system room if you have any question or concern regarding an implant, device or object.

Please indicate if you have any of the following:

❑ Aneurysm clip(s)

❑ Cardiac pacemaker

❑ Implanted cardioverter defibrillator (ICD)

❑ Electronic implant or device

❑ Magnetically activated implant or device

❑ Neurostimulation system

❑ Spinal cord stimulator

❑ Cochlear implant or implanted hearing aid

❑ Insulin infusion pump

❑ Implanted drug infusion device.

❑ Any type of prosthesis or implant

❑ Artificial or prosthetic limb

❑ Any metallic fragment or foreign body

❑ Any external or internal metallic object

❑ Hearing aid

❑ Other implant/device

Important Instructions:

Remove all metallic objects before entering the MR environment or MR system room including hearing aids, beeper, cell phone, keys, eyeglasses, hair pins, barrettes, jewelry (including body piercing jewelry), watch, safety pins, paperclips, money clip, credit cards, bank cards, magnetic strip cards, coins, pens, pocket knife, nail clipper, steel-toed boots/shoes, and tools. Loose metallic objects are especially prohibited in the MR system room and MR environment.

Please consult with the Advanced Medical Imaging Technology (AMIT) program if you have any question, or concern, BEFORE you enter the MR system room or the AMIT program.

I attest that the above information is correct to the best of my knowledge. I have read and understand the entire contents of this form and have had the opportunity to ask questions regarding the information on this form.

Signature: _____ Date: _____

AMIT MRI Student Clinical Site Orientation Checklist

This form is to be completed by the Supervising Technologist on the first day of clinical rotation to ensure MRI student technologist has been formally orientated on the items listed below.

Upon completion, MRI student technologist will submit this form to AMIT MRI program faculty.

- □ MRI safety procedures
- □ Quench/Emergency stop/O^2 sensor alarm procedures
- □ Fire safety and procedures
- □ Evacuation procedures
- □ Chemical spill/hazard procedures
- □ HIPAA training
- □ Emergency Overhead Code training
- □ Cardiac/Respiratory Code training and procedures
- □ Electrical hazard procedures
- □ Standard precautions
- □ Venipuncture (if applicable)

_____ Clinical Site

_____ Supervising Technologist (Print & Signature)

_____ Student Technologist Signature (Print & Signature)

_____ DATE

MRI Student Supervision Policy

All students are required to perform imaging procedures under the **direct supervision** of a qualified practitioner until the student achieves competency. After achieving competency, students are required to perform imaging procedures under **indirect supervision** of a qualified magnetic resonance technologist.

JRCERT standard 5.4 provides further guidance in "qualified magnetic resonance technologist." Students are only allowed to work under direct and indirect supervision from ARRT MR registered technologists. Under no circumstances should students be supervised, either indirectly or directly, by a technologist who is not registered by the ARRT in magnetic resonance imaging. If a student should be in a clinical area without an ARRT MR registered technologist due to clinical instructor or qualified personnel absence, they should contact the program director immediately for clinical reassignment.

Direct supervision is defined as student supervision provided by a qualified magnetic resonance technologist who reviews the procedure in relation to the student's achievement, evaluates the condition of the patient in relation to the student's knowledge, is physically present during the conduct of the procedure, and reviews and approves the procedure and/or image.

Indirect supervision is defined as student supervision provided by a qualified magnetic resonance technologist who is immediately available to assist students regardless of the level of student achievement. "Immediately available" is interpreted as the physical presence of a qualified magnetic resonance technologist adjacent to the room or location where a magnetic resonance procedure is being performed. This availability applies to all areas where magnetic resonance equipment is in use on patients.

All students are required to perform imaging procedures under the **direct supervision** of a qualified practitioner until the student achieves competency. After achieving competency, students are required to perform imaging procedures under **indirect supervision** of a qualified magnetic resonance technologist.

I have read and understand the information in this policy.

_____   _____

Student Name and Signature   **Date**

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All students are required to perform imaging procedures under the **direct supervision** of a qualified practitioner until the student achieves competency. After achieving competency, students are required to perform imaging procedures under **indirect supervision** of a qualified magnetic resonance technologist.

I have read and understand the information in this policy. As the clinical setting instructor, I take responsibility for enforcing and monitoring these supervision requirements and have provided this information to the clinicals staff.

_____   _____

Clinical Instructor Name and Signature   Date
Clinical Setting Name _____

MRI ARRT Clinical Competency Completion Policy

Demonstration of clinical competence means the student has performed the procedure(s) independently, consistently, and effectively during their formal education. Competent performance of these fundamental activities, in conjunction with mastery of the knowledge and cognitive skills covered by the MRI examination, provides the basis for the acquisition of the full range of procedures typically required in a variety of settings.

General Performance Considerations

3) Patient Diversity
   a. Variations in patient characteristics such as age, gender and medical condition.
3) Patient Care Simulated Performance (CPR, Venipuncture, ECG)
   a. Competently demonstrate skills as similar as circumstances permit to the cognitive, psychomotor, and affective skills required for performing the procedures on patients.
   b. Skills required to competently perform the simulated task will generalize or transfer to patient scanning. The student must evaluate related images.
3) Elements of Competence
   a. Program director, clinical coordinator, or clinical site preceptor must observe the student performing the procedure independently, consistently, and effectively.

Magnetic Resonance Imaging Specific Requirements

Candidates must demonstrate competence in the following areas:

- 7 mandatory general patient care procedures
  o Procedures should be performed on patients whenever possible, but simulation is acceptable following the above guidelines regarding simulation.
- 8 mandatory MRI safety requirements
  o Student must demonstrate competence
- 17 mandatory MRI imaging procedures
  o Procedures MUST be completed on actual patients following above guidelines for demonstrating competence.
- 12 of 32 elective MRI imaging procedures
  o Procedures should be performed on patients; however, up to 5 of the elective procedures may be performed on volunteers (provided site approves of scanning volunteers and there is a policy to protect the volunteer and the site). All volunteer scans must be limited to the summer semester completions.
- 7 mandatory MRI quality control procedures
  o Student must demonstrate competence

*See the MRI Student Competency Evaluation Form for specific details regarding what students must demonstrate independently to complete a scan for competency completion verification.

MRI Clinical Time Sheet

Student Name _____   Academic Semester/Year _____

Week of _____   Clinical Site _____

Day	Date	Time In	Technologist's Initials	Time Out	Total Hours	Technologist's Initials	Lunch	Sent Home Early
Monday							Yes No _____ minutes	**Yes No**
Tuesday							Yes No _____ minutes	**Yes No**
Wednesday							Yes No _____ minutes	**Yes No**
Thursday							Yes No _____ minutes	**Yes No**
Friday							Yes No _____ minutes	**Yes No**
Saturday							Yes No _____ minutes	**Yes No**
TOTAL								

STUDENT LEAVE AUTHORIZATION ATTACHED?   YES   NO

Technologist's signature _____

Student's signature _____

By signing this, I verify the time listed is the actual time I was there.

STUDENT LEAVE AUTHORIZATION

NAME _____

TODAY'S DATE _____   EFFECTIVE DATE _____

Leave of absence for _____ hours

Reason for Absence:

_____

_____

_____

Time will be made up by:

_____

_____

_____

Additional Documentation attached: YES_____   NO_____

_____

STUDENT'S SIGNATURE

_____

PROGRAM OFFICIAL'S SIGNATURE

Magnetic Resonance Imaging

1. Introduction

Candidates applying for certification and registration under the primary eligibility pathway are required to meet the Professional Education Requirements specified in the *ARRT Rules and Regulations*. ARRT's *Magnetic Resonance Imaging Didactic and Clinical Competency Requirements* are one component of the Professional Education Requirements.

The requirements are periodically updated based upon a practice analysis which is a systematic process to delineate the job responsibilities typically required of magnetic resonance imaging (MRI) technologists. The result of this process is a task inventory which is used to develop the clinical competency requirements (see section 4 below) and the content specifications which serve as the foundation for the didactic competency requirements (see section 3 below) and the examination.

2. Documentation of Compliance

After the candidate submits the *Application for Certification and Registration*, the program director (and authorized faculty member if required) will verify that ARRT requirements were met using the Program Verification Form on the ARRT Educator website. The verification includes confirming the applicant has completed the educational program, including the ARRT Didactic and Clinical Competency requirements and conferment of a degree meeting ARRT requirements.
Candidates who complete their educational program during 2025 or 2026 may use either the 2020 Didactic and Clinical Competency Requirements or the 2025 requirements. Candidates who graduate after January 31, 2027, must use the 2025 requirements.

3. Didactic Competency Requirements

The purpose of the didactic competency requirements is to document that individuals had the opportunity to develop fundamental knowledge, integrate theory into practice, and hone affective and critical thinking skills required to demonstrate professional competence. Candidates must successfully complete coursework addressing the topics listed in the ARRT Content Specifications for the MRI Examination. These topics would typically be covered in a nationally recognized curriculum published by organizations such as ASRT or ISMRT. Educational programs accredited by a mechanism acceptable to ARRT generally offer education and experience beyond the minimum requirements specified in the content specifications and clinical competency documents.

4. Clinical Competency Requirements

The purpose of the clinical competency requirements is to document that individuals have demonstrated competence performing the clinical activities fundamental to a particular discipline. Competent performance of these fundamental activities, in conjunction with mastery of the cognitive knowledge and skills as documented by the examination requirement, provides the basis for the acquisition of the full range of procedures typically required in a variety of settings. Demonstration of clinical competence means the candidate has performed the procedure independently, consistently, and effectively during the course of their formal education. The following pages identify the specific procedures for the clinical competency requirements. Candidates may wish to use these pages, or their equivalent, to record completion of the requirements. The pages do NOT need to be sent to the ARRT.

General Requirement: Remote scanning is not acceptable for completion of ARRT Clinical Requirements. The candidate must complete the examination or procedure at the facility where the patient and equipment are located. The candidate must be physically present during the examination or procedure.

4.1 General Performance Considerations

4.1.1 Patient Diversity

Demonstration of competence should include variations in patient characteristics such as age, gender, and medical condition.

4.1.2 Simulated Performance

The ARRT requirements specify that general patient care procedures may be simulated as designated in the specific requirements below. Simulations must meet the following criteria:

- ARRT defines simulation of a clinical procedure routinely performed on a patient as the candidate completing the hands-on task of the procedures on a live human being, using the same level of cognitive, psychomotor, and effective skills required for performing a procedure on a patient in a clinical setting standardized to mirror the physical facilities where practice occurs.
- ARRT requires that competencies performed as a simulation must meet the same criteria as competencies demonstrated on patients. For example, the competency must be performed under direct observation of the program director or program director's designee and be performed independently, consistently, and effectively.

4.1.3 Elements of Competence

Demonstration of clinical competence requires that the program director or the program director's designee has observed the candidate performing the procedure independently, consistently, and effectively during the course of the candidate's formal educational program.

Remote scanning is not acceptable for completion of ARRT Clinical Requirements. The candidate must complete the examination or procedure at the facility where the patient and equipment are located. The candidate must be physically present during the examination or procedure.

4.2 Magnetic Resonance Imaging Specific Requirements

As part of the education program, candidates must demonstrate competence in the clinical procedures identified below. These clinical procedures are listed in more detail in the following sections.

- 7 mandatory general patient care procedures
- 8 mandatory MRI safety requirements
- 17 mandatory MR imaging procedures
- 12 of the 32 elective MR imaging procedures and
- 7 mandatory MRI quality control procedures

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* The abbreviation "e.g.," is used to indicate that examples are listed in parenthesis, but that it is not a complete list of all possibilities.

4.2.1 General Patient Care Procedures

Candidates are required to be BLS/CPR certified. They must have demonstrated competence in the remaining 6 patient care procedures listed below. The procedures should be performed on patients whenever possible, but simulation is acceptable if state or institutional regulations prohibit candidates from performing the procedures on patients.

General Patient Care Procedures	Date Completed	Competence Verified By
BLS/CPR		
Vital Signs (Blood Pressure, Pulse, Respiration)		
Sterile Technique		
Standard Precautions		
Transfer of Patient		
Care of Patient Medical Equipment (*e.g., Oxygen Tank, IV Tubing)		
Venipuncture		

4.2.2 MRI Safety Requirements

Candidates must demonstrate competence in 8 areas of MRI Safety listed below.

MRI Safety Requirements	Date Completed	Competence Verified By
Screening Patients, Personnel, and Non-Personnel for MR Safe, MR Conditional, and MR Unsafe Devices and Objects		
Identify MR Safety Zones		
Static Magnetic Field (e.g., Translational and Rotational Forces)		
Radiofrequency Field (e.g., Thermal Heating [SAR], Coil Positioning, Patient Positioning, Insulation)		
Gradient Magnetic Fields (e.g., Induced Current, Auditory Considerations)		
Communication and Monitoring Considerations (e.g., Sedated Patients, Verbal and Visual Contact, Vital Signs)		
Contrast Media Safety (e.g., NSF, Renal Function)		
Other MRI Safety Considerations (e.g., Cryogen Safety, Fire, Medical Emergencies, Laser Alignment Lights, Quench)		

* The abbreviation "e.g.," is used to indicate that examples are listed in parenthesis, but that it is not a complete list of all possibilities.

4.2.3 MRI Procedures

Candidates must demonstrate competence in the 17 mandatory procedures listed on the following pages. For the mandatory procedures, candidates must be evaluated while scanning actual patients. Candidates are also required to demonstrate competence for 12 of the 32 elective procedures. Elective procedures should be performed on patients; however, up to 5 of the elective procedures may be performed on volunteers, as long as your institution has a policy that assures the protection of both the volunteer's and the institution's interests.

When performing MRI procedures, the candidate must independently demonstrate appropriate:

Patient skills including:

- evaluation of requisition and/or medical record
- identification of patient
- documentation of patient history including allergies
- safety screening including implants
- patient education concerning the procedure
- patient care and assessment
- preparation of examination room
- Standard Precautions
- preparation and/or administration of contrast media
- MRI safety procedures and precautions
- patient discharge with postprocedure instructions

Technical and procedural skills including:

- selection of optimal imaging coil
- patient positioning
- protocol selection
- parameter selection
- image display, networking, and archiving
- postprocessing
- documentation of procedure and patient data in appropriate records
- data acquisition

Evaluation skills including:

- analysis of the image for technical quality
- demonstration of correct anatomic regions
- proper identification on images and patient data
- recognition of relevant pathology
- exam completeness

4.2.3 MRI Procedures (continued)

Head and Neck	Mandatory	Elective	Patient or Volunteer	Date Completed	Competence Verified By
Brain	✓		Patient		
Internal Auditory Canals (IACs)	✓		Patient		
Pituitary	✓		Patient		
Orbits		✓			
Cranial Nerves (nonIACs)		✓			
Vascular Head MRA	✓		Patient		
Vascular Head MRV		✓			
Brain Perfusion		✓			
Brain Spectroscopy		✓			
Soft Tissue Neck		✓			
Vascular Neck	✓		Patient		
Spine					
Cervical	✓		Patient		
Thoracic	✓		Patient		
Lumbar	✓		Patient		
Spinal Trauma		✓			
Total Spine (Large FOV)		✓			
Sacrum-Coccyx		✓			
Sacroiliac (SI) Joints		✓			
Thorax					
Chest (noncardiac)		✓			
Breast		✓			
Vascular Thorax		✓			
Brachial Plexus		✓			

* The abbreviation "e.g.," is used to indicate that examples are listed in parenthesis, but that it is not a complete list of all possibilities.

4.2.3 MRI Procedures (continued)

Abdomen and Pelvis	Mandatory	Elective	Patient or Volunteer	Date Completed	Competence Verified By
Liver	✓		Patient		
Pancreas		✓			
MRCP	✓		Patient		
Adrenals		✓			
Kidneys		✓			
Enterography		✓			
Vascular Abdomen		✓			
Female Soft Tissue Pelvis (e.g., Uterus)		✓			
Male Soft Tissue Pelvis (e.g., Prostate)		✓			
Musculoskeletal					
Temporomandibular Joints (TMJs)		✓			
Sternum/Sternoclavicular (SC) Joints		✓			
Shoulder	✓		Patient		
Long Bones (Upper Extremity)		✓			
Elbow		✓			
Wrist	✓		Patient		
Hand		✓			
Finger/Thumb		✓			
Bony Pelvis		✓			
Hip	✓		Patient		
Long Bones (Lower Extremity)		✓			
Knee	✓		Patient		
Ankle	✓		Patient		
Foot	✓		Patient		
Arthrogram		✓			
Soft Tissue (e.g., tumor, infection)		✓			

* The abbreviation "e.g.," is used to indicate that examples are listed in parenthesis, but that it is not a complete list of all possibilities.

4.2.3 MRI Procedures (continued)

Additional Imaging Procedures	Mandatory	Elective	Patient or Volunteer	Date Completed	Competence Verified By
Image Postprocessing (MIP Reformation, MPR, Subtraction)	✓				
CINE (e.g., CSF Flow Study, TMJs)		✓			

4.2.4 MRI Quality Control Procedures

Candidates must demonstrate competence in the 7 quality control activities listed below. The first 4 procedures are performed on a QC phantom.

MRI Quality Control Procedures	Date Completed	Competence Verified By
Signal to Noise Ratio		
Center Frequency		
Transmitter Gain or Attenuation		
Geometric Accuracy		
Equipment Inspection (e.g., Coils, Cables, Door Seals)		
Monitor Cryogen Levels		
Room Temperature and Humidity		

* The abbreviation "e.g.," is used to indicate that examples are listed in parenthesis, but that it is not a complete list of all possibilities.

Magnetic Resonance Imaging Clinical Experience Requirement Procedures Verification Form

Category & Procedure	Date Performed	Time	Facility Name	Technologist Initials
Routine Brain - M				
Routine Brain				
Routine Brain				
Routine Brain				
Routine Brain				
Internal Auditory Canal-M				
Internal Auditory Canal				
Internal Auditory Canal				
Internal Auditory Canal				
Internal Auditory Canal				
Orbits - E				
Orbits				
Orbits				
Orbits				
Orbits				
Pituitary - M				
Pituitary				
Pituitary				
Pituitary				
Pituitary				

*EXAMPLE Only – Official Verification Form can be found on Canvas. A printed copy of all necessary forms will be issued out at the beginning of the semester.

AMIT Office Fax – 513-558-4009

MRI Student Competency Evaluation

Student: _____   Scan Competency: _____
Clinical Rotation: _____   Date: _____
Supervising Technologist: _____

Patient Care Skills
- Evaluation of requisition and/or medical record
- Identification of patient
- Documentation of patient history including allergies
- Safety Screening including implants
- Patient education concerning the procedure
- Patient care and assessment
- Preparation of examination room
- Standard Precautions
- Preparation and/or administration of contrast media
- MRI safety procedures and precautions
- Patient discharge with post-procedure instructions

Acceptable	Not Acceptable	N/A

Technical and Procedural Skills
- Selection of optimal imaging coil
- Patient positioning
- Protocol selection
- Parameter selection
- Image display, networking, and archiving
- Post-processing
- Documentation of procedure and patient data in appropriate records
- Data acquisition

Acceptable	Not Acceptable	N/A

Evaluation Skills
- Analysis of the image for technical quality
- Demonstration of correct anatomic regions
- Proper identification on images and patient data
- Recognition of relevant pathology
- Exam completeness

Acceptable	Not Acceptable	N/A

Is the student capable in performing this examination without direct assistance?
☐ YES ☐ NO

_____ Supervising Technologist Signature

_____ Student Technologist

MRI Clinical Evaluation Report

Student name _____   Date _____

Clinical site _____   Semester/Year _____

Technologist _____

Please evaluate the University of Cincinnati MRI students on the following with 1 being poor, 2 being average, 3 being good, and 4 being excellent. Please grade the student on where they should be based on how far they are in the program.

Answer Scale: **Question:**

1	2	3	4	N/A	
1	2	3	4	N/A	1. Does the student dress appropriately and according to UC's uniform policy? Is the student punctual?
1	2	3	4	N/A	2. Does the student get along well with staff/communicate well with physicians?
1	2	3	4	N/A	3. Does the student take constructive criticism well?
1	2	3	4	N/A	4. Does the student seek guidance about things he/she doesn't understand?
1	2	3	4	N/A	5. Does the student display or express enthusiasm to learn?
1	2	3	4	N/A	6. Does the student show initiative (i.e., bringing patients to MR, screening patients, setting up exams, running scans, either with assistance or on their own?)
1	2	3	4	N/A	7. Does the student assist in stocking scan room and help in maintaining the equipment?
1	2	3	4	N/A	8. Does the student select the correct coils, protocols, sequences, and parameters for the exam?
1	2	3	4	N/A	9. Is the student interested in helping with exams?
1	2	3	4	N/A	10. Does the student properly evaluate the requisition and/or medical records?
1	2	3	4	N/A	11. Does the student obtain necessary information before beginning an exam with regard to patient history/MR screening/patient ID?
1	2	3	4	N/A	12. Does the student explain the procedure to patients prior to scan?
1	2	3	4	N/A	13. Does the student demonstrate appropriate knowledge in image display, filming, and archiving?
1	2	3	4	N/A	14. Does the student employ proper MRI safety procedures and precautions?
1	2	3	4	N/A	15. Does the student employ Universal Precautions when necessary?
1	2	3	4	N/A	16. Does the student evaluate the resulting images for image quality?
1	2	3	4	N/A	17. Does the student evaluate the resulting images for optimal demonstration of anatomic region?
1	2	3	4	N/A	18. Does the student evaluate the resulting images for proper identification on images and patient data?
1	2	3	4	N/A	19. Does the student evaluate the resulting images for exam completeness?
1	2	3	4	N/A	20. Does the student assist the patient in dressing/undressing/help onto MR scanner table as necessary?
1	2	3	4	N/A	21. Does student prepare scan room and position the patient properly?
1	2	3	4	N/A	22. Does the student show technical proficiency?
1	2	3	4	N/A	23. Does the student show technical knowledge?

1	2	3	4	N/A	24. Does the student talk to the patient during the exam, letting them know of the scanner noises and directions (i.e., "please hold still", "noise for 4 minutes", "How are you doing? etc.)
1	2	3	4	N/A	25. Is the student discreet about asking the technologist questions in front of the patient?
1	2	3	4	N/A	26. Does the student explain the procedure to the patient to make the patient more comfortable?
1	2	3	4	N/A	27. Does the student refrain from inappropriate patient communication?
1	2	3	4	N/A	28. Is the student courteous to patients?
1	2	3	4	N/A	29. Does the student make good use of his/her time?
1	2	3	4	N/A	30. The student can analyze the need to modify standard procedures and technical factors to accommodate patient conditions and other variables.

AMIT Office Fax – 513-558-4009

What are the strengths of this student?

_____

_____

Areas for improvement?

_____

_____

Any other comments?

_____

_____

Technologist signature _____

Date_____

Student Evaluation of MRI Clinical Site & Clinical Preceptor

Student's Name _____   Semester & Year _____

Clinical Site _____   Clinical Preceptor _____

This form is <u>confidential</u> and is intended to enhance the clinical experience for future MRI students. Your honest input is appreciated.

<u>Clinical Site Evaluation</u>

Please evaluate your MRI clinical site on the following categories/questions.

Responses: Strongly Disagree=1, Disagree=2, Neither Agree Nor Disagree=3, Agree=4,

         Strongly Agree=5, N/A

Answer Scale: **Question:**

1	2	3	4	5	N/A	
1	2	3	4	5	N/A	1. The pace of the site enhanced my learning experience.
1	2	3	4	5	N/A	2. The organization of the MRI department allowed for optimal learning experiences during your rotation.
1	2	3	4	5	N/A	3. The expectations of you were well outlined and communicated early on during your rotation.
1	2	3	4	5	N/A	4. Were you comfortable with the level of responsibility you had during your rotation.
1	2	3	4	5	N/A	5. The technologist-student relationships enhanced my learning experience.
1	2	3	4	5	N/A	6. The technologist(s) were helpful.
1	2	3	4	5	N/A	7. The physician(s) were helpful.
1	2	3	4	5	N/A	8. Do you feel that as a result of this rotation you have developed professionally?
1	2	3	4	5	N/A	9. Do you feel that your professional objectives were met during your rotation?
1	2	3	4	5	N/A	10. How likely would you be to recommend this site to other students?

Do you have any additional comments or feedback regarding your rotation?

_____

_____

_____

Clinical Preceptor Evaluation

Please evaluate your MRI clinical preceptor on the following categories/questions.

Responses: Strongly Disagree=1, Disagree=2, Neither Agree Nor Disagree=3, Agree=4,

Strongly Agree=5, N/A

Answer Scale: **Question:**

1	2	3	4	5	N/A	
1	2	3	4	5	N/A	1. Does the preceptor allow for optimal learning experiences during your rotation?
1	2	3	4	5	N/A	2. Does the preceptor provide feedback/constructive criticism regarding your performance?
1	2	3	4	5	N/A	3. Does the preceptor communicate your expectations well?
1	2	3	4	5	N/A	4. Does the preceptor oversee your clinical experience during your rotation (daily and/or weekly)?
1	2	3	4	5	N/A	5. Does the preceptor make themselves available to help you when needed?
1	2	3	4	5	N/A	6. Does the preceptor display or express enthusiasm to have you as a student?
1	2	3	4	5	N/A	7. Does the preceptor answer your questions carefully and with patience?
1	2	3	4	5	N/A	8. Does the preceptor act approachable and responsive when you have questions?
1	2	3	4	5	N/A	9. Does the preceptor use explanations that are clear and understandable?
1	2	3	4	5	N/A	10. Does the preceptor encourage you to ask questions and participate in all aspects of MRI patient care and scanning?

Do you have any additional comments or feedback regarding your preceptor?

_____

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_____

MRI Case Study Presentation Form Rubric

Name: _____   Date: _____

Case studies are a necessary component of medical education to correlate didactic classes with clinical experience. It also enables students in the class to see pathology that they may not have otherwise seen in their particular clinical experience. This method allows the student to have the experience to research a particular disease in more depth than class time allows. As such, you will be expected to use outside resources for more in-depth knowledge of the disease process to help you prepare a more professionally developed case study.

Grading Scale: 15 total sections to be graded on (worth 10 points each), for a total of 150 points.

4 excellent – 10 points
3 good, but not complete – 7.5 points
2 fair, needs significant work – 5 points
1 poor or non-existing – 2.5 or 0 points

Preparation   **Comments**

Patient history (patient's medical history)	4	3	2	1
Clinical signs and symptoms/Primary diagnosis(reason for MR exam)	4	3	2	1
Lab values and other data vs. Normal values (if applicable)	4	3	2	1
Correlation with other imaging modalities and testing (if patient had prev. exams)	4	3	2	1
Correlation with previous MRI examination (if applicable)	4	3	2	1

Presentation

Explanation of MR protocol/Techniques/MR scanner type and field strength	4	3	2	1
MR image clarity and explanation	4	3	2	1
Identification of anatomy and pathology (from x-rays, MR, CT, etc.)	4	3	2	1
Organization of presentation	4	3	2	1
Communication/presentation skills	4	3	2	1

Conclusion

Radiologist's report included and discussed. If not, explain why there is no report.	4	3	2	1
Treatment of patient (if available). If not, discuss treatment in general for topic	4	3	2	1
Prognosis of patient (if available). If not, discuss prognosis in general for topic	4	3	2	1
Knowledge of anatomy/pathology/physiology as it pertains to specific topic.	4	3	2	1
References (**AT LEAST THREE REFERENCES**)	4			1

Comments:

_____

_____

_____

Score: _____/150

MRI Clinical Uniform:

1. Solid color scrub top/bottom combination.
2. White lab coat (for Nuclear Medicine it needs to be long sleeved and down to mid-thigh). You can buy one for all modalities. For MRI, it needs to be mid-thigh or shorter, long or short sleeved is fine.
3. Shoes should be either white nursing shoes or **all white** gym shoes with white laces worn only for clinical rotations. (Nuclear Medicine requires closed toe and heel). No crocs are allowed.
4. Socks should be white.
5. No jackets or sweatshirts will be permitted during clinical hours unless they are scrub jackets.
6. Name badge should be worn at all times.
7. No unusual hair colors or styles.
8. Tattoos are permitted; however, tattoos that contain inappropriate language, inappropriate symbols, or symbols or phrases that may be offensive to any segment of our associate or patient population are not permitted. In these circumstances, the tattoos will be required to be covered. Facial tattoos are not permitted.
9. No earrings are allowed during MRI clinical rotations, unless approved by clinical site. Please check with your clinical site supervisor and let me know if they approve of the wearing of earrings. Otherwise, do not wear them - some earrings are ferrous, and thus should be avoided.
10. Conservative face makeup.
11. Only rings permitted are wedding rings.
12. No artificial fingernails. Nails must be free of polish, or polish must be free of chips.
13. No perfume or aftershave is to be worn.
14. Beards and mustaches must be well groomed and clean.
15. No necklaces or bracelets.
16. No sunglasses are permitted.
17. No head coverings of any type unless dictated by your religion and approved by the instructor.
18. No bobby pins or hair clips.

** Additions to this policy may be made at the discretion of the instructor as situations arise.